

Contributions to Economics

Alexander Bulatov *Editor*

World Economy and International Business

Theories, Trends, and Challenges

 Springer

Contributions to Economics

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Preface

With its integrated picture of the world economy, global business environment, and international business, this book is distinctive in its field. It combines a textbook approach with a survey approach. These elements make the book appropriate for various disciplines, including *World (Global) Economy*, *Global Business (Economic) Environment*, and *International (Global) Business, Applied Economics*. At the same time, some chapters would be of interest for academics and practitioners due to their research style. All authors of the book, experts in their academic fields, make its content as academic as lucid.

The book consists of three parts. The first—*World Economy and Global Economy*—starts with chapters on typology, principal conceptions and theories of global economy, and world economy dynamics and major trends, with special focus on the evolution of national economic systems and regional and inter-regional integration. In the next chapters, human, real, financial, and natural assets of the world are analyzed. In the end of this part, the focus is on global challenges—environmental, backwardness and modernization, and social challenges.

The second part—*Global Business Environment: Countries and Regions*—contains chapters analyzing the economic systems of developed economies (USA, EU, developed Asia) as well as less developed ones (China, India, South East Asia, the Near and Middle East, Latin America, Sub-Saharan Africa, post-Soviet economies).

The third part—*International Business: Macro and Micro Aspects*—starts with chapters on the balance of payments (as a principal macrodocument for international business of a country), global economic governance and international economic organizations, capital flows, multinational enterprises, global value chains, and capital markets. Subsequently, the book concentrates on chapters analyzing the multilateral trade system and global trade regulation, world markets of goods and services, global marketing, purchases and sales transactions in international business, international payments and currency markets, and knowledge transfer. This part ends in chapters on international labor migration, foreign aid, foreign debt, and business culture.

The authors of the book proceeded from the following:

- there is no need to present the relevant sections of economics in detail, given students have studied it (first of all in the framework of international economics), but it makes sense to tie this theory with the outlined material or to remind the reader about it. This is done in many chapters, but is first done in chapter “[Concepts and Theories of Global Economy](#)”;
- the book is written in a succinct style where it is possible, although this was not always possible, firstly due to the need to use large arrays of statistics and facts, and, most importantly, due to the different interests of the readers (one is interested in the economy of Latin American countries, and another is not). Therefore, the textbook is written with a proviso that not all of its chapters are mandatory for study;
- a reader is less interested in statistics than in trends and challenges faced by the world economy and global economy, global business environment, and international business. Therefore, in most chapters, statistics serve simply as a basis for economic analysis, and at the same time so that the reader may ply their skills of this analysis. All chapters are supplied with tables, graphs, or diagrams, as well as conclusions and references; and
- a reader needs practical skills, especially related to international business. The authors tried as far as possible to do this in their chapters, including the use of boxes, examples, and case studies.

Moscow, Russia

Alexander Bulatov

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Abbreviations

ASEAN	Association of Southeast Asian Nations
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
CEE	Central and Eastern Europe
CPI	Consumer Price Index
EAEU	Eurasian Economic Union
EBRD	European Bank for Reconstruction and Development
ECB	European Central Bank
EMH	Efficient Market Hypothesis
ESG	Environmental, Social, Governance
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FATF	Financial Action Task Force
FDI	Foreign Direct Investment
FSB	Financial Stability Board
FY	Fiscal Year
G20	Group of Twenty Major Advanced and Emerging Economies
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GNI	Gross National Income
GVC	Global Value Chain
HDI	Human Development Index
IAIS	International Association of Insurance Supervisors
IASB	International Accounting Standards Board
IBRD	International Bank for Reconstruction and Development (Member Institute of the World Bank Group)
ICC	International Chamber of Commerce
ICT	Information and Communication Technology
IEA	International Energy Agency
ILO	International Labour Organization

IMF	International Monetary Fund
Incoterms	International Commercial Terms
IOM	International Organization for Migration
IOSC	International Organization of Securities Commissions
LDC	Least Developed Country
M&A	Mergers & Acquisitions
MERCOSUR	Mercado Común del Sur
MNE	Multinational Enterprise
MTS	Multilateral Trading System
n.e.s.	not elsewhere specified
NIS	National Innovation System
OECD	Organization for Economic Co-operation and Development
OPEC	Organization of Petroleum Exporting Countries
OTC	Over-The-Counter (Broker-Dealer Network)
PPP	Parity of Purchasing Power
R&D	Research and Development
RTA	Regional Trade Agreement
SMEs	Small and Medium-Sized Enterprises
SNA	System of National Accounts
TNB	Transnational Bank
UNCITRAL	UN Convention of International Trade Law
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
USMCA	United States–Mexico–Canada Agreement
WEF	World Economic Forum
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

World and Global Economy

World and Global Economy, Global Business Environment, and International Business: Nature, Formation, and Structure



Alexander Bulatov 

Abstract This chapter provides some notions that will be often used in the subsequent chapters, distinguishes major actors of the global economy, analyzes the historical evolution of the global economy and international business, and gives a brief typology of the world economy and international business. In the end, some clues to the statistics of the world economy and global business environment are provided.

1 Introduction

When we study the world, we are typologizing it. This chapter provides some notions that will be often used throughout the book, distinguishes major actors of the global economy, analyzes the historical evolution of the global economy and international business, and gives a brief typology of the world economy and international business. In the end, some clues to the statistics of the world economy and global business environment are provided.

2 Notions of the World Economy and Global Economy, International Business, and Global Business Environment

2.1 *The Notion of the World Economy and Global Economy*

The world economy, in the shortest definition, means a set of all the national economies of the world. If the world economy is measured on the basis of annual volumes of all national GDP, then in 2021 it was close to \$90 trillion (about \$140 trillion at purchasing power parity—see below).

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Within the world economy, the global economy is distinguished. This combines those parts of national economies that deliver to the outside world and receive resources and products (goods and services) from it, i.e., participate in the global movement of products and resources. Economics terms similar resources and products as traded in contrast to non-traded, which do not intersect national borders. It is clear that international business is primarily connected with the global economy. If the global economy is quantified, then its dimensions will be several times less than the world economy. This is because most of the leading world economies are focused on demand and proposal of products at their internal market rather than an external one. Thus, in the United States, imports provide 14% of the consumption of goods and services, about 12% of the products made in the country are exported, capital inflow provides 6% of investment, and foreign labor migrants occupy about 17% of jobs.

2.2 Major Actors of the World Economy

The main participants (actors) of the world economy are national economies. The greater their size, the higher their weight in the global GDP—in 2021, 18.6% of global GDP accounted for China, 15.7% for the United States, 15% for the EU (Germany 3.3%, France 2.3%, and Italy 1.9%), India 7%, Japan 3.8%, Russia 3.1%, and Brazil and Indonesia about 2.5% per each country. The term “national economy” implies the economies of individual countries. In turn, the term “country” in the vocabulary of international organizations means both the state and part of its territory with a pronounced autonomous economic and political regime, such as Hong Kong.

National economies are also the main participants of the global economy. However, the degree of their participation in the global economy is determined not only by the size of their GDP, but also:

- the competitiveness of their products (for competitive products, demand in the world market is higher);
- the trade and non-trade barriers on the way of their imports and exports (an example may be modern Iran and Russia, the international business of which is hindered by the formal and informal embargo on the part of some countries);
- the transport proximity/remoteness of a country (this especially affects countries that do not have access to the sea with its cheapest cargo transportation); and
- the level of openness of a national economy.

An open economy is a national economy where non-residents (i.e., foreign firms and individuals of another country) have access to most of its markets and industries. The opposite of the open economy is a closed economy, which is usually closed because the country actively pursues a policy of protecting the national economy from foreign competition (protectionism policy) or isolated by sanctions. The most open economies are small ones, which, due to the limitation of their economic resources and the small scale of their domestic markets, are forced (more actively than average

and large economies) to use the movement of products and resources between countries. However, the global economy is formed primarily by large countries by virtue of their weight (e.g., the top 20 countries by the size of GDP produce almost 90% of the world GDP). Thus, the top exporters are China and the United States (although they export only 12 and 15% of their production, respectively), and not Singapore and Luxembourg, exporting an overwhelming part of their production. It is not rare that the traits of small economies are often transferred into large countries, as a result of which an excessive image of economic globalization is created.

With more and more splicing, the economies of many neighboring countries form integration groups, usually in the form of integration organizations (see chapter “[World Economy Major Trends: International Economic Integration](#)”). Integration groups have become an important part of economic life in many ways, because in the most advanced of them there are elements of the supranational. Therefore, it is advisable to consider integration groups as one of the major actors of the world economy. For instance, it is impossible to analyze any European economy putting aside the European Union.

In recent decades, the importance of international economic organizations has sharply increased. The main reason for this is the need to regulate the global economy because of its rapid expansion, a task that individual countries and even integration groups are unable to fulfill. International economic organizations are just in existence to regulate the global economy, especially to solve worldwide (i.e., global) problems.

Finally, multinational enterprises (MNEs multinational corporations [MNCs], transnational corporations, [TNCs]) are other major actors of the world economy. These are corporations that consist of a parent company and affiliated firms abroad. As their foreign affiliate networks (global value chains) expand, the interests of MNEs coincide less and less with the interests of national economies, including countries of their origin. This is the important reason for the selection of MNEs in a set of major actors of the world, especially the global economy.

2.3 The Notion of a Global Business Environment

From the point of view of national businesses, those aspects in other economies that can influence these businesses are termed the “global business environment”. The global business environment can be also defined as the foreign countries’ environment which influences the business environment and decision making of economic agents of other countries. However, these economic agents are interested in different aspects of foreign countries’ environment, and therefore the traditional way to satisfy all of them together is to give the picture of a whole foreign economy. With this purpose, Part II of the book contains chapters describing regional and large national economies of the world.

2.4 The Notion of International Business

The business related to movement of products and resources among countries can be called international business, or international business relations (the latter term better reflects an essence of this movement, but traditionally the former term is used more often). The basis for international business is a global economy. This business can be classified by forms from the point of view of the global movement of products and resources.

Historically, the international (foreign, external) trade in goods and services was distinguished first as a form of international business. It still dominates international business of most countries around the world, albeit not in all of them.

The movement of economic resources that started later than the movement of goods has led to the emergence of such forms as an international knowledge transfer, international labor migration, and global capital flows. As for the rest of the economic resources (in addition to labor, knowledge, and capital), the natural resources are immovable and participate in international business indirectly, through international trade. Entrepreneurship (an entrepreneurial resource) moves together with labor, knowledge, and capital, and therefore does not figure as an independent form of international business.

Finally, a separate form is sometimes distinguished—international currency exchange (on currency markets). Although this is derived from international trade and the movement of economic resources (especially capital), it has acquired great economic independence.

The above typology of international business (international trade, international knowledge transfer, international labor migration, global capital flows, international currency exchange) is not the only one. Nevertheless, this book is built on the aforementioned five forms of international business, based on the fact that this typology seems to be the most associated with economics.

2.5 Non-economic Aspects of the Global Economy and International Business

The economy is not the only sphere of our lives; for us, the political, social, and cultural spheres are also very important. These have a noticeable impact on the national, regional, and world economy, as well as international business, bringing their non-economic aspects.

Probably the greatest impact on the world economy and international business is provided by politics. Usually, hostile or cool political relations do not allow economic relations to be freely developed even between neighboring states (for example, between India and Pakistan). The politicization of international business is especially noticeable in the international arms trade as well as international knowledge transfer (primarily high-tech). Economists are inclined to believe that the benefit

from foreign economic relations between countries suppresses their political enmity; this is correct in principle, but it does not always happen—for example, before the WWI and WWII, the main trading partner of many European countries was Germany.

The social sphere, with its frequently arising difficulties and shocks, is also constantly affecting the world economy and international business. Thus, with all the importance of the remaining reasons, the main motives of the movement of millions of people between countries are social—specifically low incomes and high unemployment. This is what annually pushes millions of people from other countries to the European Union, United Kingdom, United States, or Arab monarchies of the Gulf, as these are areas where wages are much higher, and the demand for labor is noticeably larger than in their own countries.

The cultural sphere both brings national economies closer and separates them. Thus, the mutual cultural space is a powerful factor in North American economic integration. As a result, relations in the United States between local residents and migrants from neighboring countries are less stressful than in Europe, due to the greater affinity of their cultures, although these relations are not cloudless. On the other hand, national culture—for example, business culture (business ethics)—often interferes with the friendly perception of this business abroad. Thus, the Bribe Payers Index (published by Transparency International up to 2011), calculated by the top exporter countries according to the probability of their companies giving bribes when conducting business abroad, indicated that Chinese and Russian companies are most likely to give such bribes, which often prevents Chinese and Russian business engaging in countries with a low price of bribery.

The cultural sphere often includes the psychological. Psychology rejects the idea that behavior is absolutely rational, as Keynes indicated. However, in different countries, this occurs in different ways, which largely determines the behavior of their economic agents. Thus, according to the European Social Survey, for a resident of Russia, security and self-affirmation is more important than for Europeans, but other values such as independence, novelty and risk, and caring for people and nature are less important.

3 Formation and Evolution of the Global Economy and International Business

3.1 Formation of the Global Economy

The core of the global economy originated in ancient times in the region of the Mediterranean along with the surrounding countries of the Near and Middle East.

It all started with the international trade in goods. Five thousand years ago, residents of Egypt traded with neighboring tribes—buying wood, metals, or livestock in exchange for the products of Egyptian crafts and land. Later, trade of services began to connect to international trade in goods. The Phoenician and Greek merchants not

only traded around the Mediterranean with goods produced in their own countries or purchased in other countries, but also provided services, carrying other people's cargoes and foreign passengers.

Gradually, international trade covered other regions of the world—at first, South Asia, then Southeast and East Asia, Russia, America, and Australia and Oceania; later, hard-to-reach areas of Sub-Saharan Africa. As a result, by the end of the nineteenth century, the global market for goods and services (i.e., the combination of markets of traded goods) had appeared.

At the same time, the international movement of economic resources has grown. Western European capital has become a noticeable element of investment in America, with immigrants from Europe having economically domesticated huge expanses of North America, South Africa, and Australia. Western entrepreneurs have transferred their achievements in western science (electricity, internal combustion engine, mechanical vehicles, pharmacy) to all corners of the world. Then, the knowledge, capital, and especially workforce began to be exported by less developed countries; as a result, the process of moving the economic resources between countries became mutual, although not symmetric. Thus, all national economies became participants not only in the global market for goods and services but also in the international movement of economic resources. Under these conditions at the turn of the nineteenth to twentieth centuries, it became possible to refer to the global economy.

3.2 Stages of Globalization

The global economy has passed a number of stages. The time between the end of the nineteenth century and the beginning of the First World War became the first stage of economic globalization (in economic terminology, as in this book, this term is often used in an abridged version, without adjective)—this refers to the process of rapprochement (splicing, integration) of national economies based on economic resources and the exchange of products. Over these three decades, in many national economies, the proportion of exported and imported products has reached such a level that was overtaken only half a century later. Large scales of exports of economic resources from Western European countries (on the eve of the war, residents of the United Kingdom invested capital abroad more than in their national economy) into new fast-growing market economies (which, at that time, were the United States, Argentina, British dominions, and Russia) were only exceeded after many decades. On the eve of the First World War, in the United States, more than half of the industrial workers were immigrants, and capital flow from abroad provided more than half of the investment in Russian industry. Although there were no integration groups then (they were partly replaced by empires), international economic organizations were few and weak, and MNEs were also limited in number. However, in general, this stage of globalization can be considered the first wave of globalization.

The period from the beginning of the First World War until the end of the Second World War was the stage of folding globalization during wars, revolutions, and the

economic crisis of the 1930s. As a result, although the merchandise export of the United States during this period statistically increased from \$2.6 billion to only \$3.1 billion, actually it dropped sharply, because during this time \$ depreciated 2.2 times.

The time after the end of the Second World War until the end of the 1970s was the stage of restoring the global economy. World trade had already reached the 1913 level in the early 1950s, although the movement of products and economic resources had reached the same scale only by the end of the period. At this stage, important prerequisites were laid for the new wave of globalization: integration groups were created, the number of international economic organizations grew, and the number of MNEs increased rapidly.

The period of the late 1970s until the global economic crisis of 2008–2009 became the second wave of globalization. Almost all the records of the first wave were exceeded. The ratio of exported and imported products to goods and services produced domestically radically rose, integration groups became a powerful momentum in many regions, the importance of international economic organizations increased (especially for less developed countries), and MNEs began to produce 1/4–1/3 of the world GDP (including about 1/10 in their foreign affiliates).

However, the current stage of globalization, which began after the 2008–2009 crisis, is changing its character. In major economies, there is an increase in attention paid to the production of goods and services on the domestic market, being more reliable as compared to foreign production. Freedom of capital movement in the world is increasingly considered critically, especially the activities of international “transit hubs” of capital–offshore jurisdictions. Restrictions on the methods of international labor migration are growing. It is possible to assume (albeit cautiously) that there is a decrease in the pace of globalization. Perhaps globalization goes cyclically and its second wave ends, shifting not to the opposite movement (as in the period between the two world wars), but to a more moderate pace. Another point of view is that globalization goes to a new stage of development and should be measured by other indicators (see chapter “[World Economy Major Trends: New Normal, the Forth Industrial Revolution, Globalization, Sustainable Development](#)”).

3.3 Non-economic Aspects of Globalization

Globalization occurs not only in economic spheres but also in non-economic spheres. In many countries, foreign policy has long been more global than regional (such as in the United Kingdom since the eighteenth century), and internal policy is increasingly formed by supranational forces (such as in countries of Europe under the influence of EU governing bodies). In the social sphere, large and successful reforms in one state then cover other countries, mainly neighboring ones (a Swedish social model served as an example for Northern Europe). Large countries have already influenced the rest of the world with their culture (e.g., American cinema, music, literature), although in the field of national psychology, globalization goes slower (as in cases of many immigrants from the Eastern countries in the West).

Economists usually emphasize that this is the result of the impact of economic globalization on political, social, and cultural spheres through communication and transport, world trade and knowledge transfer, international capital flow, and migration. However, there is also the opposite impact of political, social, and cultural globalization on economic matters. Thus, the globalization of politics leads to greater and greater use of the economy in global political purposes. These are economic sanctions (trade, financial, technological, etc.) by some states against other countries and their counter-sanctions in response, such as the trade war between China and the United States. This is the use of national MNEs for the sake of foreign policy goals. This is also the use of national impact in international economic organizations to influence their ideology and practice, such as, for example, in the case of the American influence on the activities of the International Monetary Fund and the World Bank.

The globalization of the social sphere, especially increasing the knowledge of the social sphere in other countries, leads to the desire of citizens to apply foreign social models in their own countries. The intention of Ukraine to modify the social sphere on the European example serves as an example. Such social reforms in Ukraine have a great influence on the economic sphere of the country (through the budget, investment, and labor market).

The globalization of the cultural sphere has made a number of professions truly global (outstanding artists, musicians, sportsmen), just as an increasing part of products in this sphere are becoming global. Still, the main impact on the globalization of the economy through the cultural sphere is primarily through the evolution of the national business culture under the influence of foreign samples.

4 Typology of the World Economy and International Business

4.1 Stages and Levels of Economic Development

Economics explores the stages of economic development. Regarding more modern literature, we note, first of all, works such as the “The Stages of Economic Growth: A Non-Communist Manifesto” (1960) by Walt Rostow, “The Coming Post-Industrial Society: A Venture of Social Forecasting” (1973) by Daniel Bell, and “The Competitive Advantage of Nations” (1990) by Michael Porter. In his book, Rostow has developed the concept of stages (more precisely, steps) of the transition from the traditional (most agrarian) society to the industrial society and its subsequent evolution. Bell formulated the main features of the market economy, which came from the dominance of industry to the dominance of modern services (post-industrial stages). Porter formulated four stages of economic development (considering them from the point of view of competitiveness of national economies), based on the factors of production (usually land and labor), investment (in fact it is a stage of active

industrialization), innovations, and wealth (in actuality based on powerful financial capital). In economic literature, the synthesis of these works and development stages is usually divided into traditional (pre-industrial), industrial, and post-industrial. For the post-industrial stage, the dominance of the service sector (tertiary sector) is typical; primarily these are services related to knowledge and finance.

4.2 Post-industrial Stage

In a traditional society, people (labor) and nature (land) were the main economic resources, and the economic activity was built around the ownership and use of land and labor. In an industrial society, the main resource was real capital, and therefore economic relations are built on the basis of the ownership and use of this capital. In a post-industrial society, knowledge and financial capital are basic resources.

Knowledge is generated by science and skill, distributed through information and communications technology (ICT), and is fixed by education. Labor resource and knowledge (held by labor resource) form human capital (this term in its wide meaning also includes health and living conditions).

As for financial capital, the theoreticians of the post-industrial society did not assume that the growth of the financial sphere in the post-industrialized world would be faster than at the industrial stage. However, this capital has seen very fast growth in recent decades. It can be assumed that this occurs because the supply of capital as an economic resource is growing, but the demand for real capital in post-industrializing (and especially post-industrialized) countries grows slowly (active industrialization in these countries has passed). As a result, an increasing part of new capital does not transform to real capital, i.e., financialization of the economy takes place (see chapter “[Resources of World Economy: Financial Capital](#)”).

The level of post-industrialization can be measured by a set of indicators, including GDP structure by sectors, the scope of R&D, access of the population to information, and the magnitude of financial capital (Table 1).

The impact of post-industrialization on a national economy is multifaceted and generally positive. People are less and less reliant on physically heavy and/or monotonous labor, more and more on creative labor; at the same time, their incomes are higher. Nevertheless, as with every major process, post-industrialization gives rise to problems (particularly in developed countries)—de-industrialization, frequently low return on R&D, insufficient protection of information, inadequate quality of education, and the surplus of financial capital.

De-industrialization has many key factors. The transition to the post-industrial stage is accompanied by post-industrialization of the secondary sector (industry and construction); knowledge intensity of many industries increases, their ICT provision grows, and level of labor productivity upsurges. At the same time, post-industrialization of developed countries leads to a drop in production of many technologically simple goods (metals, basic chemistry, simple equipment, simple consumer

Table 1 Some indicators of post-industrialization in 2018–2019 or previous years

Country	Indicator				
	Shares of agriculture, industry, services in GDP, %	R&D expenditure, % of GDP	Internet audience, per 100 persons of adult population	Education of adults, years on average	Financial capital (bonds, shares, and bank assets), % of GDP
USA	1:22:77	2.8	87	13.4	434
Germany	1:37:62	3.0	90	14.1	393
Japan	1:30:69	3.2	85	12.8	577
China	7:39:54	2.1	54	7.9	292
India	16:34:50	0.6	35	6.5	262 ^a
Russia	4:36:60	1.1	81	12.0	122 ^b
Brazil	4:33:63	1.3	58	7.8	163 ^c
South Africa	2:37:61	0.8	56	10.2	93 ^d

Sources UNDP (2021), WEF (2019), and World Bank (2019)

^aAll developing countries of Asia, besides the Near and Middle East

^bPost-Soviet and East European countries—non-members of Euro Area

^cAll countries of Latin America

^dAll countries of Sub-Saharan Africa

products) and the specialization of developed countries on more sophisticated products at the expense of imports of simple products from developing countries that are in the process of active industrialization (India) or are on the final stage of it (China). However, if the production of simple goods in the industry of developed countries is not accompanied by an adequate increase of more sophisticated products, then de-industrialization occurs. For instance, in the US economy at the end of the twentieth and the beginning of the twenty-first century, there was the erasure of entire industries from the national industrial complex due to the substitution of their goods by imported goods, including those produced by US MNE foreign affiliates. During this process, however, the rate of substitution of simple goods was not accompanied by an adequate extension of the production of high-tech products. This process was more destructive in many post-communist countries, where the dismantling of some simple industries was accompanied by curbing even high-tech industries. The most probable solution to this problem is re-industrialization, i.e., the more active development of industry in countries that have passed the stage of industrialization. At the same time, the re-industrialization of these countries means not just the restoration of the production of simple industrial goods, but the transformation of these industries into high-tech and high-productive. An example would be German mechanical engineering, which was not curtailed, but became more complicated.

The increase in R&D spending positively affects economic growth—inventions (more precisely, innovations, i.e., new products and technologies implemented in economic life) support it by stimulating the offer of new products. Therefore, as the country's level of post-industrialization increases, the ratio of R&D expenses to GDP

usually also increases. However, the problem is the pace of R&D expenses. On the one hand, they must be accompanied by a return in the form of a proposal of new knowledge; on the other, this proposal must comply with the demand for knowledge in the country. An example of the first aspect of the problem would be Japan, in which the substantial increase of R&D expenses over the past two decades did not provide the country with a pace that is good enough for a developed country. Presumably, this happened because the increase in R&D expenses did not lead to an increase in innovation—being among the top five countries by the ratio of R&D expenses to GDP, the country takes only the 13th rank in the Global Innovation Index 2021.

Information and communications technology simplify and reduce access to information, thus diminishing transaction costs of economic agents. However, in many cases, the availability of information leads to less protection. This problem is not new, but because of the abundance and accessibility of information in post-industrial society, it has gained more scope. First of all, it is a violation of intellectual property rights. New industrial countries actively copy the patents of developed countries, reproduce works of mass culture without their permission, and students in many countries actively resort to plagiarism. On the one hand, this reduces the transaction costs of information users; on the other, it reduces the incomes of developers of new knowledge, especially in developed countries, from where the main flow of information goes to the world.

Education is becoming more and more accessible, which is an indisputable blessing. Even in the most backward economies, the majority of the population can read and write—in the least developed countries, about 60% of the adult population is literate, and only in some African countries does this figure fall to below 30–40%. However, society is often not satisfied with the quality of education—even in the leading developed countries, the share of those satisfied with the state of education varies from 55% (Japan) to 75% (Canada). Admittedly, it can be assumed that the low indicator of satisfaction in Japan is caused not by the deterioration of education quality (Japanese schoolchildren of the final grade take 6th place in international testing by PISA in mathematics and science), but by the increased requirements of Japanese society.

Financialization gives developed economies an abundance of free capital, alongside many possibilities to use it not only for economic but also for social needs (social transfers, socially oriented industries), and allows an active capital outflow. At the same time, abundant financial capital acquires increasing independence, breaking away from real capital (so-called decoupling). The deep cause of the increased financialization is the transition of developed countries to the post-industrial stage with its lower demand for investment in the real sector, and as a result, the growing threat of capital overaccumulation in the financial sector. Other reasons are the liberalization of finance (which is most pronounced in securitization (that is, the expansion of types and scope of securities due to more liberal regulations) and the globalization of financial capital (its increased free movement around the world due to the globalization of most economies) (see chapter “[Global Financial Market](#)”). Financialization leads to the fact that global economic crises start more often as financial crises, that

capital markets are very subject to speculation, and that the wages of financial sector workers are superior to wages in the real sector.

4.3 Level of Economic Development

The transition of a country from one stage to another depends on how its level of economic development changes. In turn, this is determined by a set of criteria. This book is focused on the following—GDP PPP per capita, the sectoral structure of GDP, level and quality of life. On this basis, economies of the world are divided into developed and less developed (developing economies, emerging market economies). It is important to recall that the GDP is the main indicator of the System of National Accounts (SNA), which characterizes the volume of value-added in a country (derived from it and close to it is the gross national income—GNI). For international comparisons of GDP in different countries, it is necessary to translate it from national currencies into a single currency (usually this is the most common currency in the world—US\$). Moreover, it is advisable to do it not at the exchange rate, but by the parity of purchasing power (PPP), i.e., by the exchange rate taking into account the prices of a country's domestic market.

The exchange rate of a national currency is established on the basis of supply and demand on it from the sellers and buyers of traded goods only; it does not take into account the non-tradable goods of the country. Within a framework of the International Comparison Program (realized by the World Bank), the standard set (basket) of about 3000 consumer and investment products is taken, and then it is calculated how much this set is in national currency and how much it costs in US dollars; it is on this basis that an exchange rate (i.e., by PPP) between the national currency and the US dollar is determined (officially it is named “PPP conversion factor”).

In 2020, an annual average official exchange rate of the local currency unit of China was 6.90 per \$, and of South Africa it was 16.46 per \$, while their PPP exchange rates were 4.19 and 6.93, respectively; in other words, their PPP exchange rates were higher than their official exchange rates. Such a gap between PPP and official rates is typical for the most developing countries, being the biggest consequence of the fact that more productive work is paid more, and therefore in countries with high labor productivity (i.e., developed countries), wages are high and, as a result, prices for labor-intensive products in these countries are often higher than in less developed countries. At the same time, residents of the developed countries can buy more goods and services on their high wages than residents of less developed countries with their cheaper goods and services.

GDP PPP per capita in developed countries, calculated by the World Bank for 2020, averages \$44,650, although the variety is great: in Greece it is \$28,464, in the United States—\$63,544, and in Luxembourg—\$118,360. At the same time, in some developing countries, this indicator is also very high: in Brunei it is \$65,662, in the

UAE—69,958, and in Qatar—\$89,449. This fact warns us that the level of economic development of the country cannot be measured alone by GDP or CNI per capita.

The sectoral structure of GDP in developed countries is characterized by the predominance of the tertiary sector (services), a large share of the secondary sector (industry and construction), and the low weight of the primary sector (agriculture and forestry, fishing and hunting). Although in the structure of the GDP of some developing countries, the share of the secondary and tertiary sector is sometimes large, usually caused by the high weight of traditional industries in these sectors—mining, trade, sometimes tourism—while in the secondary sector of developed economies, manufacturing prevails (especially mechanical engineering), and modern services (science, education, health, transport and communications, business and financial services, housing and communal services) prevail in the tertiary sector. For example, in Brunei, the UAE, and Qatar, where the secondary sector dominates (48–63% of GDP), mining accounts for its main part (from 38% in the GDP of the UAE to 52–53% in the GDP of Qatar). To identify these details, it is necessary to analyze the structure of GDP by types of economic activity (national SNA can provide this); for a less detailed analysis, it is often enough to have data on the primary sector share in GDP (which, in developed countries, usually does not exceed 2%). After all, the farther the country has advanced in the stages of economic development, the higher the labor productivity in the oldest sector (the primary sector), and as a result, this sector (with its small number of workers) usually provides the needs of a country and even other countries; for the United States, the primary sector accounts for only 1% of the US GDP.

The level and quality of life in a country are determined by numerous indicators. An attempt to summarize the most important of them is the Human Development Index (HDI), which is the mean average amount of three sub-indexes—expected years of life, years of education, and GDP PPP per capita. An ideal is considered when the index reaches 1. In 2019, this index was 0.957 in Norway, 0.955 in Ireland and Switzerland, 0.926 in the United States, 0.824 in Russia, 0.765 in Brazil, 0.765 in China, 0.709 in South Africa, 0.645 in India, and 0.737 in the whole world.

4.4 Economic Typology of the World

This typology is based on the level of development of national economies. Note again that this book divides world economies (countries) into two groups—developed and less developed. In the past, the second group of countries and their economies was directly called “backward”. However, in the current, more liberal world, this is considered incorrect. As a result, the term “backward country (economy)” was replaced at first by the term “economically backward country (economy)”, and then by the term “developing countries (economies)”. At the same time, after the transition of post-communist countries to a market economy, they began to be called “transition economies”. Now, combining all these less developed economies, the terms “emerging market economies”, “developing and transition economies”, and

related options (e.g., “advanced economies”, “emerging market and developing economies”) are used. In this book, observing political accuracy but not refusing to use common economic sense, they are often referred to “less developed countries (economies)”, and those that have developed economies are called “developed countries (economies)”.

Among the developed and less developed economies, various groups and subgroups are distinguished; for instance, a Group of Twenty (G20) of the major economies of the world, which includes seven leading developed economies and the EU chairman country plus Australia and South Korea. Out of less developed countries, G20 covers BRICS countries (see below), plus Mexico, Argentina, Turkey, Saudi Arabia, and Indonesia. All these countries together account for 90% of global GDP, 80% of world trade, and two-thirds of the world’s population.

Among the developed countries are often distinguished:

- Group of Seven (G7), including major developed economies—the United States, Japan, Germany, France, United Kingdom, Italy, and Canada;

Among less developed countries are distinguished:

- five major economies in their continents under abbreviation BRICS (Brazil, Russia, India, China, and South Africa);
- new industrial countries, i.e., those transiting to industrial or even partly post-industrial stages of development, headed by China, India, Brazil, Mexico, Indonesia, Turkey, and Iran;
- transition economies;
- countries-exporters of fuel and primary products, in which fuel or other types of raw materials make up more than half of their exports;
- net debtor countries, to which the IMF ranks economies with a negative balance of an international investment position (see chapter “[Balance of Payments](#)”); and
- the least developed countries (46) in which GDP per capita constitutes less than \$1025, with a very low score of the HDI, and where economic growth is very unstable.

Many countries fall simultaneously in more than one group, such as, for example, South Africa: it is the member country of BRICS, and belongs to the exporters of primary products.

The typology of countries in terms of economic development differs in various international organizations. Below is the typology of the International Monetary Fund with the addition of its statistics (Table 2).

4.5 Scale and Structure of International Business Forms

International trade prevails in the international business relations of most countries. In 2021, world exports of goods and services amounted to \$28.2 trillion, of which goods represented \$22.3 trillion, and services were \$5.9 trillion. The share of services

Table 2 Shares of various countries and country groups in 2021 in world GDP PPP, exports and population, %

Indicator		GDP		Exports of Goods and Services		Population	
	Number of Economies	Advanced Economies	World	Advanced Economies	World	Advanced Economies	World
Advanced economies	40	100.0	42.1	100.0	61.4	100.0	14.0
USA		37.4	15.7	14.9	9.1	30.8	4.3
Euro Area	19	28.5	12.0	42.4	28.0	31.6	4.4
Germany		7.9	3.3	11.8	7.2	7.7	1.1
France		5.5	2.3	5.4	3.3	6.1	0.9
Italy		4.4	1.9	4.0	2.5	5.5	0.8
Japan		9.1	3.8	5.4	3.3	11.6	1.6
United Kingdom		5.5	2.3	5.1	3.1	6.3	0.9
Canada		3.3	1.4	3.4	2.2	3.5	0.5
Other advanced economies	17	16.2	6.8	28.0	17.7	16.1	2.3
Memorandum							
Major advanced economies	7	73.2	30.8	50.1	30.8	71.6	10.0
		Emerging Market and Developing Economies	World	Emerging Market and Developing Economies	World	Emerging Market and Developing Economies	World
Emerging market and developing economies	156	100.0	57.9	100.0	38.6	100.0	86.0
Emerging and developing Asia	30	56.0	32.4	52.3	20.2	55.9	48.1
China		32.1	18.6	33.2	12.8	21.4	18.4
India		12.1	7.0	6.3	2.4	21.0	18.1
Emerging and developing Europe	16	13.4	7.8	16.6	6.4	5.7	4.9
Russia		5.3	3.1	5.1	2.0	2.2	1.9

(continued)

Table 2 (continued)

Indicator		GDP		Exports of Goods and Services		Population	
Latin America and the Caribbean	33	12.6	7.3	12.8	4.9	9.7	8.3
Brazil		4.1	2.4	3.0	1.1	3.2	2.8
Mexico		3.1	1.8	4.9	1.9	1.9	1.7
Middle East and Central Asia	32	12.6	7.2	14.2	5.5	12.4	10.7
Saudi Arabia		2.1	1.2	2.7	1.0	0.5	0.5
Sub-Saharan Africa	45	5.4	3.1	4.1	1.6	16.2	14.0
Nigeria		1.4	0.8	0.5	0.2	3.2	2.7
South Africa		1.0	0.6	1.2	0.5	0.9	0.8
Analytical groups							
By Source of Export Earnings							
Fuel	26	10.0	5.8	13.7	5.3	9.5	8.2
Nonfuel	128	89.9	52.1	86.2	33.3	90.3	77.7
Of Which, Primary Products	37	5.6	3.3	5.5	2.1	9.4	8.0
By External Financing Source							
Net Debtor Economies	121	49.7	28.8	42.7	16.5	67.9	58.4

Source IMF (2022). World Economic Outlook. April

in global trade is gradually rising, which reflects the gradual increase of their importance in all national economies. However, this shift occurs slowly and is unstable because many mass services are consumed only on the spot (for example, housing and communal services), i.e., they are non-tradable.

International transfer of knowledge may have become the most significant form of international business. However, its measurement is difficult because part of the knowledge is transferred for free (therefore, the name of this form of international business is twofold—not only trade, but also a free-of-charge exchange [for example, via the Internet]) or is transmitted together with exported goods, entering their price (for example, services for the installation and maintenance of equipment). As a result, it is possible to statistically track only some elements in trade in knowledge,

for example, trade by transport services (their sales amounted to \$1150 billion in 2021).

International capital flows (movements) in years of global economic upturn compete by volume with international trade (in 2007, capital outflow amounted to \$11.1 trillion against \$17.1 trillion of exports of goods and services), but during the recessions or the sluggish conjuncture, it is sharply reducing in contrast to more resistant international trade (about \$2.7 trillion of capital flow against \$22.7 trillion of international trade in 2020).

International labor migration amounts to many million people in a year. Some of these people move for constant work and residence, others for temporary work. Statistics of international migration in many countries is incomplete, especially temporary migration statistics. In addition, for comparison of this form of international business with other forms, it is necessary to translate it in terms of money. Therefore, to assess the scale of international labor migration, it is possible to measure it by monetary transactions of individuals abroad, although this is a simplification, because similar transactions are not only carried out by migrants to their homeland. Nevertheless, this statistic is the following: in 2020, such transactions reached \$702 billion in the world and amounted to about 3% of Malaysian GDP, 4% for Switzerland, 5% for Saudi Arabia, 7% for Qatar, 12% for the UAE, 19% for Luxemburg.

5 Analytics and Statistics of the World Economy and Global Business Environment

Studying and researching the world economy and global business environment, economists are primarily interested in the publications and databases of international economic organizations, as well as major economies of the world.

5.1 Analytical Publications and Databases of International Economic Organizations

The UN releases the Statistical Yearbook and Monthly Bulletin of Statistics, which also contains economic data. In the database *National Accounts Statistics—Analysis of Main Aggregates*, one can find principal economic data of the most countries. However, the bulk of economic statistics and analytics is published by international economic organizations (see chapter “[Global Economic Governance and International Economic Organizations](#)”).

The World Bank, highlighting the economic situation globally, in regions, and in countries, publishes the annual analytical *World Development Report* with statistical annexes. For continuous monitoring of the national and world economy, it has the *World Bank Open Data* database. The economic forecast of the world economy,

including regions and countries, is contained in the *Global Economic Prospects*, published twice a year. A large research work of the World Bank employees is reflected in *Policy Research Working Papers* and *World Bank Research Observer*.

The International Monetary Fund in its publications and databases is focused on the financial aspects of the world economy and global business environment. Twice a year, it issues an analytical report on the state of global finance called the *Global Financial Stability Report*, systematizes and predicts financial indicators around the world and countries in the *World Economic Outlook*, and releases fiscal statistics in the *Fiscal Monitor*. For those who are interested in a balance of payments, the *Balance of Payments Statistics and External Sector Report* is published. A lot of this data is also available in the *IMF Data* database. Every month, the *International Financial Statistics* on all member countries of the IMF is issued, and once a year in the *International Financial Statistics Yearbook*. Papers of the IMF staff are published in *IMF Working Papers* and *IMF Staff Discussion Papers*, and country reports on IMF member countries are in *IMF Country Reports*.

Various information on social issues is primarily contained in the publications of the International Labor Organization (ILO) and the UN Development Programme (UNDP). The latter publishes the *Human Development Report*, in which the Human Development Index is provided. Both of these organizations publish statistics on international migration, but extensive data about it is also published by the OECD and, of course, by the International Organization for Migration (IOM) in its *World Migration Report*.

As to the information on industries, we mark publications of UNIDO, FAO, and IEA. The United Nations Industrial Development Organization (UNIDO) issues analytics and statistics with a focus on the mining and manufacturing industries: in particular, the *Industrial Development Report*, as well as the *International Yearbook of Industrial Statistics*. The Food and Agriculture Organization of the United Nations (FAO) issues the *FAO Statistical Yearbook*, and the International Energy Agency (IEA) in its *World Energy Outlook* gives forecasts on energy worldwide.

A very large volume of economic statistics and analysts is contained in the publications of the Organization of Economic Co-operation and Development (OECD), albeit with an emphasis on member countries of this organization, the overwhelming majority of which are developed economies. First of all, this is a voluminous *OECD Economic Outlook*, *OECD Factbook*, and a monthly *Main Economic Indicators*, as well as the *OECD.Stat* database and the *National Accounts* of OECD Countries.

Finally, some MNEs systematically publish reports on some industries, areas, and aspects of the global economy and international business. Examples can be British Petroleum with its annual *BP Statistical Review of World Energy* about stocks, production, and trade in coal, oil, and gas, as well as PricewaterhouseCoopers, issuing a report called *Paying Taxes* on the tax burden and its structure for business in all countries.

5.2 Regional and National Publications and Resources

UN regional commissions as well as integration groups have their own databases and issue many publications on the economy of different regions around the world. Examples may be the Economic Commission for Africa and the Economic Commission for Latin America and the Caribbean. Other examples are the European Union and its Eurostat with a voluminous database and numerous publications, or the Eurasian Economic Union, for which the Eurasian Development Bank systematically publishes analytics and statistics.

National statistical agencies and services usually produce statistical yearbooks, giving a lot of information mainly on economic and social statistics. For example, the National Bureau of Statistics of China (NBS) issues the *China Statistical Yearbook* and gives access to its database on its website (<https://data.stats.gov.cn/english/index.htm>). India's Ministry of Statistics and Programme Implementation publishes *Statistical Yearbook India* and has its website (<https://www.mospi.gov.in/reports-publications>). Various government bodies of almost all countries also issue valuable detailed information; for instance, the Ministry of Finance of the Russian Federation lays out extensive information about government finances on its website (www.minfin.ru), and the Bank of Russia on its website (www.cbr.ru).

6 Conclusions

1. The world economy is a set of all national economies of the world. Inside the world economy, a global economy is often distinguished, which is an aggregate of those parts of national economies that supply products and resources to the outside world and/or get these from around the world. The global economy is a base for an international business and global business environment. The latter can be defined as the environment in foreign countries, with factors exogenous to the home environment of economic agents in other countries, influencing their decision making.
2. The main participants (subjects) of the global economy are national economies, as well as integration groups, international economic organizations, and multinational enterprises.
3. The movement of products and resources between countries is called international business (international economic relations). Forms of international business are international (foreign, external) trade in goods and services, international labor migration, international knowledge transfer, international capital flows (movement), and international currency exchange.
4. The global economy has passed several stages. The time between the end of the nineteenth century and World War I was the time of the first wave of globalization. The period from the late 1970s–early 1980s to the 2008–2009 global economic crisis became the second wave of globalization, as a result of which almost all

records of the first wave were exceeded. The current stage of globalization, which began after the aforementioned crisis, changes globalization patterns and, as a result, the pace of globalization slows down.

5. As a country's level of economic development increases, it transits from one stage of development to another. The level of development is determined by a set of criteria. This book is focused on the following—GDP PPP per capita, the sectoral structure of GDP, the level and quality of life.
6. Economic typology of national economies is based on their level of development. This book divides economies into two groups—developed and less developed (developing economies, emerging market economies). Among them, various subgroups (groups) are allocated, including the Group of 20 (major economies of the world) and the Group of 7 (major developed economies). Among less developed countries, there is a group of five economic leaders of their continents (under the BRICS abbreviation), as well as new industrial countries, transition economies, fuel exporting countries, other primary products exporting countries, net debt countries, and less developed countries.
7. International trade prevails in international businesses of most countries. The international migration of labor amounts to several million people annually. The international trade knowledge transfer, belonging to the most significant form of international business, is difficult to be measured, as a substantial part of knowledge is transferred for free. The international capital flows in the years of the global economic boom come in terms of volumes with international trade, but in those years of recession or sluggish conjuncture it is sharply reduced.
8. The economic sphere of life has a huge impact on non-economic spheres—political, social, cultural. In return, international business is also impacted by non-economic spheres.

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Concepts and Theories of Global Economy



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Abstract This chapter pays special attention to the concept of international labor division, the concept of international factor movements, national competitive advantage and global competitiveness theories, and economic globalization theories. Last parts of the chapter deal with other concepts and theories of the global economy, including those of political economy.

1 Introduction

There is no unified theory of the global economy. Nevertheless, most economists (albeit with different reservations) share the concept of the international labor division and the concept of international factor movements (flows)—both are called concepts because they combine many theories—as well as the national competitive advantage theory.

The interpretations of the theories of national competitive advantage and global competitiveness of a country, the theory of economic globalization, the political-economic approach to globalization, dependency theory (although this is a group of dissimilar theories), and concepts and theories combining economic, political, social, cultural, and historical approaches to the global economy can be considered widespread.

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2 Concepts of International Labor Division and International Factor Movements, National Competitive Advantage Theory

Both concepts and the theory proceed from the fact that the root cause of the movements of products and economic resources between countries is the differences in the endowment of the countries with these resources (knowledge, capital, labor, entrepreneurship, natural resources). On the one hand, this leads to an international labor division, primarily based on foreign trade. On the other hand, the scarcity or abundance of different resources in different countries is the main reason for their movement between countries.

2.1 The Concept of the International Labor Division

The international labor division is the specialization of national economies in making the products that they exchange with each other. Such a specialization is primarily due to the differences in the endowment of national economies with economic resources, as a result of which the country's economic agents tend to make the products for which their country is sufficiently endowed with resources. The set of economic resources is the same in any country, and the difference between countries in which resources in the country are abundant, according to the terminology of economic theory, and which are scarce. For example, in the EU knowledge, capital, entrepreneurship resources are abundant but labor and natural resources are comparatively scarce. As a result, the EU, on the one hand, exports a lot of high-tech products and intellectual property rights, goes ahead in the global exports of financial assets and business services, and, on the other hand, is one of the world leaders in imports of labor and natural resources.

By increasing the output and export of products based on abundant resources, the country simultaneously curtails the manufacturing of the products based on its other, relatively scarce resources, replacing them with imports of similar products from outside. This is the essence of the economic specialization of individual countries. It is especially high in small economies with their insufficiently capacious domestic market, while specialization is weaker in large economies. Although many types of products in the EU are strongly displaced by imports, they are still produced for consumption in the vast domestic market (oil, gas, coal, fabrics, etc.).

The concept of the international labor division put forward by Adam Smith (contained in his theory of international trade) was then developed by David Ricardo and other classical and neoclassical economists. Before the Industrial Revolution (from the end of the eighteenth to the first half of the twentieth century), the international labor division was based on the differences in the endowment of countries with natural resources. After this, specialization increased, based on the differences in the endowment of countries with other economic resources (primarily labor and

capital). In the modern world, the availability of knowledge and entrepreneurship resources in a country is becoming increasingly important for the specialization of that country.

2.2 The Concept of the International Movements of Economic Resources

The international movements of economic resources (factors of production) are the movements between the countries of knowledge, capital, labor, and entrepreneurial resources (natural resources move mainly within the framework of international trade). The concept of the international movements of economic resources was first put forward in the last century by the Swedish economist Eli Heckscher and developed by his student, later Nobel Prize winner Bertil Ohlin, as well as others. The essence of the concept is that the different endowment of countries with resources leads not only to their specialization and the resulting international trade in goods and services, but also to the movements of resources among countries. The concept stipulates that the international movements of economic resources depend not only on the supply and demand of these resources in different countries, but also on their international mobility (labor and entrepreneurship are less mobile than knowledge and capital), various barriers to the movements of resources (immigration rules, restrictions on foreign capital, secrecy of technology), and many other factors that hinder these movements. Nevertheless, the volume of the international movement of economic resources is comparable to that of international trade.

The international movements of economic resources can complement or replace international trade. An example of the first kind may be the situation when, to increase the export of MNE products, a network of commodity and service companies (sales, service, etc.) is created in a foreign country. An example of the second kind may be the situation when MNEs replace the export of goods to a foreign country by transferring its production there (fully or partially), as, for example, the world's top car companies do in many markets, assembling ready-made cars from local and imported components.

2.3 National Competitive Advantage Theory

The theory put forward by the American economist Michael Porter explains why that country has certain industries whose traded products are competitive on the global market. Fundamentally, however, this theory has significant similarities and differences to other concepts of international labor division and international factor movements, but does not contradict these concepts. Recognizing the different endowment of countries with resources, Porter shows how different types of resources (inherited

and developed, general and specialized) affect the formation of competitive industries in the country.

When dividing all resources into inherited and developed, it follows that if the main resources (labor, natural) are inherited by the country from previous generations, then the country can create developed resources (knowledge, capital, entrepreneurship) in a historically short time, which allows it to change its economic specialization over merely one or two generations.

Dividing all resources into general and specialized makes it possible to isolate special (specific) resources that are suitable only for one industry or group of industries. Thus, if the abundance or scarcity of such a resource as labor determines the country’s opportunities for economic growth only in general terms, then the development of the aerospace industry requires a specially trained workforce, which requires the country and its economic agents to work hard.

At the same time, national competitive advantage theory differs from the concepts of the international labor division and the international movement of economic resources: when analyzing competitive industries of a country, it takes into account such indicators (determinants) as the strategy, structure, and mutual competition of firms operating in the industry, the demands and capacity of the national market in relation to the products of this industry, the level of development of related (supporting) industries, and also the impact on the industry of economic policy and abrupt changes in the economic and political environment (Porter used the term “chances”).

To illustrate the main points of his theory, Porter proposed a graphical scheme: the “diamond model”. This scheme reveals the main indicators of the national economy (the determinants) that form the environment in which firms in this country operate (Fig. 1).

The Diamond Model identifies a system of determinants that, when interacting, create a favorable or unfavorable environment for the development of a country’s potential competitive advantages.

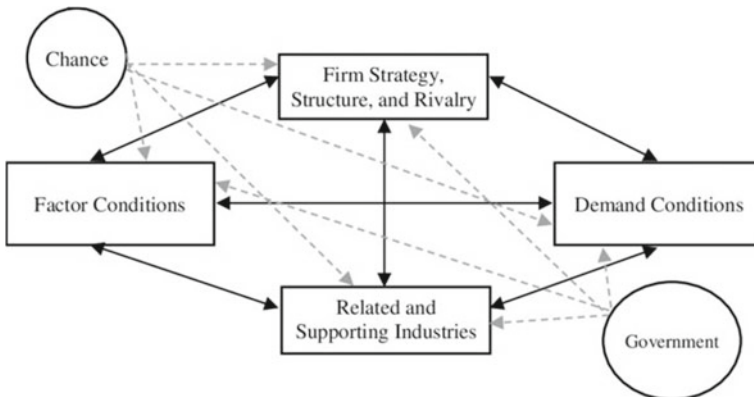


Fig. 1 Porter’s diamond model

What are these determinants? One example is the production of fighters in Russia, which are competitive on the world market. Every year, Russia exports combat aircraft worth several billion dollars a year.

The parameters of the factors are those determinants of economic resources (production factors) that form the competitive advantages of those industries operating for export. Most attention is paid to developed and especially specialized factors (for example, personnel with a narrow specialization, a knowledge base in a certain industry), which, as a rule, are applicable in a limited number of industries or even in a single industry. At the same time, specialized factors, providing a longer and more stable competitive advantage for the relevant industries in the world market, require significant and long-term capital investments. For example, such factors as the creation of the national school of aerodynamics and aviation by Nikolay Zhukovsky, great efforts to train aviation engineers and technicians, and huge state investments in the production of combat aircrafts in Russia were already helpful in the 1930s for launching the mass production of fighters.

The strategy of firms, their structure, and their rivalry all play an important role in shaping the international competitiveness of the industry. If there is no competitive environment in the industry, and if the company's strategy is not focused on working in the conditions of competition between firms, then such firms usually do not have a competitive advantage in the foreign markets. Despite the almost complete lack of competition in the Soviet economy, the Soviet government tried to distribute the state order among different domestic manufacturers of fighters on the terms of competition between them. Today, there is competition between such fighter producers as MiG and Sukhoi.

Demand parameters include, firstly, the capacity of demand, the dynamics of its development, and the demand of buyers for the quality of goods. It is in the domestic market in conditions of developed demand that new products should be tested before entering the global market. Therefore, the firms make attempts to sell the goods on the foreign market that have not yet been sold on the domestic market. However, they are not always successful. For example, the MiG company lost a tender for the supply of 125 fighters for the Indian Air Force in 2010, primarily since the new MiG-35 fighter proposed by it had not yet been provided to the Russian Air Force.

Related and supporting industries provide the export-oriented industries with the necessary materials, semi-finished products, components, and services. The presence of such industries means that the firms working for export should be an integral part of a cluster, i.e., a group of firms from related and supporting industries. Such a cluster was created in the USSR during pre-war and post-war industrialization.

Looking at the overall picture of competitive advantages, Porter also assigns an important role to the circumstances and the government.

Random events are those that have little to do with the conditions of development in the country, and which often cannot be influenced by either firms or even national governments. The most important events of this kind include new inventions, major technological shifts (breakthroughs), sharp changes in resource prices, significant changes in global financial markets or exchange rates, surges in global

or local demand, political decisions of foreign governments, wars, and other unforeseen circumstances. The export of Russian fighter jets in recent decades has been stimulated by a surge in demand for fighter jets due to rising political tensions in Asia.

The role of the government in the formation of national competitive advantage is to exert a significant influence on all the determinants of the Diamond Model, although this influence can be both positive and negative. The government influences the parameters of the factors of production and demand with its fiscal, monetary, and foreign trade policies. The government is the main buyer of public goods in most countries. By pursuing an antimonopoly policy, the government has an impact on maintaining an optimal competitive environment in the leading sectors and sectors of the national economy. Finally, the government in many countries promotes the development of related industries that interact with leading export industries. In order to support aircraft manufacturers in Russia (it is still carried out by state-owned firms), they were merged into the United Aircraft Corporation in 2006.

Porter's Diamond Model provides a good basis for explaining the current level of competitiveness, but only of individual national industries. Therefore, the further development of the theory of national competitiveness followed the path of assessing the global competitiveness of national economies.

3 Global Competitiveness of a Country, Theory of Economic Globalization, Political Economy Approach to Globalization

3.1 Global Competitiveness of a Country According to the World Economic Forum

When studying the international competitiveness of the whole country (not just its individual industries), many researchers agree that it is determined primarily by the level of economic development of the country that has already been achieved (hence the best global competitiveness index for the most developed countries—see Table 1), and secondly, by progress in raising this level (hence a good index for China). On this basis, several international organizations are trying to assess the level of global competitiveness of national economies. First of all, this is led by the World Economic Forum (WEF), whose annual report on the international competitiveness of one and a half hundred countries is called the Global Competitiveness Report. Other organizations include the International Institute for Management Development, which publishes the World Competitiveness Yearbook. The World Economic Forum uses more than hundred indicators combined into 12 groups (sub-indices), each up to 100 points maximum. The arithmetic mean value for each country in points (The Global Competitiveness Index) and the country's place among all the analyzed economies

are derived using these sub-indices (in the last review of WEF there were 141 of them) (Table 1).

The first places in the Global Competitiveness Index, in addition to the United States, are occupied by small and medium-sized developed economies—Singapore, Hong Kong, the Netherlands, Switzerland—while the least developed countries hit the rock bottom.

3.2 Theory of Economic Globalization

In international economics (i.e., the economics section devoted to international business), globalization is considered there as a positive phenomenon, as evidenced in the works of C. Kindleberger, J. Meade, R. Mundell, R. Lucas, J. Stiglitz, and P. Krugman. According to international economics, freely functioning global markets, formed as a result of globalization, can produce optimal results. This is since the liberalization of economic relations is recognized by this theory as the best solution (or at least a movement toward the optimum) within any economic system, including the world economy. The ideal is self-regulating global markets, where the political presence of states and international economic organizations is limited by regulating market failures, in particular, in the provision of global public goods. Nevertheless, mainstream economics recognizes that the consequences of the liberalization of economic relations between countries may be unfavorable. In particular, the growing openness of national economies automatically increases their dependence on external factors, which national governments cannot control. As a result, the main task for both the theory of economic globalization and its practice in recent years has been the search for ways to ensure sustainable development of the global economy (see chapter “[World Economy Major Trends: New Normal, the Forth Industrial Revolution, Globalization, Sustainable Development](#)”).

The transition to global sustainable development looks ambiguous from the point of view of various schools and trends considering economic globalization. First and foremost, there is a conflict between the idea of free markets (neoliberalism) and the idea of managed markets (neomercantilism). In practice, this discussion has contributed to the fact that national governments began to pursue flexible economic policies, combining protectionism and liberalization of economic relations in the foreign arena. The balance and the degree of their use are usually determined based on the conjuncture prevailing in various sectors of the world economy and on world markets. This discussion became the starting point for the search for models of sustainable development that can solve the current global problems (inequality, poverty, the environment, etc.—chapter “[World Economy Major Trends: New Normal, the Forth Industrial Revolution, Globalization, Sustainable Development](#)”).

In recent decades, international (global) institutions have been considered as the main actor for solving these problems. In theory, these institutions (including informal ones) are recognized as an integral element in the formation of world markets

Table 1 Global Competitive Index of individual countries in 2018 according to the World Economic Forum, in points (from 1 to 100)^a

Country	1	2	3	4	5	6	7	8	9	10	11	12	Score	Rating
China	58.6	77.9	78.5	98.8	87.8	64.1	57.6	59.2	75.0	100.0	66.6	64.8	73.9	28
USA	71.2	87.9	74.3	99.8	83.0	82.5	68.6	78.0	91.0	99.5	84.2	84.1	83.7	2
India	56.8	68.1	32.1	90.0	60.5	50.5	50.4	53.9	93.7	60.0	60.0	50.9	61.4	68
Japan	71.7	93.2	86.2	94.9	100.0	73.3	70.4	71.5	85.9	86.9	75.0	78.3	82.3	6
Germany	72.4	90.2	70.0	100.0	92.3	84.2	68.2	72.8	79.1	86.0	79.5	86.8	81.8	7
Russia	52.6	73.8	77.0	90.0	69.2	68.3	52.9	61.0	55.7	84.2	63.1	52.9	66.7	43
Brazil	48.1	65.5	58.1	69.4	79.4	56.4	45.9	53.5	64.6	81.3	60.2	48.6	60.9	71
Indonesia	58.1	67.7	55.4	90.0	70.8	64.0	58.2	57.7	64.0	82.4	69.6	37.7	65.0	58

Source: World Economic Forum, Global Competitiveness Report 2019, Geneva, 2019

Notes: 1—Institutions; 2—Infrastructure; 3—ICT adaptation; 4—Macroeconomical stability; 5—Health; 6—Skills; 7—Product market; 8—Labor market; 9—Financial system; 10—Market size; 11—Business dynamism; 12—Innovation capacity

^aDue to the pandemic index was not calculated in 2020–2021

for goods, services, and factors of production, as well as neutralizing the negative consequences of economic globalization. Another key role of global institutions is to provide global public goods that global markets cannot provide. In particular, these institutions may oblige developed countries to build trade and financial regimes that enable less developed countries to catch up with them in terms of economic development. For example, they can do so by providing producers in developing countries with higher or fairer prices for their goods, as well as by promoting higher social and environmental standards (fair trade standards).

3.3 Political Economy Approach to Globalization

Political economy refers to economics and politics in their interrelation, and international (global) political economy—one of its subsections—explores international business, including globalization, at the intersection of economic and political sciences. It proceeds from the premise that globalization is not only an economic process but also the spread of uniformity in the social, political, and cultural life of people from different countries and regions (see the works of C. Kindleberger, N. Keohane, J. Nye, and J. Rosenau). At the same time, globalization leads to both positive and negative results from the point of view of political economy:

- Positives include: standardization of national policies and institutions; liberalization of state policy and opening of markets; depoliticization of economic processes and weakening of nationalism; reduction of the use of violence and military force in international relations, etc.;
- Negatives include: a higher degree of vulnerability of national economies to external macroeconomic shocks; an increase in the influence of foreign capital on the national economy (multinational enterprises, global financial institutions, etc.); global “market failures” (poverty, backwardness, environmental pollution, etc.).

According to international political economy, the main result of globalization is the growth of cross-border interdependence and the expansion of the range of subjects of international relations, including economic ones (from ordinary people to multinational enterprises; from states and intergovernmental organizations to public organizations, interest groups, and non-governmental organizations). Political economic analysis recognizes that globalization is a potentially irreversible process and all attempts to prevent globalization are ultimately useless, and the main deterrent to globalization is the institution of sovereignty. In a world with political borders and characterized by the absence of a central government, states remain—for good or bad—the only formally free entities capable of ignoring even international agreements (especially characteristic of the most powerful states if they believe that these agreements do not correspond to their national interests, as, for example, in the case of the former US position on the Kyoto Protocol of 1997 and the Paris Climate Agreement of 2015).

In the international political economy, no single entity or group of entities is capable of determining or dominating all international processes. As a result, one of two approaches to managing globalization can be used: from a position of strength, or in the format of global governance.

According to the first, the most powerful states will continue to have a decisive influence on globalization. When a conflict between states, international principles, norms, and rules arises, the most powerful of them are capable of violating established global rules (as the United States did, for example, by moving to negotiations on the creation of various trade and investment partnerships outside the framework of the WTO [see chapter “[World Economy Major Trends: New Normal, the Forth Industrial Revolution, Globalization, Sustainable Development](#)”]).

According to the second approach, globalization will develop through the creation of global institutions with their mechanisms for managing global processes, and the argument here is usually the following: if globalization continued without the general formal rules of international trade (developed by the WTO) and financial relations (established by the IMF, the Bank for International Settlements), the degree of economic and political stability in the international system would be lower. An increasing role in this approach is assigned to informal international institutions—corporate codes of conduct, religion, concepts of justice and humanity—due to the importance of the non-economic aspects of globalization.

3.4 Dependency Theory, Multidisciplinary Theories of Global Economy

Dependency theory is a conglomerate of theories whose authors see the reason for the backwardness of less developed countries in the presence of the so-called “center” and “periphery” of the global economy, between which unequal relations have developed. In contrast to the postulates of neoclassical theory (economic growth is beneficial for everyone), proponents of the dependency theory point out that economic activity in richer countries often leads to serious economic problems in poorer countries. From their point of view, the economic mechanism of this is roughly formulated as follows: less developed countries, as a rule, offer cheap labor, raw materials, and semi-finished products on the global markets, and these resources flow to developed countries, which convert them into finished products and eventually supply them to less developed countries. Since the price paid for imports exceeds the proceeds from the export of raw materials, the amount of capital that less developed countries could direct to their modernization decreases. The result is a vicious circle that perpetuates the division of the world economy between the rich core and the poor periphery.

The first works of the authors of these theories appeared in the late 1940s and early 1950s. The founders are considered to be Argentine economist Raúl Prebisch and the German-British scientist Hans Singer. The dependency theory reached the peak of its popularity by the 1970s, and the subsequent decline in interest in these

theories is attributed to the inefficiency of the proposed recipes for accelerating economic growth in Latin America, as well as the inability to explain the examples of successful development in East and Southeast Asia. However, there has been a certain renaissance of these theories in the twenty-first century.

It should be noted that the dependency theory does not form a single scientific school, but consists of many directions, which are most often divided into liberal structuralism (reformism) and neo-Marxism. Liberal reformists, many of whom were not only scientists but also practicing politicians (for example, Prebisch), advocate active state intervention in the economy, sometimes radically diverging in the scale of such intervention, while neo-Marxists (for example, Samir Amin) consider social revolution—and even tools of command economies—to be the best means of overcoming dependence.

World-systems theory by Immanuel Wallerstein is close to the dependency theory, but it is a multidisciplinary theory; it considers the unit of analysis to be not nation-states, but world-systems, i.e., societies that were considered by their members as a separate “world”, relatively isolated from the rest of the world. According to Wallerstein, world-systems are represented by the “world-empires” (a system of societies with a diverse culture existing within a single political system and the dominance of tributary economic relations) and the “world-economies” (a system of societies with a diverse culture united by close economic ties based on market relations, but not united into a single political entity). The first and only example of a world economy is called the capitalist world economy, which emerged in the fifteenth to sixteenth centuries in Europe and spread all over the world by the twenty-first century. The capitalist world economy consists of a core, a semi-periphery, and a periphery. Core countries specialize in quasi-monopolistic high-yield industries, while peripheral countries specialize in highly competitive but low-yield industries.

Due to the strong cyclical fluctuations characteristic of capitalism, the theory does not exclude the rise and strengthening of one group of countries at the expense of others, although in general the structure of the world economy based on unequal exchange remains unchanged. It means that the composition of the core–semi-periphery–periphery countries will change over time, and it is no coincidence that the entire history of the core of the current world economy is the history of the struggle for hegemony. The main prerequisite for achieving hegemony is not the rattling of weapons (although “batons are the main trump cards”), but the achievement of technological, financial, and commercial superiority by the hegemon state.

Early versions of the theory did not exclude the emergence of a second world economy based on political and economic integration, in particular, in the form of a socialist “world-government”. However, Wallerstein himself avoided the question of who could become the core of an alternative world economy.

The clash of civilizations theory by Samuel Huntington is based on the thesis of strengthening the multipolarity of the world and highlighting the nine major civilizations. According to this theory, the future world is not a single civilization, but a set of different civilizations that have a lot in common, but many historically determined differences are unlikely to disappear. Therefore, the central and most dangerous

aspect of emerging global politics will be the conflict between groups of different civilizations.

Huntington considered only political relations between civilizations, without directly affecting the sphere of economics. Commentators and proponents of the theory then made several assumptions about the future contours of the global economy. In particular, these include:

- The gradual decrease in the dominance of Western countries in the world economy and the rapid growth of the share of Asian countries in the world economy;
- More even distribution of economic power in the world;
- Strengthening the ties within each civilization, gravitating to the key, main countries of these civilizations;
- The strength and stability of economic ties between countries and within integration associations largely depending on their belonging to one civilization or different civilizations, and if different, then on the compatibility of these civilizations.

4 Conclusions

1. The international labor division is the specialization of national economies in making those products that they exchange with each other. Such a specialization is primarily due to differences in the endowment of countries with economic resources, as a result of which the economic agents of a country tend to make the products for which their country is sufficiently endowed with resources. By increasing the output and export of products based on relatively abundant resources, the country simultaneously curtails the production of products based on its remaining, relatively scarce, resources, replacing them with imports of similar products from outside. This is the essence of the economic specialization of individual countries. It is especially high in small economies with their insufficiently capacious domestic market, while specialization is weaker in large economies.
2. The international movements of economic resources (factors of production) are the movements between countries of knowledge, capital, labor, and entrepreneurship. The essence of the concept is that the different endowment of countries with resources leads not only to their specialization and the resulting international trade in goods and services, but also to the movements of resources between countries. The concept stipulates that the international movements of economic resources depend not only on the supply and demand of these resources in different countries, but also on their international mobility (labor and entrepreneurship are less mobile than knowledge and capital), various barriers to the movements of resources (immigration rules, restrictions on foreign capital, secrecy of technology), and many other factors that hinder these movements. Nevertheless, the

volume of the international movements of economic resources is comparable to that of international trade.

3. The theory of international competitiveness explains why a country has one or another set of industries whose products are competitive on the world market. It differs from the two previous concepts: when analyzing competitive industries of a country, it takes into account such indicators (calling them determinants) as the strategy, structure, and mutual competition of firms operating in the industry, the demands and capacity of the national market in relation to the products of this industry, the level of development of related (supporting) industries, and also the impact on the industry of economic policy and abrupt changes in the economic and political environment. Based on these theoretical conclusions, a number of international organizations are trying to quantify the level of international competitiveness of the countries. This is primarily done by the World Economic Forum, which publishes the Global Competitiveness Report yearbook, and the International Institute for Management Development, which publishes the World Competitiveness Yearbook.
4. The transition to a global economy looks ambiguous from the point of view of various schools and directions. First and foremost, it is a conflict between the idea of free markets (neoliberalism) and the idea of managed markets (neomercantilism). In practice, this discussion contributed to the fact that national governments have begun to pursue flexible economic policies, combining protectionism and liberalization of economic relations.
5. In terms of international political economy, no single entity or group of entities is capable of defining or dominating all international processes. As a result, one of two approaches to managing globalization is possible: from a position of strength, or in the format of global governance.
6. Dependency theory is a conglomerate of theories whose authors see the reason for the backwardness of less developed countries in the presence of the so-called “center” and “periphery” of the global economy, between which unequal relations have developed. In contrast to the postulates of neoclassical theory (economic growth is beneficial for everyone), proponents of dependency theory point out that economic activity in richer countries often leads to serious economic problems in poorer countries.
7. World-systems theory by Wallerstein is close to the dependency theory, but it is a multidisciplinary one. According to it, the unit of analysis is not nation-states, but world-systems, which are represented by “world-empires” and “world-economies”. The first and only example of a world economy is called the capitalist world economy, which emerged in the fifteenth to sixteenth centuries in Europe and spread all over the world by the twenty-first century. The capitalist world economy consists of a core, a semi-periphery, and a periphery. Core countries specialize in quasi-monopolistic high-yield industries, while peripheral countries specialize in highly competitive but low-yield industries.
8. The clash of civilizations theory by Huntington is based on the idea of strengthening the multipolarity of the world and highlighting the major civilizations. According to this theory, the future world is not a single civilization, but a set

of nine civilizations that have a lot in common, but there are also many historically determined differences that are unlikely to disappear. Commentators and proponents of the theory then made some assumptions about the contours of the world economy. In particular, this is a gradual decrease in the dominance of Western countries in the world economy and a rapid increase in the share of Asian countries; a likely more even distribution of economic power in the world; strengthening ties within each civilization with gravitation to the key, main countries of these civilizations; and the strength and stability of economic ties between countries and within integration associations largely depending on their belonging to one or different civilizations, and if different, then on the compatibility of these civilizations.

World Economy: Growth, Proportions, Efficiency, and Forecasting



Alexander Bulatov 

Abstract This chapter firstly describes the factors and main models of economic growth, as well as its dynamics in retrospect. Then, it analyzes the main economic proportions and indicators of macroeconomic efficiency in the world. At the end of the chapter, there is a section on the methodology and practice of macroeconomic forecasting.

1 Introduction

The term “economic development” (of firms, industries, countries, regions, and the world) is widely used in the economic literature (e.g., Todaro and Smith 2020). The economic development of a country is a process that primarily encompasses economic growth, improving the proportions in the economy (especially sectoral), as well as the level and quality of life. Similar definitions can be given to the economic development of the world and the region.

2 Macroeconomic Growth: Theories and Trends

When analyzing economic development, most attention is paid to the economic growth, because it usually leads to progress of the other elements of economic development in the long run.

However, there may be situations when economic growth is not accompanied by the progress of other indicators of the level of development from the long-term perspective, and there is growth without development. This most often happens in conditions when the GDP growth rate is lower than the population growth rate, as happened, for example, in most countries of Sub-Saharan Africa in the 1970s–1990s.

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In conditions of economic growth exceeding the rate of population growth, only some indicators of the level of development can deteriorate, as was observed in China, where the enormous growth of industry has led to severe environmental pollution. In this case, the term “growth quality” is more applicable, meaning a multidirectional movement of economic development indicators.

2.1 The Concept of Economic Growth and Its Calculation Methods

The economic growth of a country is the rate of growth of its GDP. To compare GDP for different periods, one has to calculate it without price fluctuations, or, as statisticians say, calculate real GDP (GDP in real terms).

According to the chain indices method, the prices of the previous year are used to calculate the GDP volume index for the reporting year in real terms. To build dynamics for a longer period, the indices calculated for each year to the previous year are chain-linked. Using this method, one can also obtain data on the dynamics of GDP for a long period in the prices of the year taken as the base for this period (the so-called constant prices).

According to the double deflation method, price indices for individual components of GDP are used to convert them into constant prices. Such price indices are called deflators (for example, consumer price index—CPI), and the price index created on their basis for the entire GDP is called the GDP deflator. For example, the US GDP for 2001–2021 grew 2.2 times in current prices, but growth in real terms (in constant prices) was 1.4, since the GDP deflator for this period was 1.6.

According to the extrapolation method, the dynamics of GDP and its components are calculated using quantitative indices that adequately reflect the dynamics of output growth/drop in each type of economic activity, for which a set of goods specialized for a particular type of economic activity is usually taken. However, this method is more often used to measure the dynamics of some industries.

It is also worth saying that the most correct measurement will be the dynamics of GDP per capita. For example, the population of the USA grew by 18% during 2001–2021, and therefore GDP per capita grew only 1.9 times. However, in practice, the growth rate per capita is measured less often than the dynamics of GDP.

As for large countries and regions, Table 1 considers their economic dynamics at the end of the twentieth–beginning of the twenty-first century against the background of the growth rates of the world economy.

Table 1 shows that a group of developed countries has reduced its economic growth rates in the twenty-first century compared to the end of the twentieth century. A group of less developed countries, having accelerated their economic growth at the beginning of the twenty-first century, then also began to reduce them. As a result, the world has entered an era of more moderate economic growth.

Table 1 World output, annual percent change

	Average 1991–2000	Average 2001–2010	2013	2016	2019	2020	2021	2022, projection
World	3.1	3.9	3.3	3.3	2.9	−3.0	6.0	3.2
Advanced economies	2.8	1.7	1.4	1.8	1.7	−4.4	5.2	2.4
USA	3.3	1.7	1.8	1.7	2.3	−3.4	5.7	1.6
Euro Area	2.2 ^a	1.2	−0.2	1.9	1.6	−6.1	5.2	3.1
Germany	2.1	0.9	0.4	2.2	1.1	−3.7	2.6	1.5
France	2.0	1.3	0.6	1.0	1.8	−7.9	6.8	2.5
Italy	1.6	0.3	−1.8	1.3	0.5	−9.0	6.6	3.2
Japan	1.3	0.6	2.0	0.8	−0.2	−4.6	1.7	1.7
Emerging market and developing economies	3.6	6.2	5.0	4.5	3.7	−1.9	6.6	3.7
Regional Groups								
Emerging and developing Asia	7.4	8.5	6.9	6.8	5.3	−0.6	7.2	4.4
China	10.4	10.5	7.8	6.9	6.0	2.2	8.1	3.2
India	5.6	7.5	6.4	8.3	3.7	−6.6	8.7	6.8
Emerging and developing Europe	2.0 ^b	4.4	3.1	1.9	2.5	−1.7	6.8	0.0
Russia	−4.0	4.8	1.8	0.2	2.2	−2.7	4.7	−3.4
Latin America and the Caribbean	3.3	3.2	2.9	−0.6	0.1	−7.0	6.9	3.5
Brazil	2.5	3.7	3.0	−3.3	1.2	−3.9	4.6	2.8
Mexico	3.5	1.5	1.4	2.6	−0.2	−8.1	4.8	2.1
Middle East and Central Asia	4.0 ^c	5.3	3.0	4.6	2.2	−2.7	4.5	5.0
Saudi Arabia	2.7	3.4	2.7	1.7	0.3	−4.1	3.2	7.6
Sub-Saharan Africa	2.4 ^d	5.9	4.9	1.5	3.1	−1.6	4.7	3.6
Nigeria	1.9	8.9	5.3	5.7	2.2	−1.8	3.6	3.2

(continued)

Table 1 (continued)

	Average 1991–2000	Average 2001–2010	2013	2016	2019	2020	2021	2022, projection
South Africa	1.8	3.5	2.5	0.7	0.1	−6.3	4.9	2.1

Source IMF. World Economic Outlook, April 2009; October 2022

^aEuropean Union

^bEstimate, former USSR is not included

^cMiddle East only

^dIncluding Northern Africa

2.2 Factors and Models of Economic Growth

Economic growth occurs due to the use of economic resources (otherwise called economic growth factors). Most economists of the twentieth to twenty-first centuries counted among them labor resources (labor, in terms of economics), natural resources (land), capital (both real and financial), and entrepreneurial resources (entrepreneurship). In recent decades, a fifth resource has been increasingly added to these four economic resources: knowledge, which has already become the main factor of economic growth in developed countries.

Theoretical models of economic growth have been created on the basis of economic growth factors (McConnel et al. 2017). The most famous ones are the neoclassical models of Cobb–Douglas and Solow, and the Keynesian models of Harrod and Domar.

The Cobb–Douglas model (more precisely, the Cobb–Douglas production function) is the simplest of economic growth models and can be applied in both micro- and macroeconomics. It is based on the simplest production function ($Y = f(K, L)$) and has the following form:

$$Y = AK^\alpha L^\beta \quad (1)$$

where Y is the volume of output in value terms (the volume of GDP or GNI at the macroeconomic level);

K —capital input (the amount of capital expenditure);

L —labor input (the amount of labor cost);

α —the share of capital in the total value of the labor and capital employed, varies from 0 to 1;

β —the share of wages in the total cost of labor and capital employed, $\beta = 1 - \alpha$; and

A —the coefficient of technological productivity; it reflects the contribution to the economic growth of all other economic resources (close to the indicator T in the Solow model, see below).

The Cobb–Douglas model is based on a number of assumptions. One of them is that capital and labor are interchangeable (i.e., equipment replaces employees, and vice versa), and therefore the coefficients α and β are introduced into the formula.

Another premise is that the coefficient of technological productivity changes slowly, is taken as a constant value in the short term, and is found empirically. This means that the Cobb–Douglas model primarily demonstrates how changes in the amount of capital and labor used affect economic growth. For example, if the parameter A provided 1% growth in previous years, the coefficients α and β were equal to $\frac{1}{4}$ and $\frac{3}{4}$, respectively, then if the volume of capital used this year increases by 4% and labor by 2%, then the rate of product growth will be 3.5%, since $1.01 \times 1.01 \times 1.015 = 1.035$.

The Solow model is also based on the simplest production function and represents the following system of equations in a simplified form:

$$\begin{aligned}
 (1) \quad & Y = Tf(K, L); \\
 (2) \quad & Y = C + S; \\
 (3) \quad & S = sY, \text{ where } 0 < s < 1; s = \text{const}; \\
 (4) \quad & S = I; \\
 (5) \quad & I = K' + \mu k, \text{ where } 0 < \mu < 1, \mu = \text{const}; \\
 (6) \quad & L = gL', g = \text{const}, \tag{2}
 \end{aligned}$$

where T is the so-called Solow residual, interpreted as the efficiency of using all the combined factors of economic growth (total factor productivity, multifactor productivity);

C —the volume of final consumption;

S —the volume of gross savings;

s —the rate of gross savings;

I —investment (gross capital formation, investment in real capital);

K' —net capital formation (excluding depreciation);

μ —the rate of depreciation;

L —labor;

L' —growth of workforce;

g —the rate of use of workforce increase growth.

This means that the Solow model demonstrates the dependence of economic growth primarily on aggregate factor productivity, labor force growth, and investment in real capital. At the same time, the cumulative factor productivity primarily reflects the contribution of innovation and professional development to economic growth, although in some cases it may be something else (for example, a decrease in the cost of raw materials used due to conjunctural changes in prices).

Based on the Solow model, the Romer model (with a more detailed analysis of scientific and technological progress), the Barro model (including behavioral and institutional factors, such as economic policy), the Acemoglu–Johnson–Robinson model (with an emphasis on the analysis of institutions), the Nordhaus model (including natural resources and environmental damage), and others were created. Economic growth models do not sufficiently take into account the impact of the global economy on the national economy, without showing, for example, what specific

contribution to the total factor productivity is made by the country's participation in the international transfer of knowledge. Nevertheless, these models as a whole can reveal the quantitative contribution to the economic growth of labor, capital, and total factor productivity to economic growth as a whole. For example, the contribution of this productivity to world economic growth in 1950–1980 was about 44%, and in 1980–2010 about 33%.

Modern scholars working within the framework of unified growth theory and historical political economy include an even larger set of variables of economic growth in the factors of long-term economic growth—inequality in the distribution of factors, barriers to entry into industries, the level of education of the population, etc., (for more details, see chapters “[World Economy Major Trends: Evolution of National Economic Systems](#)” and “[USA](#)”).

The proponents of the neoclassical trend emphasize the growing contribution of total factor productivity to economic growth, especially in developed countries, where labor growth is comparatively low, and investment growth is limited by declining capital productivity (capital-output ratio) and slowly growing demand for investment from the service sector, which dominates their post-industrial economy. In less developed countries that are still building or completing an industrial economy, the Keynesian approach is more popular, according to which one can influence economic growth primarily through investment. According to Keynesians, it is investment that generates a multiplier effect leading to GDP growth (at the same time they recognize the acceleration effect, i.e., that different prospects for GDP growth generate different inflows of investment into the economy).

For example, in the Domar model, the absolute increase in GDP/GNI is the result of the interaction of investment growth and capital-output ratio, which shows the ratio of investment to GDP/GNI growth

$$\Delta Y = \Delta I / R, \quad (3)$$

where ΔY —the increase in national income;

ΔI —growth of investment in real capital;

R —capital-output ratio.

The Harrod model emphasizes the dependence of growth rates not only on the capital-output ratio, but also on the rate of gross savings (assuming it is equal to the rate of gross capital formation (rate of investment):

$$\Delta Y_t / \Delta Y_{t-1} = \Delta I_t / \Delta I_{t-1} = s / R. \quad (4)$$

The latter two models are very similar and are therefore often called the Harrod–Domar model, although the Harrod model is more detailed. For example, it uses the concepts of not only actual growth rate, but also natural and warranted growth rates. According to Harrod, the natural growth rate is such a steady growth of the national economy, in which the entire population growth is used, that all the possibilities of increasing labor productivity are also used and which would take place, even if there were no unemployment, underloaded production capacities, and periodic economic

crises, i.e., the maximum possible growth rate for the national economy (therefore it is sometimes called potential growth, potential GDP).

As for the difference between actual growth rate and potential growth rate, Harrod introduces a new category—warranted growth rate. This is the economic growth in which entrepreneurs are satisfied that they did the right thing, although the economy is not in a state of full capacity utilization and full employment. In many subsequent studies, guaranteed growth is called the growth rate of a country's economy in a historical perspective, or simply its historical growth rate (sometimes even natural growth rate, although Harrod's term "natural" has a different meaning). For example, the historical growth of US GDP per capita over the past 60 years has tended to be 1.9% per annum. Harrod explained the attraction of a developed economy to a guaranteed (historical) growth rate by the relative constancy of the gross savings rate in the country due to the inactivity in the long term of the marginal propensity of the country's population to save, as well as due to the fact that inventions that increase capital intensity are balanced by the inventions that save capital.

2.3 Instability of Economic Growth

Economic growth models help to determine the contribution of various economic resources and their effectiveness, but do not determine the causes of instability in the growth of national economies. Still, the fact that the growth of national economies is unstable both in the short term (by quarters), in the medium term (by years), and in the long term (by decades)—and, moreover, is accompanied by crises (during a crisis, economic growth rates become, as economists sometimes say, negative)—is obvious.

At the level of medium- and long-term fluctuations, this is caused by the following reasons:

- as the level of economic development of those less developed countries that have caught up with developed countries increases, the growth rates of their GDP begin to approach the moderate rates of these leaders. Recent examples are the Japanese economy, which caught up with the advanced economies of Europe and America in terms of development in the 1980s and then sharply slowed down, as well as the Chinese economy, which began to slow down its growth in the last decade as the phase of active industrialization was completed;
- the growth of all market economies is still cyclical, and economic theory pays considerable attention to the causes of medium- and long-term cycles. At the same time, special attention is paid to such reasons as over-accumulation of capital (before real capital, now financial capital) in the medium term (these are Kitchin cycles from 2 to 5 years, and Juglar cycles from 7 to 11 years), and mismatch of supply and demand for investment goods and change of technological patterns in the long term (this is reflected by the Kuznets building cycles of about 15–25 years, and Kondratiev cycles of 45–60 years);

- the country's economic growth is also affected by other factors that dramatically increase or decrease the volume and efficiency of using its economic resources (volatility of world prices for the country's export products, fluctuations in the inflow of foreign capital, the effectiveness of the country's institutions and economic policy in different years, the discovery of new deposits of natural resources, the combination of periods of good weather with periods of natural disasters, etc.). Non-economic aspects also have a strong impact on economic growth. They include political (especially wars), social (primarily strikes, unrest, revolutions), cultural ones (for example, the rejection of new institutions by the population), and, of course, epidemics and pandemics.

Due to the instability of growth rates, one should consider them in retrospect (preferably over several decades) to identify medium-term and long-term fluctuations and hypotheses about the causes of these fluctuations.

The analysis of economic dynamics also involves a detailed consideration of the causes of fluctuations in economic growth in the short term. At the same time, the seasonal character of these fluctuations should be taken into account. For example, in many countries, the first quarter of the year involves fewer working days, which affects the volume of output, and the last quarter of the year is characterized by a large volume of pre-New Year retail turnover and final year tax payments of legal entities. If one cannot level seasonal fluctuations, the volume of output of the studied quarter is compared with the same quarter of the previous year.

The analysis of economic growth in the short term is especially relevant during the years of economic crisis, when everyone is interested whether the crisis has reached the bottom and whether there are signs of a reviving economic growth. Then they especially carefully consider the latest indicators of the macroeconomic conjuncture, although they are relevant during the period of economic growth.

2.4 The Growth Rates of the World Economy in Retrospect

Despite the unstable dynamics, the world economy is growing faster every century (but not every decade). However, the trend toward accelerating economic growth has different effects in different countries and regions and in different time periods.

For thousands of years, the standard of living of mankind has changed little from generation to generation. Economic development was very slow due to very low economic growth rates. The situation changed in the second millennium: the growth rate of GDP in the world began to accelerate. This is especially evident when recalculating economic growth rates per capita (for this, the GDP growth rate is reduced by the population growth rate, although this is a simplified version) (Table 2).

As Table 2 shows, the average annual growth rate of the world's population per capita was zero in the first millennium A.D., while in subsequent centuries it increased to hundredths of a percent, and in the last hundred and more years it has already been several percent. The acceleration of economic growth began in Western Europe, the

Table 2 The world's GDP growth rate per capita over the past two millennia, %

Country and region	Indicator												
	1–1000	1000–1500	1500–1820	1820–1870	1870–1913	1913–1950	1950–1973	1973–2003	2000–2012 ^a	2015	2019		
USA	0.00	0.00	0.36	2.19	1.76	1.21	2.60	1.80	0.90	2.1	1.8		
Western Europe	–0.03	0.12	0.14	0.98	1.33	0.76	4.05	1.87	0.80	1.8 ^b	1.1 ^b		
Japan	0.01	0.03	0.09	0.19	1.48	0.88	8.06	2.08	0.70	1.3	0.9		
Central and Eastern Europe	0.00	0.04	0.10	0.63	1.39	0.60	3.81	0.87	5.00	4.1	1.2		
Former-USSR countries	0.00	0.00	0.10	0.63	1.06	1.76	3.35	–0.38	5.30	–2.5 ^c	1.4 ^c		
China	0.00	0.06	0.00	–0.25	0.10	–0.56	2.76	5.99	9.90	6.4	5.7		
India	0.00	0.04	–0.01	0.00	0.54	–0.22	1.40	3.14	6.20	6.8	4.0		
Other East Asian countries	0.00	–0.05	0.01	0.09	0.82	–0.24	2.89	3.23	...	3.4 ^d	3.2 ^d		
Western Asia	0.02	–0.01	0.01	0.40	0.79	1.45	4.47	0.65	2.40	0.6 ^e	0.15 ^e		
Latin America	0.00	0.01	0.16	–0.04	1.86	1.41	2.60	0.83	2.30	–1.4	–0.1		
Africa	–0.01	–0.01	0.00	0.35	0.57	0.91	2.02	0.32	2.40 ^f	0.1 ^f	–0.4 ^f		
The world as a whole	0.00	0.05	0.05	0.54	1.31	0.88	2.91	1.56	1.50	1.6	1.4		

Sources Maddison (2007); World Bank Open Data

^a Author's calculations; ^b Euro Area countries; ^c only Russia; ^d including India; ^e including North Africa; ^f Sub-Saharan Africa

homeland of the industrial revolution, then it happened in the USA, Central and Eastern Europe, and Japan, before spreading to the rest of the world.

It was primarily the new knowledge gained by scientists that helped to accelerate economic growth. Their achievements, which have been like an avalanching in the last 200 years, have led to the fact that knowledge, which was not allocated by the classics of economic theory as a separate economic resource along with labor, capital, land, and entrepreneurship, has become such a resource, and at the same time no less important—if not more important—than other economic resources. It was the countries that generated knowledge and whose economy successfully adapted it (the latter is very important, as the example of China showed, where many inventions were made in the last millennium, which were poorly or almost not used due to the immunity of the Chinese traditional economy to these inventions). Firstly machines, and then chemistry, electronics, and biology, immeasurably increased the productivity of the economy.

Another important reason for the acceleration was the increase in gross savings and accumulation rates. The gradual increase in the welfare of mankind has increased its ability to save and invest more. This has increased the capital–labor ratio of employees and, accordingly, labor productivity, especially when real capital is becoming more productive (based on scientific achievements), and the employee themselves is becoming more educated.

Another important reason for the acceleration was globalization. By contributing to the growth of the most competitive goods and services on the world market, and stimulating the movements of economic resources around the world, it accelerates economic growth in the countries actively participating in globalization. Indirectly, this is confirmed by the period of 1913–1950, when the pace of economic growth in the world fell not only because of the two World Wars and the Great Economic Depression, but also because of the curtailment of international economic relations.

According to the calculations of the British economic historian Angus Maddison, GDP per capita in constant prices over the past millennium has grown in the world as a whole by 14.5 times. However, GDP grew unevenly across the regions of the world: whereas in the USA, Western Europe, and Japan it increased 72.5, 47, and 50 times, respectively, then in Central and Eastern Europe it increased 16 times, the Russian Empire (Commonwealth of Independent States) 13.5 times, China 10.5 times, India 5 times, and in Africa only 3.5 times (Maddison, 2007). It can be concluded that the acceleration of economic growth has increased the level of development of all countries of the world in retrospect, but to varying degrees.

As a result, the gap in the levels of economic development between the countries of the world, which existed before, has sharply increased, and the difference between developed and less developed countries became more obvious than before. The latter are faced with the task of catching up with advanced countries, or the task of catch-up development, which is possible only by accelerating economic growth in countries of catch-up development. In the last decade, China, India, and other Asian countries (primarily new industrial ones) took the path of reducing the gap with developed countries. Other regions of the less developed world have more modest rates of catching up.

Developed countries face another problem—maintaining rather high growth rates of about 2% per capita for the developed world. Although this is lower than during the recovery of the world economy after two World Wars (1950–1973), it is higher than the pace of the first wave of globalization (1870–1913). However, at the end of the twentieth to beginning of the twenty-first century, these rates in the most developed countries are below 2%. The reason may lie primarily in the decline in the growth rates of knowledge and labor in this group of countries (the so-called new normal—chapter “[World Economy Major Trends: New Normal, the Forth Industrial Revolution, Globalization, Sustainable Development](#)”).

3 Proportions and Efficiency

Economists are interested in the proportions into which the GDP of the world, regions, and countries is divided, which helps them to better analyze the structure of GDP. At the same time, they analyze the efficiency of GDP production.

3.1 Macroeconomic Proportions

Primarily, this is the sectoral structure of GDP. As mentioned in paragraph 1.3, as the level of economic development increases, the share of the primary, and then the secondary, sector in GDP decreases, and the share of the tertiary sector increases. The main reason for the growth of the share of the tertiary sector is considered to be the growth of incomes of the population, which, as is known, increases spending on services. For example, the average Chinese family spent about a third of their income on services in 2013, while in 2020 it was about half.

A comparison of the sectoral structure of GDP and the structure of employment by sector also helps to analyze labor productivity by sector and industry. According to Table 3, it was 3.6 times lower in the Chinese primary sector, while in the secondary and tertiary it was 1.4 and 1.1 times higher than the average Chinese labor productivity.

Table 3 The shares of the three sectors in Chinese GDP, %

Sector	1980	2000	2019	2020	Share in employment, 2019
Agriculture, incl. forestry and fishery	29.6	14.7	7.1	7.7	25.3
Industry, incl. construction	48.1	45.5	38.6	37.8	27.4
Services	22.3	39.8	54.3	54.5	47.3

Source World Bank Open Data

An important proportion is the share of savings (gross savings) in GDP (the rest of GDP goes to consumption). Industrialization requires a large rate of savings, which traditionally presents a challenge for the countries starting industrialization. However, when entering the post-industrial stage with its emphasis on services, the need for a high rate of savings decreases, since the production of services is usually less capital-intensive compared to the production of goods, and investments in human capital are mostly considered in statistics as consumption expenditures. In addition, statistics also include the current account balance in savings, which is usually positive for commodity exporting countries.

The overwhelming part of savings goes to investment and partly to the export of capital, including replenishment of official reserve assets (see chapter “[Balance of Payments](#)”). The rate of investment (rate of gross capital formation) reflects investment in fixed assets plus an increase (decrease) in working capital stocks (if they are excluded, it is called the gross fixed capital formation rate). The investment rate in most countries (but by no means in all) is close to the savings rate. The difference between two rates is covered by net inflow (outflow) of capital abroad (from abroad) (see chapter “[Balance of Payments](#)”). Table 4 actually demonstrates that the net inflow of capital to the USA increases the rate of savings to a higher rate of investment in this economy, while in other economies it decreases.

Labor-related proportions are important for economic analysis. Firstly, this is the share of economically active population in the entire population of the country—the higher it is, the greater the contribution of labor to the economic development of the country can be. A large proportion of elderly people, caused by both an increase in life expectancy and a lagging retirement age, reduces this proportion in developed countries. The majority of the least developed countries are characterized by another problem—a large proportion of children and adolescents, caused by high fertility rates in these countries. Although the share of the working-age population is the

Table 4 Savings and investment rates in countries and regions of the world in 2021, % of GDP

Country and region of the world	Savings	Investment
Developed countries	24.1	22.5
incl. USA	20.0	21.4
Euro Area	26.4	22.8
Japan	28.1	25.2
Less developed countries	33.4	32.7
incl. China ^a	45.0	44.0
India ^a	31.0	29.0
Russia ^a	27.0	24.0
Brazil ^a	15.0	15.0
South Africa ^a	15.0	13.0

Sources IMF. *World Economic Outlook*, April 2022; World Bank Open Data

^a2020

highest in Asia, however, it is due not so much to a large birth rate as to a low life expectancy. In Europe, on the contrary, a high proportion of the working-age population is caused by a low birth rate (Table 5).

Another proportion related to labor resources is the unemployment rate, i.e., the share of unemployed in the economically active (working or looking for work) population. Historical statistics show that the tangible rate of unemployment can be seen in industrial and post-industrial countries, while in less developed countries it is absorbed by extensive agriculture and traditional services, turning open unemployment into the hidden one (as, for example, in India). Besides, the lack of a developed system of insurance and unemployment registration makes potential unemployed there to accept any job, primarily in the mentioned industries (Table 6).

An important economic proportion is the share of government spending in relation to the country's GDP. Along with the share of the public sector in GDP production, it shows the role that the state plays in the economic and social life of the country. One

Table 5 The age structure of the population in the world and its regions

Region	The entire population	Up to 14 years old inclusive	15–64 years old	65+ years old
Europe	100	16.1	64.8	19.1
North America	100	18.1	65.1	16.8
Latin America	100	23.9	67.1	9.0
Asia	100	23.5	67.7	8.9
Africa	100	40.3	56.1	3.5
Oceania	100	23.6	63.6	12.8
World	100	25.4	65.2	9.3

Source United Nations Demographic Yearbook 2020. New York: UN

Table 6 Unemployment rate in countries and regions of the world

Country and region	1913	1950–1973	1973–1998	2010–2013 ^a	2014–2019 ^a	2021
USA	4.3	4.6	6.6	8	5	5.5
Western Europe	1.5 ^a	2.9	7.1	12 ^b	10 ^b	7.8 ^a
Japan	–	1.6	2.3	4	3	2.8
China	–	–	–	5	5	4.8
India	–	–	–	4	3	6.0
Russia	–	–	–	6	5	5.0
Brazil	–	–	–	5	11	14.4
South Africa	–	–	–	22	26	33.6

Source Bolto, A. and Toniolo, G. (1999). “The Assessment: The Twentieth Century – Achievements, Failures, Lessons”, *Oxford Review of Economic Policy*, 15(4); World Bank Open Data. <https://data.worldbank.org/indicator>

^aEstimate; ^bEuro Area

Table 7 Government expenditure to GDP in developed countries, %

Country	1913	1938	1950	1973	2000	2014	2020
USA	8	20	21	31	32	38	46
Germany	18	42	30	42	47	45	51
France	9	23	28	39	54	57	62
United Kingdom	13	29	34	42	41	48	50
Japan	14	30	20	23	44	41	47

Source Maddison (2006); Bolto, A. and Toniolo, G. (1999). “The Assessment: The Twentieth Century – Achievements, Failures, Lessons”. *Oxford Review of Economic Policy*, 15(4); OECD.Stat

should look at this indicator in retrospect on the example of the leading developed countries (Table 7).

Table 7 shows an impressive increase in government spending in developed countries over the past hundred years. However, it should be borne in mind that this is a consequence not so much of the growth of state spending on the economy as of state social spending, primarily on human capital (education, healthcare, housing, science).

3.2 Macroeconomic Efficiency

Macroeconomic efficiency means obtaining the maximum possible benefits from the economic resources available at the country’s disposal. Macroeconomic efficiency is achieved by ensuring both cost efficiency (in which products are made with the lowest possible costs in the country) and resource allocative efficiency (a set and quantity of products made in accordance with the buyers’ needs, which gives the greatest return on the economic resources available to the country) and dynamic efficiency (the volume and structure of output are supported by appropriate investments and consumption). In economic theory, this corresponds to Pareto optimality, and for dynamic efficiency (the potential rates of economic growth). However, when analyzing the effectiveness in achieving the goals and objectives set for the country, the term “economic effectiveness” is used.

It is best to analyze the parameter T of the Solow model (i.e., the total factor productivity) to measure economic efficiency. However, in most countries, there are no systematic statistics on its size, and instead the statistics on its growth rates are published more often. According to the OECD, the average annual growth rates of aggregate factor productivity in 2001–2007 in the USA amounted to 1.4%, Germany to 1.1%, Japan to 1.1%, while in 2012–2019 they amounted to 0.3, 0.6, and 0.5, respectively; this means that this rate decreased.

Therefore, labor productivity (sometimes just productivity) is more often used as the most aggregated indicator of macroeconomic efficiency, i.e., the volume of GDP production (preferably in PPP terms) based on the number of employees, or (even

better) based on the number of hours worked. For example, in 2020, the GDP by PPP in the USA amounted to \$20,953.0 billion (according to the World Bank), and the average annual number of employed is 147.8 million people; therefore, labor productivity in the whole country for the year amounted to \$141,766. However, unregistered employment is high in the USA, and therefore the real number of employed people is several million more than the official figure.

In addition, this indicator in the countries exporting raw materials and fuel is derived from the volume of GDP, which depends on world prices of these export goods. Therefore, in such countries, it is better to consider labor productivity in the manufacturing industry.

The dynamics of labor productivity are also important. According to the World Bank, during 2001–2020, the index of GDP (in constant prices) per person employed in Brazil was 221%, and in Nigeria it was 296%: the average annual labor productivity rates in these countries were 4.3 and 5.9%, respectively. In developed economies, it grew by about 1% per year (which is two to three times lower than at the end of the twentieth and the beginning of the twenty-first century), but its growth is projected to accelerate in the current decade.

Indicators of the efficiency of capital and natural resources are widely used in macroeconomic statistics. These are primarily the indicators of the use of real capital, especially capital intensity, as well as indicators of material and energy intensity (materials- and energy-output ratio, materials- and energy-to-GDP ratio, materials- and energy intensity).

Capital to GDP ratio at the macroeconomic level is defined as the ratio of the cost of fixed capital to the volume of GDP. For example, in 2020 in the USA, the volume of fixed assets amounted to \$65,150.3 billion and the aforementioned ratio was 65,150.3: 20,953.0 = 3.11. Therefore, the production of \$1 of the GDP in the USA required \$3.12 of fixed assets.

Material consumption throughout the economy is difficult to calculate due to the large nomenclature of raw materials and other materials used. Therefore, in practice, such indicators of material intensity as the consumption of steel, cement, timber, etc., per unit of GDP are used.

The energy intensity of the national economy is usually calculated as the ratio of the volume of primary energy consumption (in tons or kilograms of oil equivalent—*toe* or *koe*) in relation to GDP, preferably by PPP). Its inverse indicator is energy intensity (energy-output ratio, energy-to-GDP ratio), which is calculated as the ratio of GDP to physical volume to the volume of primary energy consumption to GDP. International comparisons give a very motley picture of energy intensity: in the past decade, in Canada, \$5.7 of GDP by PPP was produced for every kilogram of oil equivalent consumed, \$7.8 in the USA, \$18.0 in Malta, and \$26.8 in Hong Kong, which speaks not so much about the efficiency of energy consumption in Malta and Hong Kong as about the presence or absence of energy-intensive industries in the country, as well as about the difference in climate—otherwise in the last two countries energy intensity would not be much better than in the USA and Canada.

Therefore, it is better to compare the dynamics of energy intensity than cross-country energy output (energy intensity of energy output) in the country. For example,

in 2000–2020, energy intensity in the world decreased at an average annual rate of 1.4%, but this was primarily in developed countries.

One can also try to measure the efficiency of the country's economic model (see chapter “[World Economy Major Trends: Evolution of National Economic Systems](#)”), if it is compared with the economic models of the countries of a similar level of development in the three areas: the pace of economic growth, improving proportions, and improving the level and quality of life.

4 Macroeconomic Forecasting

4.1 *Macroeconomic Forecasting and Its Main Methods*

The exact information about the future is unknown, especially in the conditions of the new normal (see chapter “[World Economy Major Trends: New Normal, the Forth Industrial Revolution, Globalization, Sustainable Development](#)”), but economic agents all over the world have to make decisions now, the result of which will be known only in the future. Whether signing in the beginning of the year a contract for the supply of goods at the end of the year, enrolling in a university to receive a diploma in a few years, or making investments to produce products in ten years, all economic agents have to act in conditions of economic uncertainty, i.e., the lack of information about the future. To overcome it, economic forecasting is used. It implies scientific foresight in the form of forecasts (Summers 2015).

Forecasts (scenarios, projections) are very different, but this book mainly deals with macroeconomic and global forecasts of economic growth. They can be short-term (for a year or two), medium-term (up to five or seven years), or long-term (from five–seven years to several decades).

Macroeconomic forecasts are compiled by analytical organizations, large companies and banks, ministries and departments, international organizations, universities, and individual economists. Various methods are used for forecasting, often in combination:

- a method of analogies based primarily on the extrapolation of trends. The future is formed under the influence of the same trends that existed before and during the preparation of the forecast. Extrapolation is the main method for short-term forecasts, but it does not suit for the medium- and long-term forecasts;
- the scenario method. There are usually three possible scenarios at the same time: optimistic, pessimistic, and the most probable between them (baseline). Consumers of forecasts should be guided by the latter scenario, but be prepared for pessimistic and optimistic scenarios;
- expert assessments. To make judgments about the future, numerous experts are involved, who make their own forecasts, which are then generalized (the Delphi

method). The most extreme of individual judgments are usually not taken into account (consensus forecast). Sometimes the forecast is made by hundreds and thousands of experts (foresight method), and sometimes even by one;

- building a goal tree. This method takes into account the numerous connections between the elements of the forecast by comparing the benefits and risks of alternative decisions that may be taken in the future;
- modeling—primarily the mathematical method. This is based on cross-sectoral input–output tables, multiple regression analysis, game theory, and other mathematical methods;
- connecting different forecasts. The average value of forecast indicators is output on this basis.

4.2 Short-Term Forecasts

The short-term macroeconomic forecast is most often based on how the components of GDP by expenditure will change: final consumption expenditures (total domestic demand), gross capital formation, net exports of goods and services (foreign balance). Knowing the specific weights of these components in GDP for the previous year and having survey data and statistical data, one can predict the growth (reduction) of these components for the next year and obtain the forecasted GDP growth for the next year on this basis (Table 8). Note that the short-term forecast does not use changes in economic factors and aggregate factor productivity—they change little over the short-term period.

Table 8 GDP growth forecast for developed countries for 2023

GDP and its components	Growth, %
GDP in constant prices	1.1
Real total domestic demand	1.0
Incl. private consumer expenditure	1.2
public consumption	0.7
Gross fixed capital formation	1.3
Stock building	−0.1
Foreign balance (net exports of goods and services)	0.2

Source IMF (2022). *World Economic Outlook*. October

4.3 Medium- and Long-Term Forecasts

These forecasts are made on the basis of those changes that may occur with the factors of economic growth and their effectiveness. They are calculated on the basis of the economic growth models and forecasting methods described above (Table 9).

An example of a long-term forecast can be the one made by the OECD a few years ago for a very long-term perspective (see Table 10).

Table 9 World GDP mid-term growth projections

Parameter	2023	2027
Global GDP growth rates, %	2.7	3.2
incl. advanced economies	1.1	1.7
emerging market and developing economies	3.7	4.3

Source IMF (2022). *World Economic Outlook*. October

Table 10 Baseline projection of GDP volume, \$ mln at constant 2015 PPP

	2010	2030	2060
World	77,466	141,996	237,831
OECD countries ^a	48,795	70,076	101,940
USA	16,319	24,302	36,527
Euro Area (17 countries)	13,349	16,891	23,010
Germany	3569	4566	5891
France	2580	3267	4736
Italy	2316	2499	3366
Japan	4935	5632	6333
Non-OECD countries	28,611	71,920	135,891
China	12,158	36,976	62,140
India	5103	16,603	42,204
Russia	3237	4233	5340
Brazil	2850	3750	5746
Indonesia	2023	5309	12,320
Saudi Arabia	1200	2009	3066
Argentina	806	1034	1685
South Africa	622	954	2074

Source OECD *Economic Outlook*, #109, October 2021. https://www.oecd-ilibrary.org/economics/data/oecd-economic-outlook-statistics-and-projections/long-term-baseline-projections-no-109-edition-2021_cbdb49e6-en

^aIncluding Chile, Columbia, Costa Rica, Mexico, Turkey as OECD member-countries

5 Conclusions

1. The economic development of a country is a process that encompasses economic growth first of all, as well as improvement of proportions in the economy, and improvement of the standard and quality of life. Economic development does not always follow an ascending line, but can be contradictory and even backward. Economic growth is analyzed mostly because it usually leads to the progress of other elements of economic development in the long run.
2. Economic growth occurs due to the use of economic resources (economic growth factors). In the nineteenth to twentieth centuries, most economists counted labor resources (labor, in terms of economic theory), natural resources (land), capital (both real and financial), and entrepreneurial resources (entrepreneurship) among them. In recent decades, a fifth resource has been increasingly added to these four ones—knowledge—which has already become the main factor of economic growth in developed countries. Economic growth models have been created based on the concept of economic growth factors.
3. The growth of national economies is unstable both in the short term (by quarters), in the medium term (by years), and in the long term (by decades). Moreover, it is accompanied by crises.
4. The acceleration of economic growth observed in recent centuries was primarily based on new knowledge obtained by science. Another important reason for this acceleration was globalization. By promoting the growth of the most competitive goods and services on the world market, and stimulating the movements of economic resources around the world, it accelerates economic growth in those countries actively participating in globalization.
5. Economists are interested in the proportions into which the GDP of the world, regions, and countries is divided, which helps them to better analyze the structure of GDP. Most significantly, these are the sectoral proportions of GDP, the share of savings and investment in GDP, the ratio of government spending to GDP, the share of the economically active population, and the unemployment rate. When analyzing the current economic situation, indicators of economic conditions are used.
6. Economic efficiency is getting the maximum possible benefits from the economic resources available to the country. One should analyze total factor productivity to measure macroeconomic efficiency. However, in most countries, there are no systematic statistics on its magnitude; therefore, labor productivity is usually used as the most aggregated indicator of macroeconomic efficiency. The indicators of the efficiency of capital and labor use of natural resources are widely used in macroeconomic statistics.
7. The short-term macroeconomic forecast is most often based on how the components of GDP by expenditure will change. Medium- and long-term forecasts are made on the basis of those changes that may occur with the factors of economic growth and their effectiveness. They are calculated using economic growth models and a variety of forecasting methods.

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World Economy Major Trends: New Normal, The Fourth Industrial Revolution, Globalization, Sustainable Development



Alexander Bulatov and Boris Kheifets

Abstract This chapter describes the main trends of economic development that are characteristic of most countries of the world in the first decades of the twenty-first century; the New Normal, the Fourth Industrial Revolution, globalization and the transition to sustainable development. At the same time, special attention is paid to globalization.

1 Introduction

This chapter describes the main trends of economic development that are characteristic of most countries of the world in the first decades of the twenty-first century; the New Normal, the Fourth Industrial Revolution, globalization and the transition to sustainable development. These trends are equivalent and interrelated, but the chapter begins with the New Normal as the one that is most closely related to the rest. Special attention is paid to globalization based on the profile of this book.

2 The New Normal

The concept of a “New Normal” (New Normality, New Reality) appeared in the 1930s in the USA during the Great Depression, when the economy and society were adapting to its consequences. This term became widely used again after the crisis of 2008–2009, when it became clear that the world economy was facing new phenomena—a slowdown in economic growth, a slower than expected pace

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of the Fourth Industrial Revolution, a change in the nature of globalization and growing environmental problems. This term acquired another shade as a result of the coronavirus pandemic in 2020–2021 and warfare in Ukraine in 2022. Therefore, the New Normal should be considered one of the main trends determining the modern development of the world economy.

One can interpret the New Normal in a general and concrete sense. In a general sense, this is the mass emergence of new phenomena that are sharply different from the previous ones (“what used to be unusual has become ordinary, normal”). In a concrete sense, it is a decrease in predictability, leading to an increase in uncertainty and the resulting instability (volatility) of the economic agents’ behaviour. In the New Reality, they are faced with a lot of new phenomena, the development of which is difficult for them to predict, and therefore the level of uncertainty that has developed in their previous life is sharply increasing, and their behaviour is increasingly becoming uncertain. What should households expect from future changes in the labour market (should they urgently retrain for new professions, and which ones?), what should firms expect from new phenomena in the economy (will digital platforms capture new industries for them or try to become such a platform in their industry themselves?), how can the state anticipate the development of the economic situation in the conditions of increased instability of the global economy, will climate warming and environmental degradation continue and how should we respond to it?

At the same time, as usual in conditions of increased uncertainty and volatility, the behaviour of economic agents is even more strongly influenced by non-economic factors—political, social and cultural. Should the dominance of liberal ideology weaken or not? How will the political confrontation of the USA, Russia and China affect the global economy? Should social tension increase if mass unemployment grows as a result of replacing a number of professions with robots and artificial intelligence, or should this tension be reduced (at least in developed countries) by paying all non-working citizens an acceptable basic income? Should interest in work remain a cultural habit in developed countries, or should it be replaced by an increased interest in leisure? How can less developed countries address the problems of poverty, health and education in the face of increased uncertainty?

2.1 The Impact of the New Normal on the Behaviour of Major Actors of the World Economy

The growing uncertainty of the economic agents’ behaviour in the conditions of the New Normal makes it difficult to assess at least the most general prospects for the behaviour of the main actors of the world economy, but such an attempt can be made. National economies will remain the main subjects of the world economy in the foreseeable future (there are no signs that they should be displaced by other actors in recent years). However, their interest in the global economy may decrease. The new reality has demonstrated not only a slowdown in the pace of globalization, but

also increased risks of participation in it (the pandemic of COVID-19 has shown the vulnerability of global value chains, trade wars reduce the flow of goods, services and capital). In these circumstances, we should pay greater attention to the reliability of markets in order to reduce risks. Large economies (namely, they define the face of globalization) should pay attention to their own market first, and only then to the global market, the markets of those countries with which they have joint integration associations or regional trade agreements. Therefore, it can be assumed that the interest of large economies in globalization will not grow, and perhaps even weaken in the conditions of the New Normal. However, such a conclusion can be contrasted with the fact that globalization in the field of knowledge exchange and international labour migration continues to grow, as well as the fact that, China, the largest economy in the world, considers globalization as a process running parallel with the growing attention of China to its domestic market.

Integration associations—these important actors of the world economy—are likely to develop, although it may happen more slowly than before. Large economies are still interested in expanding sales markets through economic integration with other countries, while small countries participating in integration associations with their small domestic markets are even more interested in this, although their economic interest in integration associations does not always coincide with the political, social and cultural views of their population and leaders. For these reasons, old and new integration associations are likely to be increasingly multi-level and multi-speed, like the Eurozone within the EU. In the conditions of the New Normal, this should help different countries, while remaining members of integration associations, to participate there more actively or passively, depending on how the economic, political, social and cultural situation develops in these countries. New trends in integration will also contribute to such flexibility (see chapter “[World Economy Major Trends: International Economic Integration](#)”).

Multinational enterprises (MNEs)—the most active subjects of economic globalization—should expand the network of their foreign branches less actively in the conditions of the new reality. If in the 1990s–2000s the volume of value added produced at their foreign branches increased from 6 to 10% of world GDP, then in the second half of the 2010s this share was at the level of about 8%. It can be assumed that in conditions of unstable global value chains, the declining importance of saving on cheap labour, reorientation from producing goods to services and multinational enterprises should increasingly rely on the supply of goods, services and information from their countries, and many their branches in large foreign economies should supply their products mainly to domestic markets.

Although another subject of the world economy—international economic organizations—is considered by neoliberal economic theory as an actor whose importance should increase, it no longer looks so obvious in the conditions of the New Normal. The WTO’s failures in conducting the last Doha round of multilateral trade negotiations (see chapter “[Multilateral Trading System and Global Trade Regulation](#)”), the IMF’s not always a successful policy of supporting the economies of less developed countries, the inability of international economic organizations to prevent trade wars and global economic crises are attracting increasing criticism. It is hardly necessary

to count on their increasing importance under these conditions. It is the importance of international political, social and cultural organizations that should grow. They should be increasingly in demand in the face of increasing global risks—nuclear war, climate change and new pandemics that cannot be solved at the national level.

3 The Fourth Industrial Revolution

The First Industrial Revolution, which started after the steam engine and railways appeared, took place from the 1750s to the 1900s. It created an industry based on machines. The Second Industrial Revolution, which gave an emphasis on the use of electricity and the conveyor, started in the 1900s and lasted until the 1950s. It resulted in mass production. The Third Industrial Revolution was connected with computers. It began in the 1950s and went on until the early 2000s. It involved the active use of electronics and information technology. The recently launched Fourth Industrial Revolution (“Industry 4.0”) relies on digital technologies and creates a world of smart and interconnected machines.

3.1 The Main Features of the New Industrial Revolution

According to Klaus Schwab, one of the top ideologists of the Fourth Industrial Revolution, its megatrends in the physical sphere are 3D printing, advanced robotics, unmanned vehicles and new materials, the Internet of Things, blockchain and digital platforms in the digital sphere and genetics in the biological sphere (Schwab, 2016). Other researchers add megatrends such as big data, artificial intelligence, environmental management and energy consumption, as well as pandemic prevention.

However, sceptics doubt that a revolution is taking place. They suppose that it is just a development of the Third Industrial Revolution. They point out that the scientific and technological progress is even slowing down (which is confirmed by a drop in the rates of total factor productivity and labour productivity—see chapter “[Developed Economies as a Group](#)”). Their opponents object that this is a consequence of the cheapening of many goods and services as a result of the new industrial revolution, which distorts productivity statistics.

This book offers a compromise point of view—the Fourth Industrial Revolution is just beginning, and therefore its fruits are not always abundant and statistically visible.

3.2 Its Impact on the Global Economy and International Business

If we try to assess the impact of the new industrial revolution on the world economy, then it affects consumption as follows:

- new relatively inexpensive consumer goods and services reduce the cost and expand consumption in general;
- digital technologies allow firms to adapt to the preferences of local consumers (customization);
- consumption patterns change through access to digital platforms: purchases via the Internet, the purchase of services instead of goods (for example, through car sharing).

The new industrial revolution mainly affects the industry in the following manner:

- the cost of goods and services for investment purposes is reduced, which decreases the capital intensity of investments. For this reason, the Fourth Industrial Revolution does not radically increase the rate of gross accumulation (as happened during previous industrial revolutions);
- the change in the life cycle of the company and its structure is more rapid, giving an advantage to the most innovative companies, primarily based on digital platforms. These companies, instead of traditional outsourcing, use a single digital workspace for themselves and partners, primarily in order to reduce transaction costs (examples include Uber, Coursera and online stores);
- financial transactions, settlements and tax collection are increasingly carried out, not through banks, but through the blockchain. It is also used in insurance and accounting, audit and consulting. This may undermine the role of banks and these companies in the economy; and
- the sphere of the circular economy is expanding, i.e., the focus should move to the production that minimizes environmental pollution, including through the renewal of natural resources, the processing of secondary raw materials and the use of renewable energy sources.

There is also an impact on the social sphere:

- the relative cheapness of new technology pushes manufacturers to replace labour with machinery (capital). As a result, the share of capital owners in national income is growing, the share of wages for employees is decreasing and inequality between them is increasing, including among employees themselves due to remuneration to the most sought-after and talented (“stars”);
- the new industrial revolution may increase technological unemployment after displacing labour by capital (smart machines). The opponents object that such fears arose at the beginning of all previous revolutions, but were not justified due to the fact that the workforce was retrained. So far, the statistics are more on the side of the opponents; and

- based on the displacement of labour by capital, acceleration of the life cycle of companies and changes in their structure, there is a shift from long-term relations between companies and their employees to short-term ones, i.e., without registration of temporary employees of companies as employees. This transforms their significant part into the precariat, i.e., people with permanent, partial or temporary employment and unstable social status.

As for international business, the Fourth Industrial Revolution affects it as follows:

- a significant part of labour-intensive production, previously transferred by MNEs to less developed countries, is slowly returning to developed economies, since now, due to a decrease in the share of labour in the product manufacturing, the cost of labour is becoming less important. In the future, this process is expected to accelerate due to the localization of production closer to consumers and using 3D printers. As a result, there is a stagnation in the export of direct investment, primarily from developed countries—the main exporters of this capital;
- there is a decrease in the growth rate of world trade in goods due to the reduction (shortening) of global value chains (see chapter “[Global Value Chains](#)”). This is due both to the rescheduling and the greater orientation of the links of these chains in less developed countries to local consumers, whose demand is growing as the level of economic development of these countries increases. Besides, a part of the international trade in goods is being displaced by digital trade (due to the exchange of data, not goods);
- international labour mobility is increasing due to cheaper transportation costs, although at the same time, the remote employment rate is growing.

4 Globalization

After the global financial and economic crisis of 2008–2009, it became increasingly common to talk about a gradual slowdown in economic globalization or even its decline. To denote these processes, a new term “deglobalization” appeared; the COVID-19 pandemic has significantly slowed down many globalization processes, increasing the number of those supporting deglobalization.

Recall that the term “economic globalization” became widely used in the 1980s to denote the new state of the world economy, when the liberalization of capital controls in many countries began to rapidly increase cross-border capital flows, contributing to the growth of flows of goods and services. The term “economic globalization” used in the 2000 IMF report “Globalization: Threat or Opportunity?” refers to the increasing degree of integration of countries around the world, primarily due to trade and financial flows. Sometimes globalization also means the movement of people (labour) and knowledge (primarily technology) across international borders.

In the scientific literature, two different positions can be distinguished about the “origin” of economic globalization. One group of authors considers the 1980s to be the beginning of globalization (some works also include the 1970s). They consider

the globalization process as a new stage of internationalization of economic life, due to a fundamentally different quality of interconnection and interdependence of national economies. At the same time, comprehensive works appeared exploring globalization, not only in the economy, but also in the social sphere and politics.

Another position is that globalization began to develop 100, 200 or even 400–500 years ago, since the time of the Great Geographical Discoveries (late fifteenth to mid-seventeenth centuries). This position is based on the bursts of international trade and the expansion of its geographical borders, and even the development of cross-border financial transactions during the rapid development of capitalism. But the proponents of “early” globalization do not take into account the new quality of internationalization of economic life of the last 40 years, during which the market economy has become a universal form of organization of economic life for the vast majority of countries. Besides, a number of problems (climate change, environmental pollution, growing socio-economic inequality, debt crisis, food shortages, etc.) have become global in nature. Only as a result of globalization has it become possible to create the UN global programme “Sustainable Development Goals” for the period up to 2030 (2015, 193 countries), the Paris Agreement on Climate Change Mitigation (2015, 197 countries), the global minimum corporate tax (2021, 137 countries), etc. Finally, the institutional structure of the world economy itself has changed, when, along with national states, MNEs have become the most important subjects of international relations, international organizations and regional associations, SMEs and people interacting with the global economy through goods, services, investments, information, education, tourism, etc.

It is in recent decades that globalization has had a strong impact on world development. According to estimates by the McKinsey Global Institute, global flows of goods, services and investments in the 2000s annually added from 15 to 25% to the overall growth of the global economy. At the same time, the largest gain (up to 40%) was received by the states most actively involved in these processes.

To assess the nature and dynamics of the processes of economic globalization, one has to know the indicators that characterize them.

4.1 Indicators of Globalization

There are two groups of such indicators: calculated and estimated ones.

An indicator reflecting the ratio of the volume of exports of goods and services (imports, foreign trade turnover) to the country’s GDP is popular in the first group. Moreover, one should calculate the GDP indicator rather using PPP than the exchange rate (i.e., on the basis of world prices close to export and import prices). A more accurate picture is given by national accounts, in which the volumes of exports and imports of goods and services are given in domestic prices, i.e., in the same ones in which the entire volume of products produced and consumed in the country is calculated.

Another calculated indicator is the ratio of cross-border financial flows (in general or by main forms—direct or portfolio investments, debt obligations, derivatives, etc.) to GDP. There is also another option—the ratio of foreign investment (already accumulated in the country or abroad) to GDP.

Calculated indicators of globalization can also include individual data characterizing the development of international production. For example, this will be the number of MNEs and their foreign affiliates, the number of international mergers and acquisitions, the share of output, the share of employees and the share of sales of foreign branches in the total result of MNEs activities. Another area of assessing globalization is the indicators of people's cross-border movement, including tourists, labour resources, students, specialists, refugees, etc.

The second group of globalization indicators includes composite evaluation indicators based on a comprehensive assessment of various indicators characterizing the degree of interconnectedness of individual states. Based on this analysis, country ratings are compiled. They are calculated by individual reputable organizations, for example, KOF Globalization Index, Kearney/Foreign Policy Globalization Index, DHL Global Connectivity Index, CSGR Globalization Index, etc.

For example, the KOF Globalization Index covers the economic, social and political aspects of globalization. All index indicators form three main groups of global integration: (a) economic globalization, which is characterized by flows of goods, capital and services over long distances (the amount of exports and imports of the country FDI and portfolio investments), the amount of information that accompanies market exchanges, as well as the level of restrictions on trade and investment (tariff and non-tariff restrictions); (b) social globalization, characterized by the level of cultural proximity (the number of IKEA stores and McDonald's restaurants located in the country), personal contacts of citizens (international telecommunication traffic in minutes per subscriber, the average cost of a call in the USA, tourism, the volume of information flows per 1000 people: the number of Internet hosts and users, cable TV subscribers, the number of telephone lines, the number of radio stations, daily newspapers); and (c) political globalization, determined through the membership of countries in international organizations, participation in international missions (including UN missions), ratification of international multilateral treaties, the number of embassies and foreign missions in the country, etc. The KOF Globalization Index is calculated as the sum of these components with weighting coefficients of 36, 39 and 25%, respectively.

4.2 The Main Trends of the Modern Stage of Globalization

There were serious reasons for the point of view about deglobalization to appear. They are associated with a slowdown in the most important interstate flows of assets, primarily goods, services and capital, after the global crisis of 2008–2009. The global economic crisis of 2020 has added new arguments for deglobalization.



Fig. 1 GDP and trade in goods and services in the global economy, % (Source IMF. *World Economic Outlook*. October 2022)

Since 2009, one can observe a slowdown in the dynamics of foreign trade, which in general grew slower than GDP. At the same time, there was only a small period of post-crisis recovery in 2010–2012, after which low rates of world trade prevailed or even its reduction (2019), even before the corona crisis of 2020 (see Fig. 1).

Although global GDP and world trade then recovered, according to the IMF forecast (January 2022), this trend will slow down again in 2022–2023, and the world trade’s growth rate will be only slightly higher than GDP growth, which indicates a slowdown in globalization.

One could also witness a significant reduction in cross-border capital flows, including FDI, bank loans and the purchase of stocks and bonds after the global crisis of 2008–2009. These financial flows decreased by almost 50% in 2008–2019, although there were separate attempts at growth in 2014 and 2017. Half of the decrease in capital flows was due to a sharp reduction in cross-border lending and other cross-border banking operations. The crisis of 2020 has negatively affected the movements of financial assets.

Global FDI, which has not been able to exceed its maximum level in 2007 for 10 years, is indicative in this regard. Similar negative trends are observed in cross-border mergers and acquisitions, as well as in announced investment in new assets, which can be used to judge investment prospects, due to the continuing high uncertainty about the future growth of the global economy (see Fig. 2).

COVID-19 is expected to provoke a reassessment of MNEs’ value chains in terms of supply reliability, with a change in the strategy of “cost reduction” to the strategy of “ensuring supply stability” and transferring their production activities closer to the sales markets.

As for another cross-border flow—the movement of people, there were different trends for international tourists and migrant workers. Until 2020, all these flows grew steadily, but with moderate growth rates. However, COVID-19 has brought down international tourism: in 2020, the number of international tourist arrivals (overnight visitors) was 73% lower than in 2019, and only in 2021 a slow recovery began—415 million against 400 in 2020. In 2020, the growth in the number of international

migrants did not decrease, but noticeably slowed down. Their number amounted to almost 281 million people (of which almost two-thirds are migrant workers), but this is still a very small percentage of the world’s population (see Fig. 3)

The most important reason for the slowdown in world trade and investment was growing national protectionism. According to Global Trade Alert estimates, more than 30,000 restrictive measures in international trade have been taken from November 2008 to January 1, 2022, while the number of liberal measures amounted

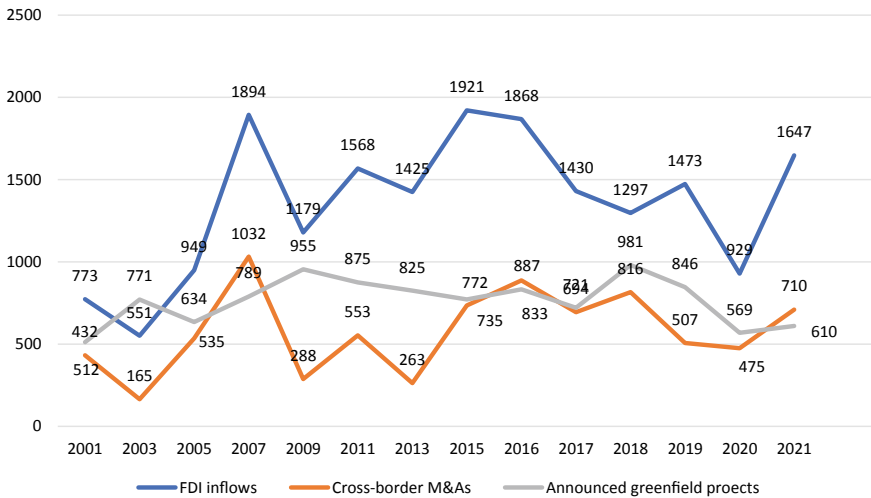


Fig. 2 Foreign investment in the global economy, billion dollars (Source UNCTAD [2022]. Global Investments Trends and Prospects)

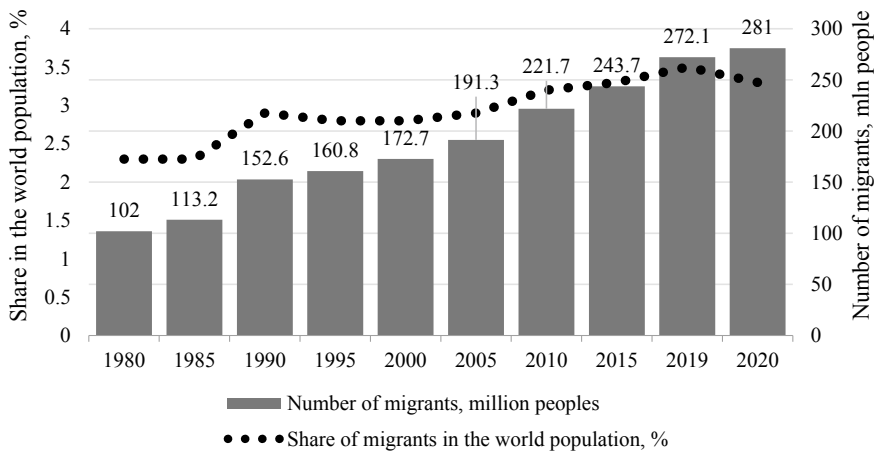


Fig. 3 International migration in 1980–2020 (Source IOM [2022]. World Migration Report)

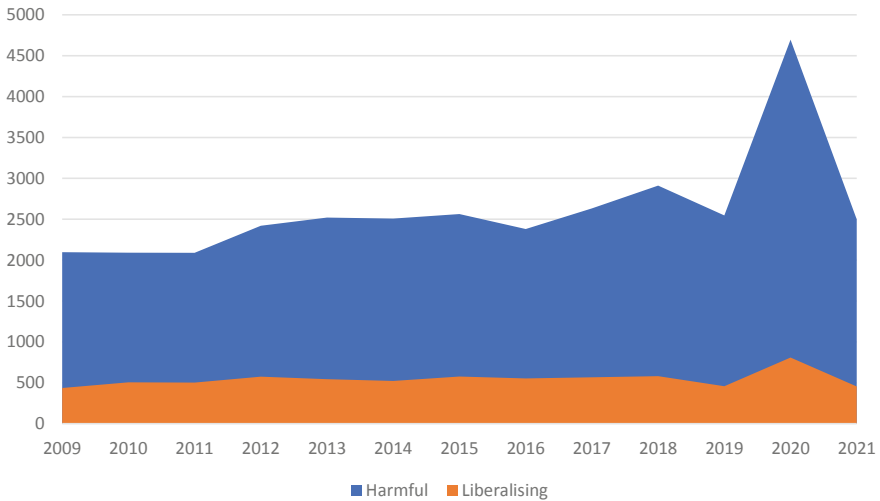


Fig. 4 Restrictive and liberal measures in world trade in 2009–2021 (Source Global Trade Alert, 2022)

to a little more than 7000. At the same time, the number of restrictive measures increased dramatically during the crisis of 2020 (see Fig. 4).

Economic, trade, technological and sanctions wars, which hindered the development of mutually beneficial trade and other globalizing ties, became a new, and rather important phenomenon that manifested itself in the 2010s. Unlike conventional protectionism, economic wars cause serious damage to the economies of the countries involved in such conflicts. They affect several spheres of economic interaction and extend to a wide range of economic actors.

There are several reasons that contributed to accelerating these trends:

- the transition of the leading countries of the world to a new model of socio-economic development, when the more efficient use of domestic resources and national security, as well as stimulating domestic demand, come to the fore;
- support of national business by imposing restrictions on foreign companies and simultaneously reducing taxes and applying other norms to stimulate national business, the more intense fight against illegal capital export and tax evasion, conducting anti-import structural and foreign economic policy;
- dissatisfaction with the activities of international institutions such as the WTO, the IMF and the World Bank, and uncertainty about the development of international trade and investment policy frameworks; and
- the growth of geopolitical tensions associated with a change in the alignment of economic forces and the redistribution of spheres of influence in the global economy and a noticeable acceleration of the arms race.

A new factor for strengthening the priorities of the national market is also the growth of demand in less developed countries, which is expected to amount to 50%

of the global total by 2030. Therefore, many companies in these countries that used to work for export will reorient to the domestic market. Since 2021, China has been pursuing such a policy, which has set the task of improving the standard of living of the population through the development of high-quality domestic consumption, including through reorienting a number of export-oriented industries to the domestic market (dual circulation strategy).

The slowdown in the trade and investment flows has another objective reason. This is the development of new technologies in production and services, which allows the reduction of the costs of natural resources and energy, ensuring higher productivity and security of economic activity, changing perceptions about the effective scale of production and logistics needs. In the modern world, there is a tendency to move production closer to the main consumer markets, such as the USA and the EU. For example, Adidas and Nike have developed new lines of sports shoes the production of which can be fully automated, and they have opened these new factories in Germany, the USA and Mexico. American General Electric, Apple, AT&T, Caterpillar, Whirlpool, Verizon and many other companies have abandoned their overseas branches. This trend has been called reshoring (the return of MNEs “to their native shores”). According to PwC estimates published in 2021, outsourcing has the potential to increase annual production volumes in the G7 countries by \$136–272 billion within the next decade. The increase in annual production is equivalent to the return of 0.6 to 1.2 million jobs to the G7 countries, most of which will be in Germany and the USA.

The McKinsey Global Institute predicts that automation, artificial intelligence and additive technologies can reduce global trade in goods by more than 10% by 2030. ING Bank predicts that 3D printers alone can increase the industrial production of local goods and contribute to a 40% decline in world trade by 2040. In this regard, the strategies of “lightweight assets” are being developed, thanks to which MNEs, can use digital technologies to carry out economic activities abroad without significant investments. In addition, the incipient decarbonization of the economy, the purpose of which is to prevent an increase in the average global temperature of more than 2 degrees Celsius, the introduction of a carbon tax on imports (instead of inefficient quotas for CO₂ emissions) and the development of green energy, can significantly reduce the demand for fuel and raw materials and products of metallurgy and metalworking, which account for a significant part of world trade.

All this strengthens the positions of opponents of deglobalization, who argue that we can see the slowdown in the traditional areas of globalization due to its transition to a new stage of development. This stage is often called “Globalization 4.0”, which indicates its relationship with the rapid progress since the beginning of the fourth Industrial Revolution in the 2010s. Globalization 4.0 is characterized primarily by the development of internetization and digitalization of the economy, which contribute to the introduction of revolutionary technological innovations. That is why new indicators have become increasingly used to characterize modern globalization. They include the volume of cross-border traffic of information flows (Internet and telephone communications, including mobile communications), the volume of

Internet commerce, the level of international cooperation in research and development, the number of Internet users and subscribers of social networks, etc. The diagram, compiled by DHL experts, illustrates the new trends in globalization (see Fig. 5).

The Internet and digitalization create specific supply chains in all sectors of the global economy that overcome cross-border barriers with minimal costs. Emerging new G5 and G6 mobile communication technologies, along with quantum technologies and artificial intelligence, create fundamentally new opportunities to increase reliability and productivity, develop and localize production and reduce communication costs.

If in 1995 there were 15 million Internet users (0.39% of all people on the earth), in 2007 there were 1.15 billion (17.2%), then by January 1, 2022 there were 4.9 billion users (63% of all people). At the same time, 90% of the population used the Internet in developed countries, and 57% in developing countries. The largest number of Internet users was in China—854 million people, India—560 and the USA—313 million people. In addition, the COVID-19 pandemic contributed to a sharp increase in Internet bandwidth, which increased by 35% in 2020. The monthly volume of global data traffic is expected to increase from 230 exabytes in 2020 to 780 exabytes by 2026.

Thanks to the rapid development of mobile communications (in 2021, 5.2 billion people, or almost 67% of the world's population, used a mobile phone), not only a convenient means of communication, including cross-border, appeared, but also the possibilities of using various types of remote services (financial, trade, transport, information, educational, consulting, entertainment, etc.) expanded. COVID-19 opened a new era in remote work, which has reached global scale.

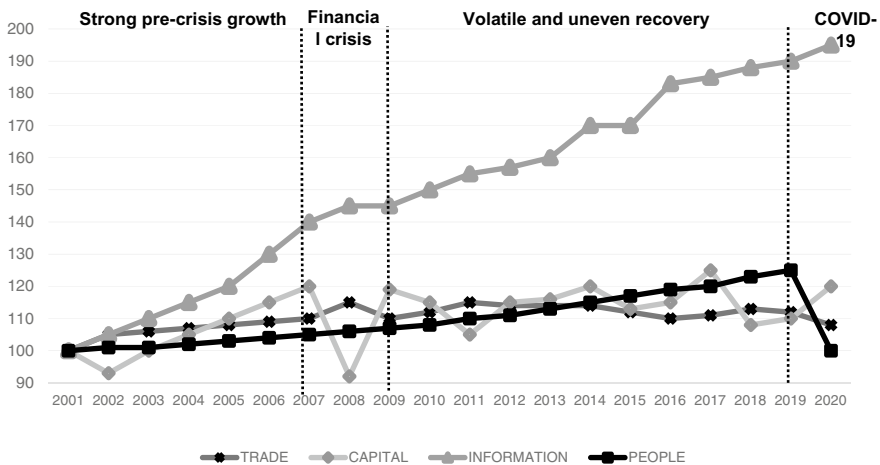


Fig. 5 Various cross-border flows, 2001 = 100% (Source DHL [2021]. Global Connected Index)

There are also cost estimates of the new wave of globalization. According to one forecast, cross-border Internet flows may cost more than the current global trade in goods, or about \$20 trillion by 2025. The global Internet of Things market is expected to grow from \$151 billion in 2018 to \$1567 billion in 2025.

Social networks have begun to play a special role in the new stage of globalization. They are used by 54% of the world's population, 98.8% of whom use mobile devices. Facebook, Instagram, YouTube, Facebook Messenger, WhatsApp, WeChat and TikTok are the leaders of the digital platforms which had over 1 billion active users on January 1, 2022. It exceeds, or is comparable to, the population of the largest countries in the world (see Fig. 6). This allows us to use these platforms for developing various economic and information ties between countries, which contributes to the consolidation of the consumers who are becoming the most important subjects of the new globalization.

In 2021, over 19% of international trade in goods and about 50% of trade in services were carried out via the Internet. The volume of online retail sales in 2016–2019 grew by an average of 20% per year, while traditional retail sales increased by only 3.5% per year. A huge leap in online commerce was observed in 2021, when its volume reached \$4.9 trillion, and by 2025, it is expected to increase to \$7.4 trillion, i.e., by 50%. Its main markets are the USA, China and the EU (Fig. 7).

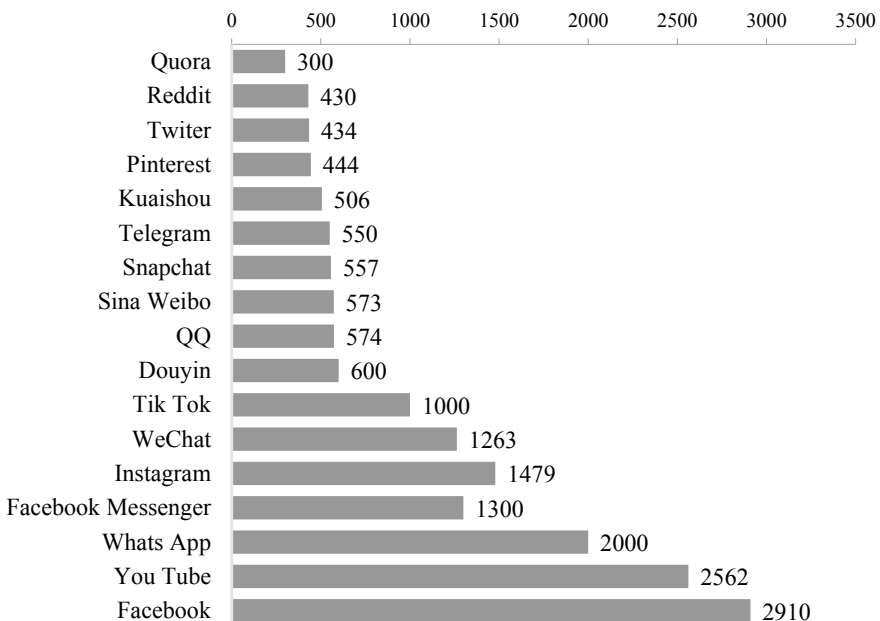


Fig. 6 Number of users of popular social networks, as of January 1, 2022, million people (Source Statista, 2022)

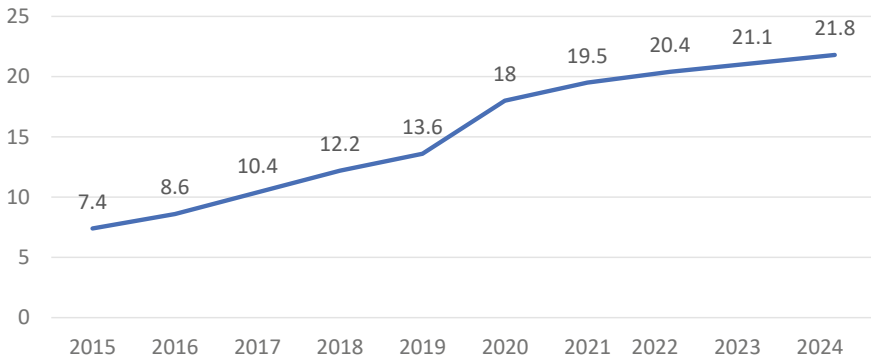


Fig. 7 The share of e-commerce in global retail, % (Source Statista, 2022)

Online commerce is increasingly replacing traditional international trade. Already more than 50% of online buyers in the Middle East, Africa, Europe and Latin America choose products from foreign websites. 1000 of the largest online stores in North America sell goods worth \$143 billion to customers outside the USA. At the same time, Amazon’s share in these international sales was 44%. Two-thirds of retailers believe that cross-border e-commerce is the most important source of future growth for their company, as it provides many international customers.

Surveys show that almost 50% of Internet users turn to social networks when information about goods or services that need to be purchased is collected. In 2019, 90 million small and medium-sized enterprises posted marketing information on the Facebook platform (in 2013 there were about 25 million; that is, an increase of 3.6 times over 6 years), while a third of their potential consumers are foreign ones. Facebook, with more than 80 million business pages, is used by 87% of American marketers, and 44% of users admit that their shopping behaviour is influenced by Facebook.

The main providers of the e-commerce market—Alibaba, Amazon, eBay, Flipkart and Rakuten—have given tens of millions of small and medium-sized enterprises around the world access to foreign markets. More than 80% of technological startups conduct cross-border activities. According to experts of the Alibaba Group, if earlier international trade was predetermined by about 65,000 MNEs, in the next 50–60 years, there will be 60 million small and medium-sized businesses that will work via the Internet, and they should occupy the leading place in the world. The labels “Made in China” (Japan, India or the USA) will be replaced by the label “Made on the Internet”.

At the same time, the pandemic has played a positive role in this area, significantly increasing the volume of interstate traffic through the Internet and other communications channels. During this period, social networks, e-commerce companies and new platforms received an additional impetus.

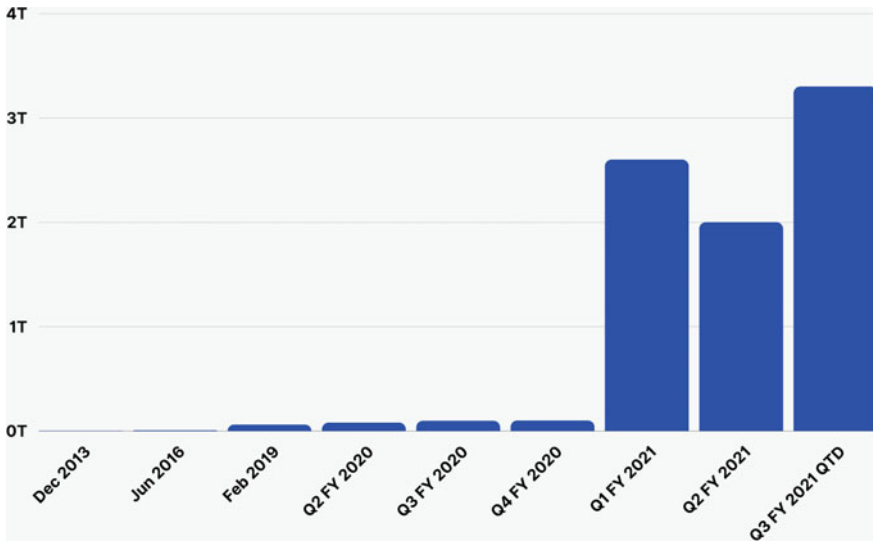


Fig. 8 Using the Zoom platform, trillion minutes

Companies—champions of digital globalization

Amazon has become one of the main beneficiaries of the new stage of globalization, which accounts for over 40% of US digital revenues. Its Internet sales increased by more than 46% in 2020–2021, while in the 5 years preceding the pandemic, the growth was about 14% annually. Amazon’s main markets in 2021 included the USA (\$314 billion), Germany (\$37 billion) and the UK (\$32 billion).

Another example is Zoom Video Communication, which managed to become a world leader in video conferencing in a relatively short period, while the greatest growth in the use of the service occurred in 2021, since it provided easy-to-manage and convenient video communication. That is, it provided an opportunity to work and study at home, and also allowed for international negotiations, scientific events and even just personal contacts at a qualitative level (see Fig. 8).

Zoom Video Communication’s revenue increased from \$330 million in fiscal 2019 to \$2651 million in fiscal 2021.

Another beneficiary of the COVID-19 pandemic, the American streaming service Netflix, had 222 million subscribers worldwide at the end of 2021; there was an increase of 57 million people compared to the end of 2019. At the same time, most of the subscriber growth occurred outside of North America—Europe, the Middle East, Latin America and Asia. In Norway, about 37% of the population subscribes to Netflix, in New Zealand—26%, Australia—25%, the USA—20% and the UK—19%.

New financial mechanisms are developing in the trend of the new stage of globalization. We are talking about blockchain technologies and the cryptocurrencies based on them and their derivatives, which can significantly change the configuration of global financial flows. They allow avoiding the services of banks, as well as

classical payment systems and other financial intermediaries in cross-border settlements and capital flows, which reduces the cost of transactions as much as possible and provides them with a certain anonymity. At the beginning of 2022, there were already 295 million owners of cryptocurrencies from more than 200 countries of the world. In 2017–2021, the cryptocurrency market grew 147 times (from \$15 billion to \$2200 billion), although there were serious ups and downs in this market, including individual cryptocurrencies.

The main cryptocurrencies at the beginning of 2022 were Bitcoin (37.3% of the market), Ethereum (16.7%), Ripple (3.7%), Tether (3.5%) and Axia (3.3%). Today, more than 500 cryptocurrencies are circulating on the market, and a number of states and companies have announced their intentions to issue their own cryptocurrencies. Although only one country, El Salvador, has recognized Bitcoin as an official means of payment. However, some countries have officially abandoned the use of these cryptocurrencies for settlements and are going to use national digital currencies, the circulation of which will be regulated by their central banks.

It means that the idea about the decline of globalization is not supported by concrete data on the development of the global economy. They show that globalization does not end, but acquires a qualitatively different character.

5 Sustainable Development

Largely as a reaction to environmental degradation, the concept of sustainable development appeared in the late 1960s and early 1970s. It was based on an ecological approach to nature management that took into account the needs of future generations. But then the ecological approach began to be complemented by economic and social approaches. Such a three-pronged approach is caused by the fact that in practice the ecological, economic and social spheres of human development are interdependent, and, according to the concept of sustainable development, each of these spheres should develop not to the detriment, but with an eye to the other two.

The global community has also come to understand that environmental, economic and social problems should be solved simultaneously at national and global levels. As a result, in 2015 the UN adopted a document entitled “Transforming our world: the 2030 Agenda for Sustainable Development” (Agenda 2030). This document describes 17 sustainable development goals (SDGs) that the global community needs to achieve by 2030 (see Fig. 9).

Different countries use different frameworks to assess the achievement of these goals. But for international comparisons, we use the frameworks guided by the UN-recommended global indicator framework of 231 indicators, reflecting various aspects of 17 SDGs.

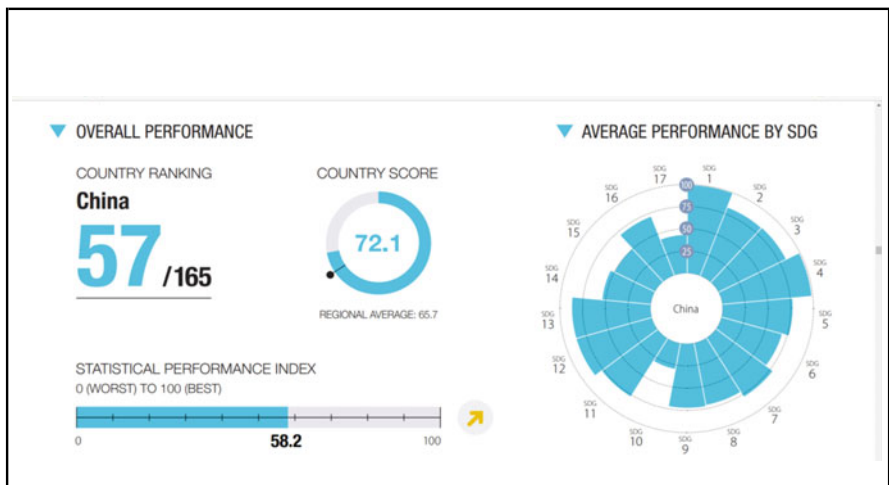
For example, the Sustainable Development Solutions Network, accredited by the UN, publishes reports on the implementation of SDGs worldwide, in different regions and countries. According to its latest report (based on 91 indicators), developed countries (primarily Finland, Sweden, Denmark, Germany and Belgium) have achieved



Fig. 9 Sustainable Development Goals

the greatest success in fulfilling SDGs, and the least success has been achieved by less developed countries (Liberia, Somalia, Chad, South Sudan and Central African Republic) (Sustainable Development Report, 2021).

Agenda 2030 sets 17 sustainable development goals that the global community needs to achieve by 2030. But if some of them are achieved with considerable success, and others with moderate success, sometimes we can see setbacks. The picture is quite heterogeneous: it differs by country, as shown by the inset for China, India and Germany.





If we evaluate the progress in achieving SDGs since 2015 worldwide, then:

- the best results were observed in SDG 1 (No Poverty), SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 11 (Sustainable Cities and Communities) and especially in SDG 9 (Industry, Innovation and Infrastructure);
- the worst results (slow progress) were in SDG 6 (Clean Water and Sanitation), SDG 13 (Climate Action) and SDG 14 (Life Below Water);
- we could even see a slight setback in achieving two goals—SDG 12 (Responsible Consumption and Production) and SDG 15 (Life on Land).

6 Conclusions

1. The New Normal can be considered one of the main characteristics determining the modern development of the world economy and international business. In a generalized sense, it is the rapid emergence of new phenomena that are sharply

different from the previous ones (“what used to be unusual has become ordinary, normal”). In a concrete sense, it is a decrease in predictability, leading to an increase in uncertainty and the resulting instability of the economic agents’ behaviour. In the new reality, they are faced with a lot of new phenomena, the development of which is difficult for them to predict, and therefore the level of uncertainty that has developed in their previous life is sharply increasing, and their behaviour is increasingly becoming volatile and even chaotic.

2. The Fourth Industrial Revolution that has begun relies on digital technologies and creates a world of smart and interconnected machines. Its megatrends include 3D printing, advanced robotics, unmanned vehicles and new materials in the physical sphere, the Internet of Things, blockchain and digital platforms in the digital sphere and genetics in the biological sphere. Megatrends such as big data, artificial intelligence, environmental management and energy consumption, as well as the response to pandemics are often added there.
3. However, sceptics doubt that a new revolution is taking place. They consider it to be a continuation of the previous third industrial revolution. They point out that scientific and technological progress is even slowing down (which is confirmed by a drop in the growth rates of aggregate factor productivity and labour productivity). Their opponents object that this is a consequence of the cheapening of many goods and services as a result of the new industrial revolution, which distorts productivity statistics. This book offers a compromise point of view—the Fourth Industrial Revolution is just beginning, and therefore its fruits are not always abundant and statistically visible.
4. The globalization of the world economy has a strong impact on its development. Global flows of goods, services and investments annually add from 15 to 25% to the total growth of the world economy. An important trend of the current globalization is the slowdown in the dynamics of international trade and capital flows. The slowdown in the growth of these and other indicators has become the basis for judging the slowdown and even the decline of globalization.
5. The opponents of this point of view believe that the slowdown in the traditional spheres of globalization is due to its transition to a new stage of development, which is characterized primarily by the development of digital technologies, especially transmitting information, the global flow of which continues to grow rapidly. Another major trend of the current stage of globalization is the strengthening of protectionism in world trade and investment (at the same time, this is the reason for the slowdown in their dynamics).
6. The concept of sustainable development, which originated in the world community at the turn of the 1960s and 1970s, initially focused on an ecological approach to nature management that takes into account the needs of future generations. But then the ecological approach began to be complemented by economic and social approaches, adopted by the UN in 2015.

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World Economy Major Trends: Evolution of National Economic Systems



Alexander Bulatov 

Abstract This chapter starts with the fundamentals of national economic systems and methodological approaches. Much attention is paid to the impact of national political, social, and cultural systems on a national economic system. The last paragraph of the chapter focuses on a retrospective analysis of national economic systems, and some forecasts are made.

1 Introduction

The economic systems of all countries, even of a similar level of development, differ from each other. The chapter firstly sets out the methodology for analyzing these systems and their main elements. The next paragraph deals with the impact of a country's political, social, and cultural systems on its economic one. The chapter ends with a paragraph about current trends in the evolution of national economic systems.

2 Fundamentals of National Economic Systems

2.1 *The Notion of the National Economic System*

The national economic system (economic system of a country, economic model of a country) is a descriptive model of its economic mechanism. It pays special attention to the ratio of ownership forms in the country and the degree of independence of its economic agents.

This definition raises the question of why special attention should be paid to the ratio of ownership forms and the degree of independence of economic agents.

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This is because the main groups of economic systems—traditional (pre-capitalist), socialist (communist), market (capitalist)—differ from each other primarily by such institutions as forms of ownership and the independence of economic agents. Capitalism prevails in the modern world, which is why, unlike in traditional and socialist systems, private property dominates and economic agents are independent. The latter is high because under capitalism, there is the phenomenon of consumer sovereignty (in which the range and volume of the production are ultimately set by the consumer for whom producers compete) and freedom of entrepreneurship (firms use economic resources to produce and market products primarily by their own choice). Nevertheless, in the market systems of different countries, there is a significant difference in how much private property dominates over other forms of ownership and what the freedom of economic agents is (primarily freedom of entrepreneurship).

When analyzing the economic system of a country, it is reasonable to compare the country with those of a similar level of development to clarify the specifics of this country, since different trends arise at different levels of development (for example, developed countries have lower economic growth rates than less developed countries catching up with them, but catching up countries reduce their growth dynamics as they reach the level of the most developed countries). A comparison with countries of a similar level of development (especially neighboring ones) makes it possible to identify the distinctive features of the economic system of the country under study against the background of their general patterns.

It is worth saying that an analysis of the impact of a country's political, social, and cultural systems can deepen the analysis of the national economic system. This process largely explains why the economic systems of neighboring countries differ.

The analysis of the national economic model is not canonized. One can use different indicators for it, selecting them from national and international statistics. If a ready-made set of indicators is used, then probably one of the best sets is contained in the annual Global Competitiveness Report by the international non-governmental organization World Economic Forum. The report is prepared using national statistics and surveys of local entrepreneurs in more than 140 countries. It is aimed at evaluating the competitiveness index of the countries in points (from 0 to 100); in addition, however, the multiplicity and representativeness of the indicators (more than 100) included in this index and combined into 12 sub-indices also makes it possible to identify some features of national economic systems.

This can be demonstrated with the example of Eastern European and Central Asian countries that are close in terms of economic development, comparing their sub-indices (Table 1).

Table 1 reflects some strengths and weaknesses of national economic systems. In particular, Poland demonstrates a relatively good level of infrastructure, macroeconomic stability, healthcare, employee qualifications, and the financial system, although on the other hand, it is lagging in terms of ICT development and business dynamism.

Table 1 Some East European and Central Asian economies: Global Competitiveness Index and its sub-indices in 2019

	Poland	Russia	Turkey	Kazakhstan	Memo: USA
Global Competitiveness Index (in points from 0 to 100, where 100 is the highest score, in parentheses is the country's place in the list of 141 states)	68.9 (37)	66.7 (43)	62.1 (61)	62.9 (55)	83.7 (2)
Institutions	56.4	52.6	53.9	55.6	71.2
Infrastructure	81.2	73.8	74.3	68.3	87.9
ICT development	65.4	77.0	57.8	68.0	74.3
Macroeconomic stability	100.0	90.0	61.3	86.2	99.8
Health	83.8	69.2	87.1	71.0	83.0
Skills	72.1	68.3	60.8	67.5	82.5
Product market	58.1	52.9	54.1	55.7	68.6
Labor market	59.9	61.0	52.9	67.8	78.0
Financial system	64.1	55.7	61.2	53.1	91.0
Market size	74.1	84.2	79.0	63.4	99.5
Business dynamism	62.0	63.1	58.8	66.6	84.2
Innovation capability	49.7	52.9	44.5	32.0	84.1

Source WEF (2019). The Global Competitiveness Report. Geneva

2.2 *Business Structure as an Element of the National Economic Model*

The specifics of a country's economic model largely determine the ratio of ownership forms in it. The concept of business structure used to define this is interpreted in different ways, including as referring a firm (entity) to a small, medium, large, or state business, or one of the organizational and legal forms of business—a partnership, a limited liability company, a joint-stock company, etc.

The ratio of business forms is important when analyzing the economy of a country or its parts. For example, if a country has a large public sector, then it can be considered as an economy with a relatively weak private business, and if a large private business has a large weight, it can be considered as a heavily monopolized economy.

In practice, the main obstacle to establishing the weight in the economy of different forms of business is the shortcomings of statistics, which often do not enable determining the share of the entire private sector in the production of GDP or national wealth. To get out of this difficulty, one can turn to indirect indicators—for example, to the share of people employed in the public sector in its broad definition (general government and public companies) (Table 2).

Table 2 Some East European and Central Asian economies: the share of public sector employment in total employment in 2009–2018, %

Poland	Russia	Turkey	Kazakhstan
20	42	13	37

Source World Bank Open Data

As can be seen from Table 1, of the four countries under consideration, the share of the public sector is very large in Kazakhstan and Russia, which is explained not so much by a large number of employees in the general government (public administration bodies at all levels) as by the large weight in the employment of public companies. On the one hand, this may indicate the weakness of private business in many industries, which is compensated by the activity of public companies. On the other hand, it may indicate the unwillingness of the state to concede the most profitable industries to private businesses.

The analysis of the specifics of ownership forms is assisted by the economic-theoretical methodology proposed by the authors of the book *Good Capitalism* (2007). It proposes distinguishing between four modern versions of capitalism—entrepreneurial (based on the activities of innovative firms, usually small and medium-sized), the capitalism of large firms (predominate in the production of mass products), state capitalism (with a very large weight of the state in making key economic decisions), and oligarchic (economic power is concentrated in the hands of a few families or individuals, called oligarchs). In every country with a market economic system, these forms coexist simultaneously in different combinations; moreover, these combinations change over time. However, at any given moment, one or two forms mainly prevail in a particular market economy, which forms the specifics of the national economic model in terms of ownership forms. For example, in the USA, a combination of entrepreneurial capitalism with the capitalism of large firms now dominates there (the former implements innovations in economic life, the latter picks them up and carries out mass production of new goods on their basis), although it was the capitalism of large firms that used to prevail. Modern Japan is characterized by a combination of the capitalism of large firms with state capitalism, although the country is making attempts to switch to a combination of the American type.

Source Baumol et al. (2007). *Good Capitalism, Bad Capitalism, and the Economics of Growth and Prosperity*. New Haven & London: Yale University Press.

2.3 Independence of Economic Agents as an Element of the Country's Economic System

A distinctive feature of economic agents is that they make independent decisions in their economic life. To denote the independence of economic agents (primarily

Table 3 Some East European and Central Asian economies: Index of Economic Freedom in 2021

Poland	Russia	Turkey	Kazakhstan	Memo: USA
69.1	61.0	64.4	69.1	76.6

Source The Heritage Foundation (2021). Index of Economic Freedom

households), the concept of freedom of consumer choice (consumer sovereignty) is used, which means that the economic agent himself determines the set and size of their purchases. This creates a situation where the range and volume of production in the national economy are ultimately set by the consumer, for whom producers (primarily firms) compete. The independence of firms means that they make decisions on how to use their available economic resources and the income from them. The independence of firms as economic agents is indicated by the concept of freedom of entrepreneurship, i.e., freedom to engage in any non-prohibited (or not reserved for the state) economic activity. Freedom of entrepreneurship is expressed primarily in the freedom to create firms, their choice of the subject of economic activity, freedom from excessive state regulation, freedom to set prices, and, of course, the inviolability of their property rights.

In less developed countries, consumer sovereignty is hindered by a low level of competition, and freedom of entrepreneurship is constrained by law and practice. The independence of economic agents is usually measured by various indicators of freedom of entrepreneurship. In particular, the well-known index of economic freedom (calculated annually by the American Heritage Foundation Research Center and based on 12 sub-indices measuring various aspects of business freedom) shows the following picture for the countries studied (Table 3).

At the same time, the relatively high Index of Economic Freedom in Kazakhstan in 2021 demonstrates the insufficient reliability of this index (as, indeed, most similar indices, for example, Economic Freedom of the World by Fraser Institute). Major unrest in this country, which occurred in early 2022, was largely caused by the defects of the economic system in which the ruling clan regulated the freedom of entrepreneurship.

3 The Impact of Political, Social, and Cultural Systems on the Economic System of a Country

The economic system of a country is greatly influenced by its other systems—political, social, and cultural.

One should start with the country's political system, which affects its economic development primarily through democratic institutions. There are various quantitative estimates of the level of democracy. According to the Democracy Index (published by the Economist Intelligence Unit and measured on a 10-point scale), the following four countries studied differ greatly from each other (Table 4).

Table 4 East European and Central Asian economies: Democracy Index in 2020

Poland	Russia	Turkey	Kazakhstan	For reference: USA
6.85	3.31	4.48	3.14	7.92

Source The Economist Intelligence Unit (2020). Global Democracy Index

Democracy is weak in all the countries under consideration, except Poland, and it can be assumed that this separates the interests of the ruling elite from the ones of the whole country, and consequently means little protection of the property rights, low independence of the judicial system, and a large administrative impact on the activities of firms.

The social system has the greatest daily impact on the economy, and therefore they often talk not about the economy, but the socio-economic system of the country. The main characteristic of the country's social system is the level and quality of life achieved in it, as well as the social policy pursued in the country, especially the income policy aimed at smoothing the difference between the incomes of different groups of the population.

In an attempt to bring together many indicators of the level and quality of life, the United Nations Development Programme (UNDP) offers such a synthetic indicator as the Human Development Index. This is an arithmetic mean of three sub-indices—life expectancy, education level (consists of two indicators), and soul level according to GNI PPP. The ideal is achieved when each of the subindexes and the index as a whole reaches 1, i.e., the maximum possible value in modern conditions.

As can be seen from Table 5, the countries under consideration are close in terms of the Human Development Index as a whole, but they differ greatly in their sub-indices. In particular, Turkey has a good life expectancy, but poor indicators in terms of education (although it will improve the expected duration of education in the future) and income inequality. Russia lacks high life expectancy and the Gini coefficient but has a good level of education for adults.

The cultural system (model) of a country influences the national economic system primarily through such ethical institutions as diligence, responsibility, honesty, and law-abiding. It is difficult to compare diligence and responsibility among residents of countries of a similar level of development, but honesty and law-abiding can be indirectly assessed by such widespread indicators in statistics as the level of corruption and crime.

The Corruption Perception Index, prepared annually by the international non-governmental organization Transparency International and reflecting the perception of the level of corruption of the state apparatus by entrepreneurs and experts, demonstrates a higher level of corruption in Russia and Kazakhstan compared to the countries of a similar level of development. From the Institutions sub-index of the global competition index, an indicator of the spread of organized crime can be taken (Table 6).

Table 5 East European and Central Asian economies: some social indicators in 2019

	Poland	Russia	Turkey	Kazakhstan	Memo: USA
The Human Development Index (in points, where the highest indicator is 1, in parentheses—the country's place in the list of 189 states)	0.880 (35)	0.824 (52)	0.820 (54)	0.825 (51)	0.926 (17)
Life expectancy, years	78.7	72.6	77.7	73.6	78.9
Education level					
For persons aged 25 years or more, incl. advanced training and retraining, years	12.5	12.2	8.1	11.9	13.4
Expected duration of education for primary school students, years	16.3	15.0	16.6	15.6	16.3
Per capita GNI by \$ PPP	31,623	25,157	27,701	22,857	63,826
<i>Memo</i>					
Gini coefficient in 2010–2018	29.7	37.5	41.9	27.5	41.4
The share of the richest 1% of the population in national income in 2010–2017	14.0	20.2	23.4	n/a	20.5
Human Development Index adjusted for inequality in life expectancy, access to education, per capita GNI by PPP	0.813	0.740	0.683	0.766	0.808

Source UNDP (2020). *Human Development Report*. New York

Table 6 East European and Central Asian economies: corruption and organized crime in 2019

Indicator	Russia	Poland	Turkey	Kazakhstan	Memo: USA
Corruption Perception Index (country's place in the list of 180 countries)	137	41	91	113	23
Organized crime (position in the list of 140 countries)	73	46	81	51	69

Sources Transparency International. Corruption Perception Index; World Economic Forum (2019). The Global Competitiveness Report. Geneva

Based on the data in Table 6, it can be concluded that the Russian economic system suffers from corruption, as well as organized crime (which, however, is not much lower in the other countries under consideration, and even higher in Turkey).

4 Evolution of National Economic Systems

The study and evolution of national economic systems are primarily under consideration of institutional theory and political economy. Within the framework of institutional theory, the emphasis is, of course, on institutions. Comparing the economies of developed and less developed countries in retrospect, primarily North and Latin America, institutionalists argue that the economic success of a country depends primarily on the properties of its institutions and whether they reflect the interests of the whole society (these are inclusive institutions) or only a part of it (then it is extractive institutions) (Acemoglu & Robinson, 2012). Inclusive institutions encourage the participation of large groups of the population in entrepreneurship through protected property rights, an impartial justice system, and equal opportunities for all people to participate in economic activities. Extractive institutions express the interests of only one part of the population to exploit another part of it. It is concluded that inclusive institutions contribute to the faster and longer-term economic progress of the country, and their existence is ensured by inclusive political institutions (pluralistic political systems). In particular, they help to reduce the costs of maintaining the property, and to reduce the barriers to entry into industries that in less democratic countries can be monopolized by inefficient firms.

As for the political economy, international political economy theory makes a historical distinction between “liberal market economies” (where firms coordinate their activities via market institutions predominantly) and “coordinated market economies” (where firms depend more heavily on non-market relationships with various institutions). This distinction lays grounds for “varieties of capitalism” (e.g., continental European economies versus Anglo-Saxon). Inferior to continental Europe in the social protection of its citizens, Anglo-Saxon economies surpass them in terms of growth rates in a historical perspective (Hall & Soskice, 2004).

Developing the distinction between these two types of economic systems (The Palgrave Handbook, 2019) indicates that the world of capitalism has never been more diverse particularly due to the global South, where national economies are even more “coordinated” compared to continental Europe. In general, the North is more liberal in its economic systems compared to the South. As the share of less developed countries in the global economy grows, their coordinated market economies become more and more prominent participants in the global economy. As a result, the predominance of economic systems with a coordinated market has become one of the trends of the world economy.

From the point of view of the methodology of national economic systems, the typical features of coordinated economies are the strong presence of the state and the limited independence of economic agents. In developed countries, the differences between liberal and coordinated market economies are caused primarily by the strong influence of corporatism in Europe, according to which the elementary social units include certain social groups rather than individuals. In less developed countries, the popularity of coordinated market economies is explained by more fundamental reasons—foremost, the economic backwardness of these countries and the urgent need for accelerated modernization. The preference given by less developed countries to economic systems with a coordinated market can be theoretically explained as follows:

- from the point of view of political economy, the economic tasks facing these countries within the framework of catch-up development cannot be solved only by private business, which often has not accumulated the strength and experience for such accelerated modernization. Under these conditions, the state is forced to make maximum use of its economic resources (concentrated in the public sector) and administrative resources (heavily regulating private business) in the interests of the whole society;
- following institutional theory, the strong position of the state in less developed economies and their strong regulation of private business reflects the predominance of extractive institutions in many of them.

However, should there be strong state intervention in the country’s economy as the level of its development increases? The lack of retrospective statistics on the share of public companies in the GDP or employment of the countries of the world does not make it possible to provide the dynamics of this share. However, the data on the level of business regulation partly allow us to answer this question.

The OECD indicators of Product Market Regulation (0 means no government regulation at all) cover the extent to which the involvement of the state in the economy can generate distortions to competition and the level of the barriers to entry and expansion to domestic and foreign firms in different sectors of the economy. Although the last survey (in 2018) differs somewhat in methodology from the previous ones, nevertheless, they make it possible to conclude that economic liberalization took part (albeit unevenly) not only in continental Europe but also in large countries of the global South (Table 7).

Table 7 Product Market Regulation score in some countries

Country	1998	2003	2008	2013	2018
Germany	2.23	1.80	1.40	1.28	1.08
France	2.38	1.77	1.52	1.47	1.57
Italy	2.36	1.87	1.51	1.29	1.32
Republic of Korea	2.58	1.99	1.94	1.88	1.71
Mexico	2.76	2.50	2.05	1.91	1.61
Turkey	3.28	2.82	2.65	2.46	2.28
South Africa	n/a	n/a	2.65	2.21	2.53

Source OECD.Stat. Product Market Regulation <https://stats.oecd.org/index.aspx?queryid=107595#>

However, we should not rush to conclusions. Noticeable state intervention in the economy is necessary for the conditions of the new normal with its high uncertainty, and the coronavirus pandemic has confirmed this. This is especially true for less developed countries, potentially more vulnerable due to their economic immaturity.

4.1 Shifts in Global Economic Power

Different growth rates are changing the share of countries and regions in global GDP. As can be seen from Table 8, the weight of Western Europe grew in the world economy over the past centuries, when it was the turn of the USA and other Anglo-Saxon countries that began to industrialize, followed by Japan, Eastern Europe, and Russia. However, the weight of these countries and regions of the world began to decline in the last century, due to the beginning of active industrialization in Latin America, and then Asia. These regions, which had been lagging in their economic development for centuries, began to increase their economic potential and strength, especially in Asia, led by China and India.

In the long term, a further decrease in the weight of the now-developed countries and an increase in the weight of the countries lagging behind them, primarily China and India, is predicted, especially since their weight was much greater when the world was less differentiated by the level of development, corresponding to their weight in the world population. According to the latest long-term forecast of the OECD (Table 3.10), China should surpass the USA in terms of GDP by one and a half times, and India should catch up with the Eurozone in this indicator in 2030.

In this regard, the question arises—does the growth of less developed economies simply increase their share in world GDP and gradually liberalize their economies, or should this provoke a qualitative transformation of the world economy? If in the last 200 years most of the now-developed countries of the world took after the relatively liberal economic systems of Western Europe, should countries such as China, India, Russia, and Brazil, which already account for about 1/3 of global GDP, follow their example (like Korea, Mexico, and Turkey did (Table 7)? Should liberal or state-led

Table 8 The share of various countries and regions in world GDP, %

Country and region	Indicator											
	0	1000	1500	1820	1870	1913	1950	1973	2003	2021 (est.)		
The USA and other Anglo-Saxon countries (except Great Britain)	–	–	0.4	1.9	10.0	21.6	30.7	25.3	23.7	18.5		
Japan	1.2	2.7	3.1	3.0	2.3	2.6	3.0	7.7	7.7 ^a	3.8		
Western Europe	10.8	8.7	17.9	23.0	33.1	33.5	26.2	25.6	20.6	16.0		
Eastern Europe	1.9	2.2	2.5	3.3	4.1	4.5	3.5	3.4	1.9	2.0		
Former-USSR countries	1.5	2.4	3.4	5.4	7.6	8.6	9.6	9.4	3.8	4.0		
Asia (except Japan)	75.1	67.6	62.1	56.2	36.0	21.9	15.5	16.4	29.5 ^a	34.5		
China	26.2	22.7	25.0	32.9	17.2	8.9	4.5	4.6	11.5 ^a	18.6		
India	32.9	28.9	24.5	16.0	12.2	7.6	4.2	3.1	5.0 ^a	7.0		
Latin America	2.2	3.9	2.9	2.1	2.5	4.5	7.8	8.7	7.7	7.3		
Africa	6.8	11.8	7.4	4.1	3.6	2.7	3.8	3.4	3.2	5.5		

Source Maddison (2006). *World Economic Outlook*, April 2022.

^a 1998

capitalism prevail in the future world? We can only cautiously assume that these countries will gradually liberalize their economic systems, but the size of the public sector and the degree of regulation of entrepreneurship should not decrease to the level of the North soon. To do this, they need to become economically developed countries, which is a long-term matter.

5 Conclusions

1. The national economic system (an economic system of a country) is a descriptive model of the economic mechanism used by a country. It pays special attention to the ratio of ownership forms in the country and the degree of independence of its economic agents.
2. An analysis of the impact of the country's political, social, and cultural systems can deepen the analysis of the national economic system. This process largely explains why the economic systems of neighboring countries differ. At the same time, the analysis of the national economic model is not canonized, and different indicators selected from national and international statistics can be used for it.
3. The study and evolution of national economic systems are primarily under the consideration of institutional theory and political economy. Institutional theory argues that the economic success of a country depends primarily on the properties of its institutions and largely on whether they reflect the interests of the whole society or only a part of it. The institutions of the first type contribute to a faster and longer-term economic progress of the country, and their existence is ensured by pluralistic political institutions.
4. International political economy theory makes the historical distinction between "liberal market economies" (where firms coordinate their activities via market institutions predominantly) and "coordinated market economies" (where firms depend more heavily on non-market relationships with various institutions). This distinction lays grounds for "varieties of capitalism".
5. We can only cautiously assume that these countries will gradually liberalize their economic systems, but the size of the public sector and the degree of regulation of entrepreneurship should not decrease to the level of the North soon. To do this, they need to become economically developed countries.

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World Economy Major Trends: International Economic Integration



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Abstract This chapter deals with theoretical approaches to the international economic integration and its evolution. The course and direction of integration processes in Europe, the Americas, Africa, Southeast Asia, the Near and Middle East and the post-Soviet space are discussed.

1 Introduction

International economic integration has become one of the world economy's major trends in the last few decades. The growing number of examples of integration almost all over the world shows that this is a global phenomenon. Various forms of economic integration enhance the countries' benefit from integration processes.

In the early stages of the development of integration processes, the theoretical understanding of integration was based on the thesis of the evolutionary-progressive nature of integration processes, but in the 1990s the pluralism of scientific views and schools regarding international economic integration began to grow rapidly.

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2 Theories, Trends and Challenges of International Economic Integration

2.1 *Theories of Economic Integration*

Theories of economic integration are a part of international economics related to the analysis of the prerequisites and effects of various forms of integration, both on the economies of the countries participating in integration as well as third countries. In terms of content, these theories have gone through several stages, at which political and economic issues relevant to their time were resolved.

The initial stage is mainly related to the works of Jakob Viner “The Customs Union Issue” (1950) and Bela Balassa “The Theory of Economic Integration” (1961). The first one defined specific criteria for distinguishing the pros and cons of economic integration and highlighted the so-called “static effects of economic integration”—now well-known as the trade creation effect and trade diversion effect. However, due to disregard of some factors, J. Viner’s theory was incomplete and allowed for the possibility that customs unions and free trade zones do not always contribute to improving well-being, and may even reduce global economic well-being. Then Wiener’s analysis was modified by assumptions (e.g., terms of trade), which made it possible to highlight the so-called “dynamic effects of economic integration”. The works by J. Viner, B. Balassa and their followers (e.g., J. Meade, R. Lipsey, C. Cooper and B. Massell et al.) began to be called “traditional theory of economic integration”.

The next stage in the development of integration theories (the so-called “new theories of economic integration”) is associated with the development of globalization and the expanded analysis of previously overlooked “dynamic effects of integration”, e.g., economies of scale, economies of scope, the investment creation effect, investment diversion effect, increase of competition, etc.

One example of such theories is the theory of asymmetric integration and its several models. The essence of the theory is the asymmetry of speed, depth and forms of integration. After all, you can find an asymmetry in the level of economic development between countries in almost any integration association, and in accordance with theory and proven practice, more developed and large countries receive more benefits from participating in the integration process.

To smooth out such a contradiction, the “multi-speed integration” model should be used. For example, in the ASEAN consisting of 10 countries, there are ASEAN-6 and ASEAN-4, for which different terms of liberalization are set. Another example is the theory of “two-speed integration” in relation to European integration. Its supporters single out a centre consisting of 8 states that should move at an accelerated pace along the path of deepening integration, with separate administrative bodies formed.

Another model is hub and spokes, where, for example, one economically developed country and several smaller countries participate in the free trade area as a hub and spokes. The most integrated links are formed between the centre and the periphery (for example, within the framework of the USMCA, these are US–Canada

and US–Mexico ties) and less integrated links are between peripheral (from the point of view of integration) states (Canada–Mexico).

Another model of asymmetric integration is flexible integration, in which countries determine the duration of the transition period by granting special treatment to the least developed countries. For example, if we take the South Asian Association of Regional Cooperation (SAARC), less economically developed countries have a special trade regime there.

Another trend of modern integration theories analyses the importance of direct investment, based on the fact that the role of foreign direct investment (FDI) is more significant in the integration process than trade in goods. Within the framework of integration processes, FDI is growing and technological changes are taking place on this basis; they contribute to the economic growth of partner countries, which is especially important for associations with the participation of developing countries.

Attempts to develop differentiated theories of integration, i.e., not universal in nature, but suitable for use in countries of different levels of development, can be considered a separate direction in theories of economic integration. The most prominent in this context are Eurocentric approaches to economic integration. For example, the concepts of functionalism came to the fore at the initial stage of European integration. Its supporters proceeded from the complementarity of countries in achieving common goals, taking into account economic interests, but without creating supranational regulatory institutions. The extension of liberalization to the movement of goods, services, capital and persons under the Treaty of Rome (1957) on the European Economic Community contributed to the development of a new approach to the conceptual justification of integration within the framework of neofunctionalism, which preferred managed integration and the formation of a political union taking into account the spill-over effect, i.e., the inevitability of the overflow of integration from one sphere to another.

However, according to the supporters of such a neo-Keynesian trend as dirigisme, to develop European integration, one has to equalize the income levels between the participating countries and regions, and not just liberalize trade and the factors of production. Therefore, Jan Tinbergen introduced the concept of negative and positive integration. Negative integration means the elimination of economic restrictions between member countries (the position of the neoliberals), and positive integration means the formation of a qualitatively new environment that allows interdependent economies to function optimally (the position of dirigistes).

In the early 1990s, federalism became another trend of integration concepts, whose supporters proceed from the close relationship between economic and political integration, the increasing role of supranational institutions and the gradual merger of countries into a federation. This position reflected the fact of signing the Maastricht Treaty on the EU (1992). This means that the historical development of the theoretical justification of integration processes was largely connected with the evolution of integration in the EU.

Another direction of modern theories is the justification of integration processes in less developed countries. Most of the previous theories were based on the successful practice of integration processes in Europe, but their postulates are difficult to apply to integration processes in developing regions. The reason is due to varying degrees of economic interdependence. For example, a high degree of economic interdependence has developed within the framework of the North–North model (in the EU, the share of mutual trade is about 63% of the total foreign trade of this integration association, USMCA—49%), as in some North–South associations (APEC—70%). But South–South integration associations are characterized by a low degree of interdependence, despite the existing free trade area (SAARC—7%) or customs union (MERCOSUR—12%). The reason is related to the relatively similar and poorly diversified commodity structure of the exports of the national economies included in these associations. Hence, their high dependence primarily on trade with developed countries.

Nevertheless, individual associations have been successful (e.g., ASEAN). Their advantages were the formation of a large integrated domestic market, an increase in FDI inflows on this basis (for example, in ASEAN FDI was increased by 10.6 times, while in the world—by 4.9 times in 1990–2020), an increase in the share of mutual exports in total exports, especially in the first years of liberalization (in MERCOSUR from 12 to 20% 1980–2000); improving the level of collective economic security and developing collective positions in negotiations in international organizations. We should also highlight such a trend of modern theories as the justification of integration processes in less developed countries. Most of the previous theories were based on the successful practice of integration processes in Europe, but their postulates are difficult to apply to integration processes in developing regions. The reason is due to varying degrees of economic interdependence. For example, a high degree of economic interdependence has developed within the framework of the North–North model (in the EU, the share of mutual trade is about 63% of the total foreign trade of this integration association, USMCA—49%), as in some North–South associations (APEC—70%). But South–South integration associations are characterized by a low degree of interdependence.

2.2 Classification of the Forms of Economic Integration

Balassa determined that economic integration develops progressively from the lowest to the highest form, the differences between which are determined by the degree of liberalization of the goods movement and the level and harmonization of the economic policies of the participating countries. His classification of forms of economic integration has for a long time become a kind of standard with which the course of economic integration of the countries is checked (see Fig. 1).

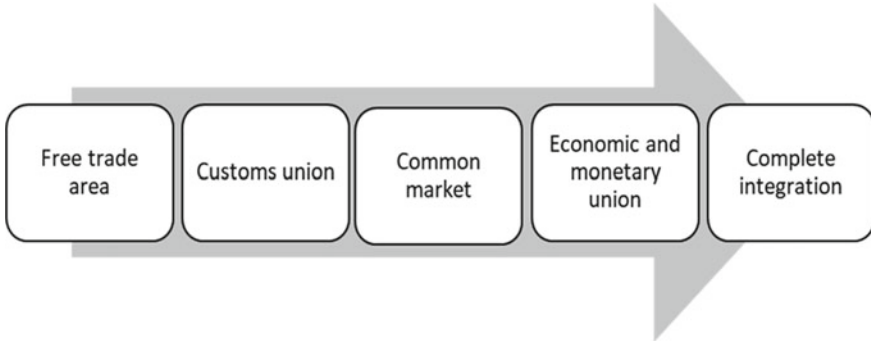


Fig. 1 Evolution of forms of economic integration according to Balassa (Source Compiled by: Balassa [1961])

Forms of Economic Integration by Balassa

The first form of integration—a free trade area (FTA) implies the unification of countries in which trade barriers in mutual trade are eliminated. An example is the African Continental Free Trade Area.

The second form is customs union as an association of countries in which mutual trade is liberalized, and a common trade policy is carried out when trading with non-participating countries. An example is MERCOSUR in Latin America.

The third form is the common market as an association of countries with free movement of goods, services, capital and persons. An example is the Gulf Cooperation Council (GCC) in the Middle East.

The fourth form is the economic and monetary union, as a common market with a common policy in industry, transport, agriculture, etc., a common monetary policy and a common currency. An example is the European Union.

The fifth (the highest) form of integration is complete integration. The European Union aims to achieve this goal in accordance with the Maastricht Treaty (1992).

However, due to the emergence of many new integration forms, there is a need for a new classification. Modern researchers have not yet proposed an alternative version, limiting themselves to making additions to the “traditional” classification. For instance, preferential trade zones should be considered one of the additions to the “traditional” classification. They are located in front of the free trade zone, since they mean the abolition of customs tariffs, not for the entire range of traded goods, but only for some part of it. At the same time, there is another approach, according to which “preferential trade zone” is the broadest concept that includes all currently known forms of economic integration (see Fig. 2).

Another addition to the Balassa scheme was proposed by Pelkmans, highlighting six forms of integration using the example of ASEAN (see Fig. 3).

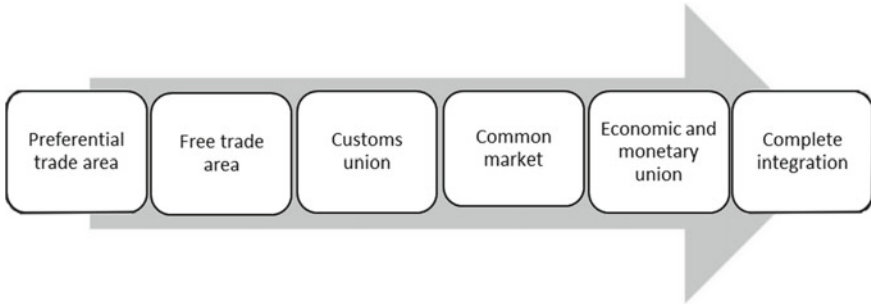


Fig. 2 The evolution of the forms of economic integration according to the supporters of the “new” theory of economic integration (*Source* Compiled by the authors)

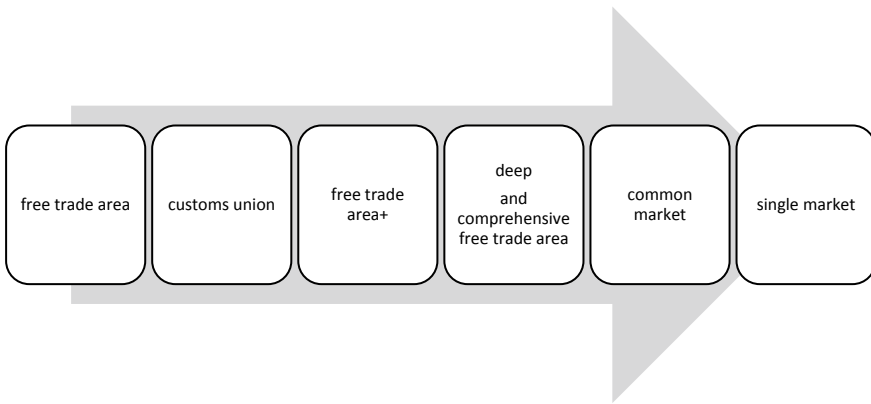


Fig. 3 Evolution of the forms of economic integration by Pelkmans (*Source* Compiled by: Pelkmans 2016)

In the Pelkmans scheme, three forms of integration are proposed; they cannot be found in Balassa, but reflect modern realities. This is the FTA+, as a classic zone with obligations to the WTO and individual WTO+ elements (investment, trade facilitation), for example, the ASEAN Economic Community; deep and comprehensive FTA (or economic partnership agreement), including services, investments, competition policy, trade facilitation, etc., for example, Trans-Pacific Partnership; single market, which according to Pelkmans (2016) is not just a legal concept of a common market for goods, services, capital and persons, but also an economic concept, which has not yet been achieved even within the EU.

2.3 Regional and Cross-Regional Integration

We should also distinguish between regional cooperation and regional integration. Regional cooperation can be defined as a process when individual States (or other entities) within a common geographical region interact for common benefit and to solve common problems in the areas of infrastructure, water supply and energy, despite contradictions in other areas. For example, interstate cooperation is highly developed in East Asia, a high degree of trade interdependence has been achieved (intraregional trade accounts for 36% of the total turnover of the region's countries), mutual flows of capital and knowledge are great, but there is not even a region-wide free trade zone yet. This means that the consequence of regionalism is a high degree of economic interdependence, which can often manifest itself only within the framework of cooperation and does not necessarily lead to integration.

In contrast to regional cooperation, regional integration is a deeper process and is based primarily on trade liberalization between the participating countries, which can lead to merging into a common integrated space, as is the case, for example, in Southeast Asia within the framework of ASEAN.

Unlike regional integration, interregional integration covers States of more than one region. This trend has been called cross-regional integration.

Cross-regional integration can be carried out between integration associations of different regions located in different regions of the world (ASEAN—Gulf Cooperation Council), an association of one region and a country of another region (EU—Vietnam), countries of different regions (US—Morocco), as well as in the form of mega-partnerships between many countries of different regions (Trans-Pacific Partnership) and even the border regions of neighbouring states (economic growth zones).

Cross-regional integration allows small countries to reduce dependence on a regional leader and gain preferential access to a large sales market. For a large state, economic advantages are associated with promoting the formation of a large integrated interregional market, providing access to natural resources, cheap labour and political advantages are associated with the realization of geopolitical interests.

2.4 Current Trends in International Economic Integration

According to the WTO, in 1995–2021, the number of regional integration agreements alone increased 7.5 times (see Fig. 4).

The most important trends in the modern integration process include:

- the growth of the number of integration mega-partnerships, primarily in the form of a free trade area;
- increased participation of developing countries in integration processes (the South–South model accounts for 2/3 of integration agreements and another quarter for North–South);

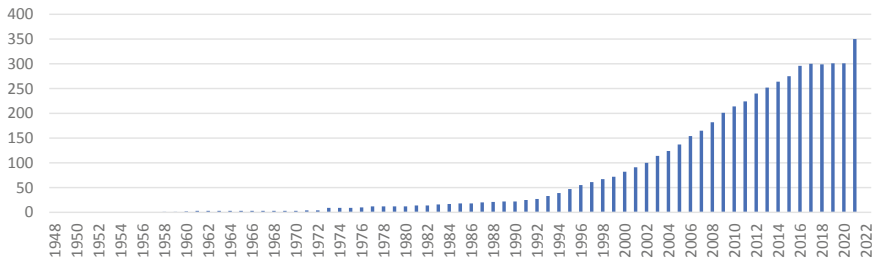


Fig. 4 The number of regional integration agreements in 1948–2021 (Source Compiled by: WTO Regional Trade Agreements Database, <http://rtais.wto.org/UI/publicsummarytable.aspx>)

- the spaghetti bowl effect, when the same country simultaneously participates in several agreements that establish their own trade rules and administrative procedures;
- expansion of the scope of integration agreements: from traditional trade in goods and services to investments, cooperation in the field of ecology and protection of intellectual property rights, the creation of a joint dispute resolution mechanism, which is characteristic of a free trade area plus (FTA+).

2.5 Challenges of International Economic Integration

Participation in the integration association entails, not only advantages for its member countries, but also considerable challenges. One of the challenges is trade diversion, when, due to liberalization and growth of mutual exports, the growth rates of trade turnover of the member countries with third countries slow down and, accordingly, the share of trade with them decreases. Trade diversion occurs when imports from a non-regional producer of more competitive goods are transferred to an intraregional producer of less competitive goods. However, in modern deep (advanced) agreements, the effect of trade diversion is not so dramatic (e.g., Mattoo et al., 2017). In 2000–2020, ASEAN’s mutual exports increased 2.9 times, and their exports to non-participating countries increased 2.7 times.

Another challenge is the impact of structural changes and liberalization on less competitive industries and the companies that cannot compete with foreign industries and companies. As a result, such companies go bankrupt or move production to other regions; unemployment is growing. For example, one of the challenges for Mexico from membership in NAFTA was the ruin of about 600 thousand farms, the reduction of employment in agriculture by 4.9 million people. However, the seasonal employment of Mexicans (work for less than 6 months) increased by 2 million people, but this was not enough to compensate for the lost jobs.

An important challenge is the uneven distribution of benefits between partner countries due to the gap in levels of economic development, which aggravates interstate contradictions. It is estimated that the effect of the formation of the ASEAN

Economic Community will amount to \$40.1 billion (in 2011 prices), including \$10.25 billion for Singapore, and \$0.22 billion for Cambodia (Andrista & Widodo, 2017).

Another challenge is associated with the loss of part of national sovereignty if countries participate in deep forms of integration. When the customs union was created, MERCOSUR countries switched to a common trade policy and a common customs tariff in trade with non-participating States, which narrowed their national sovereignty.

The challenge may be the influence of the leading countries on the integration processes. The leading country can impose its own “rules of the game” in the integration association (the US insisted on introducing the articles beneficial primarily to them in the USMCA agreement—see chapter “USA”). In addition, the leaders of their integration associations (the US, Germany, France, Brazil, Russia) are also major trading partners and investors for the states of other regions, in which they often pursue geopolitical interests, which negatively affects the level of economic interdependence of the other member countries of these integration associations.

3 European Integration

3.1 History

The European Union is the largest and most advanced integration organization in the modern world. The successful start of integration in Western Europe in the 1950s was triggered by a unique combination of ideological, political and economic prerequisites. The desire to ensure long-term peace in Europe and to play an influential role in the post-war world has become a breeding ground for the idea of political unification. Scepticism in national sovereignty, which many people have seen as the cause of wars, paved the way for innovative political solutions. The understanding that the small size of national markets limited economic development was pushing towards the liberalization of regional trade.

The first period of European integration (1950s–early 1970s) was characterized by the dynamic development of the integration process. As the first practical step France, Germany, Italy and the Benelux countries established the European Coal and Steel Community (ECSC, the Paris Treaty) in 1951. Formally, the ECSC was entrusted to deal with technical issues—regulation of coal and steel industries. But from the historic perspective, one can see that the ECSC was the first example of the innovative approach to regional cooperation, the first system based on supranational institutions and partial delegation of sovereignty.

Six Member States signed the Rome Treaties establishing the European Economic Community (EEC) and Euratom in 1957. The EEC was originally designed as a common market, where four freedoms should be ensured: the movement of goods, services, capital and workers. The EEC Treaty described in detail the measures to ensure the freedom of goods and the provisions on the Customs Union. To ensure

the other three freedoms, EEC institutions had to develop a large-scale regulatory framework, but they failed to do this in the 1960s and 1970s. Besides the common market, the Treaty entrusts EEC institutions with the powers to carry on a number of common policies, the most important of which were agricultural and competition policies. The Customs Union of the Six became fully operational in 1968, the implementation of the agricultural policy began two years earlier.

During the second period (the beginning of the 1970s–1984) EEC development slowed down against the background of the overall economic crisis.

The third period began in 1985 with the implementation of Delors plan to build up a Single Market. The elimination of physical, technical and fiscal barriers to trade in 1992 led to the actual formation of an economic space without internal borders, where economic agents operated at the base of common or harmonized rules. Reforms in the EEC governance accompanied the development of the Single Market. New system of governance provided higher decision-making efficiency, laid the foundation for the progressive communitarization of governance methods and strengthened elements of supranationality.

The Maastricht Treaty of 1992 was one the most important milestone in the history of European integration. The Treaty established the European Union (EU) that united all the achievements of economic integration developed within three European Communities (the first pillar), new forms of systematic intergovernmental cooperation in the area of foreign policy (the second pillar) and internal policy (the third pillar). The political union, even if imperfect, meant a radical transformation of the integration process—economic integration was amplified by the process of political integration. The programme for the introduction of a single currency was a key economic element of the Maastricht Treaty.

New states began to join the six founding countries in the 1970s. This process accelerated in the 1990s and after the 2004 enlargement, the number of EU Member States reached 25. The overall results of the third period of European integration (1985–2004) were the achievement of a new stage of economic integration, the creation of the foundations of a political union and the transformation of the EU from a Western European organization into an organization uniting almost all European countries.

European Union's eastern enlargement opened the fourth period (2004–present), which is characterized by a slowdown in integration dynamics, an increase of EU heterogeneity and a series of crises. Currently, the EU operates on the basis of the provisions established by the Lisbon Treaty of 2007. Today, the development of the European Union is determined by the need to react to a series of internal and external crises (economic, migration, erosion of solidarity, the growth of right populism, COVID-19 pandemic, etc.), to ensure the full integration of the CEE countries, to adapt EU institutions to the increased level of heterogeneity between the Member States.

3.2 *Main Achievements*

From an economic point of view, the Single Market forms the basis of the European Union. The Single Market is a physically and legally unified area without economic borders where four freedoms are fully operative: the movement of goods, services, capital and workers. The bulk of EU legislation, regulatory activity of the European Commission (in particular, within the competition policy) and control by the Court of Justice ensures the performance of the Single Market. It significantly increased the competitiveness of European companies and contributed to the growth of the welfare of people in Europe.

Economic and Monetary Union (EMU) is the second most important EU integration project. Currently EMU unites 19 countries, whose official currency is the euro. In theory, the EMU should contribute to efficient allocation of resources, increase competition, economy of scale and strengthen macroeconomic stability. However, it is still a matter of discussion to what extent the EMU has a positive impact on economic growth in practice. The financial and economic crisis of 2008–2012 revealed a number of structural defects of the EMU; first of all, inadequate coordination of macroeconomic policy of member states. Since then, mechanisms of communitarian (supranational) governance have been gradually developing in economic policy; inter alia fiscal, banking and budgetary unions are being created.

EU institutions also carry on a number of sectoral policies, the most important among which are trade, agricultural, cohesion, competitive, social, transport and energy policies. EU has varying powers in these areas. For example, competition policy within the Single Market is fully communitarized and is the prerogative of EU institutions. But Member States still have the major part of powers in social policy; only some basic principles have been harmonized and minimum social standards have been established at the EU level.

The European Union is one of the most important actors of the world economy. After Brexit (UK withdrawal from the European Union) the EU provides 18% of global GDP and 13% of world trade.¹ The EU Single Market unites about 450 million consumers with solvent demand. The euro is the second global currency. European Union institutions have exclusive competence in trade policy; only the EU has the right to take measures to regulate foreign trade and investment, and to conclude international trade and investment agreements.

Since the early 1990s, the European Union has been pursuing a Common Foreign and Security Policy. The CFSP establishes common principles and priorities and complements national foreign policy of EU Member States. One should also mention such non-economic achievements of integration as the Schengen area, the common immigration policy, and the active and broad cooperation of judicial and law enforcement bodies. All this allows us to identify the existence of essential elements of a political union in the EU. Currently, integration affects, more or less, almost all spheres of public life in EU countries.

¹ Not taking into account intra-EU trade.

The uniqueness of the European Union is linked to the partial delegation of sovereignty and essential elements of supranationality. EU institutions, within the limits of powers delegated to them, are independent of the Member States and independently carry out EU policy in the relevant areas. EU law is mandatory in the territory of the Union and has primacy over the national law of member states.

The EU governance system is decentralized. It is based on the balance of intergovernmental (Council of Ministers) and supranational (European Commission, European Parliament) principles. These three EU institutions form an “institutional triangle”; they adopt EU legislation and implement EU sectoral policies. The European Council, composed of heads of state and government, determines the main guidelines and priorities of the EU development. The Court of Justice ensures uniform interpretation and application of EU law; in particular, it monitors compliance by the authorities of member states.

The current situation and challenges. The European Union faced a number of serious challenges in the previous and this decade(s). The eurozone crisis has revealed a set of economic problems that are rooted in insufficient global competitiveness of the EU economy. Economic disproportions between the more developed (north and west) and relatively lagging (south and east) EU economies undermine the effectiveness of economic governance in the EU and weaken political solidarity. The migration crisis sharply exacerbated the numerous contradictions of multi-ethnic and poly-confessional European societies and strengthened the previously noticeable trends of Euroscepticism and right-wing populism.

Brexit, that took place in 2020, was the culmination of Euroscepticism trends. Recent years have given several examples of the rollback of the integration process and de facto return of a number of issues at the national level (for example, the migration crisis). Brexit demonstrated that European integration is no more a one-way road. The European Union is turning into an organization, where normal state is stability, not an endless deepening of integration.

At the same time, Brexit has shown that when leaving the EU, a country, even one as large and highly developed as the UK, faces a large number of problems. This has changed the rhetoric of most Eurosceptics in other Member States. They are calling now, not for withdrawal from the EU, but for a revision of the relationship between the European and national levels of governance, for the return of particular powers at the national level.

Brexit was also one of the manifestations of the EU legitimacy crisis that has unfolded since the mid-1990s due to which the public support for European integration has significantly decreased. The principal reason was that the increase in the EU competence was not accompanied by a comparable increase in the democratic legitimacy of the EU political system. The gap between the Euro-optimism of the elites and a more restrained attitude of society has been growing. Permissive consensus of the public opinion of the 1960–1980s was replaced by a constraining dissension.

One of the important factors of legitimacy is the ability to formulate big goals, a vision of the future that can unite and inspire a wide range of Europeans. Previously, such big goals of European integration were peace in Europe, the common market, the reunification of Europe (West and East), the single currency and Schengen. It is likely

the European Green Deal—a programme unveiled by the European Commission in December 2019, could be such an inspiring goal for the next decade(s). In the framework of the Green Deal, the EU proclaimed two interrelated goals: to reach greenhouse gas neutrality by 2050 and to decouple economic growth from resource use. The Green Deal implies the radical transformation of many sectors, including construction, housing, energy, transport, agriculture and the food industry. Among particular actions, one should underline a circular economy action plan, revision of the emissions trading system and a smart mobility strategy. The EU aspires to be a global leader in the fight against climate change and to use this leadership in order to increase its leverage on the global arena.

The coronavirus pandemic was a shock for European societies, as it did for all societies around the world. Reaction on the pandemic once again demonstrated that political responsibility for crucial issues of security and economic development lies at a national not at a supranational level. EU institutions, having neither the authority nor the resources for active action, have focused their efforts on coordinating the activities of the Member States. At the same time, the lessons of the pandemic have formed the basis for a number of long-term measures designed to improve governance in the EU. Inter alia, the project of the EU Health Union involves the creation of a more effective system for coordinating the actions of the EU countries in the fight against diseases that carry cross-border risks.

Another example is the investment plan for economic recovery—“Next generation EU”—that was agreed in 2021. According to the plan, the EU would provide 750 bln euros over three years to support the investment activities of Member States. This amount is additional to the regular EU budget; the EU will borrow this money in financial markets. The “Next generation EU” represents a significant step towards the federalization of economic governance and is an important symbol of European solidarity. The mechanism for allocating funds gives to EU institutions more opportunities to encourage beneficiary countries to carry out structural reforms. In long-term perspective, “Next generation EU” is an important step towards the creation of the “federal budget” of the European Union. But this is only the first step; even if the EU continues moving in this direction, much more effort will be needed.

Modern challenges that the EU faces affect the most important achievements of European integration—economy, identity and foreign policy. This gives reason to talk about the systemic crisis, about the need for fundamental reform to adapt the European Union to the new situation. However, despite these crisis phenomena, the European Union continues to function and develop. Today, as in previous decades, the system of regional cooperation built within the EU provides the ground for a stable peace between Member States. People in the EU could enjoy free movement across borders and all the benefits of the Single Market, as well as the comfort provided by a single currency. EU institutions consistently implement numerous sectoral policies. Despite certain turbulence and cases of democracy backsliding, the EU is the region where inclusive societies, stable democratic political regimes, highly developed economies and effective social protection systems exist. Uniting

27 countries, the European Union, despite the existing shortcomings and numerous difficulties, is the main organization structuring the economic and, to a large extent, the political space of Europe.

4 North American Integration

North American integration is represented primarily by the North American Free Trade Area, which has existed since 1994 and is considered one of the largest and most successful groupings of this kind in the world. It arose as a result of signing the NAFTA agreement, which was replaced in 2020 by the US–Mexico–Canada Agreement (United States–Mexico–Canada Agreement, USMCA) after 25 years of existence.

Three countries participate in the North American Free Trade Area: the US economic superpower, Canada, a member of the G7, and Mexico, a large developing state; and are among the top 15 economies in the world in terms of GDP. 500 million people live in this area, and its total GDP is larger than that of the European Union.

When NAFTA was formed, the participating states set different goals for themselves. The US wanted to open the way for its companies to the promising markets of its neighbours, to reduce, if not stop, the influx of illegal immigrants from Mexico, support market transformations there and, in general, improve relations with this largely problematic country. Canada's main motive is to provide guaranteed access to the market of its main trading partner for national goods, which was constantly threatened by the protectionist actions of the US. Mexico hoped that an alliance with the more economically strong US and Canada would strengthen domestic stability, increase confidence among international investors and contribute to the recovery of the national economy. All three countries hoped that the liberalization of intraregional trade and investments would facilitate the structural adjustment of the economy on a continent-wide scale and increase its competitiveness.

Unlike the Treaty of Rome, which laid the foundations of a united Europe and pursued very ambitious goals, neither NAFTA nor the USMCA envisage a subsequent transition to higher stages of economic integration, especially to a political union.

The North American Free Trade Zone did not appear from scratch. The economic rapprochement between the US and Canada began in the 1870s and intensified after the Second World War. The main driving force of this rapprochement is MNEs, mainly the American ones, which, habitually consider the entire continent as a single platform in their investment, production and marketing decisions.

Under the NAFTA agreement, customs duties in trade between the US and Canada were lifted in 1998, tariffs in trade in manufactured goods of these two countries with Mexico were eliminated by 2003 and all other duties have been abolished since 2008. The result was an impressive growth in intraregional trade and investment in the 1990s, which positively affected the economic growth rates in the US, Canada and Mexico.

In addition to completely abolishing customs duties in the trade of goods, the member countries of the North American Free Trade Area have assumed a wider range of obligations that go beyond traditional free trade agreements and correspond to more advanced stages of economic integration. These include liberalization of trade in telecommunications and financial services, a national regime for intraregional investment, a non-discriminatory approach to the government procurement at the federal level, limited labour mobility, enhanced protection of intellectual property rights, restriction of a number of non-tariff protection measures, convergence of national standards and regulatory practices, coordination of elements of the macroeconomic course and also the strictest regulation of trade-related labour and environment issues to date.

For practical implementation, provided for in NAFTA (and then in the USMCA), an institutional structure has been created. It is much more compact and less costly than in the European Union, and most importantly, is not endowed with supranational (directive) powers. The central body is the Free Trade Commission at the ministerial level, which meets annually and makes decisions based on consensus. Two dozen committees work under its auspices, the most important of which is the Competitiveness Committee. The Secretariat is the auxiliary body, NAFTA/USMCA, which has its own mechanism for resolving foreign trade disputes.

At the same time, over the 25 years of NAFTA's existence, some negative aspects have been noted, which caused particular discontent in the US (e.g., Anderson, 2020). At their insistence, NAFTA was revised and replaced with the US–Mexico–Canada Agreement. The new chapters touched upon the following topics: digital trade, anti-corruption policy, competitiveness, proper current regulatory practice, small and medium-sized businesses, macroeconomic policy and the exchange rate. The main text of the USMCA also included chapters on labour relations and ecology, which previously appeared as additional agreements to NAFTA.

Speaking about the advantages that the US received under the USMCA agreement, we can reduce them to three main points: an increase from the previous 62.5–75% of the share of “North American content” in the cost of automotive products, the opening for American farmers of a part of the tightly regulated Canada's dairy market and limiting the validity of the USMCA to 16 years, which makes it easier to get Canada and Mexico to agree to the changes needed by the US under the threat of not extending the agreement (NAFTA was indefinite).

The purpose of the innovations is to modernize a number of outdated provisions, replace the free trade regime in the automotive industry with managed trade, expand export markets for American agricultural products and to return to North America unnecessarily stretched global supply chains in strategic areas (personal protective equipment and medicines, rare earth elements and “critical” minerals, batteries for electric vehicles).

The appearance of the USMCA means that North America has confirmed its course to continue and deepen economic integration until at least 2036, after which the agreement can be extended for the next period. From now on, this integration will take place on more favourable terms for the US, and with the consent of Canada

and Mexico, to American control over the free trade agreements they conclude with “non-market” countries. This strengthens the US position in the trade and economic war with China and rivalry with other strong competitors.

5 Integration in Latin America

Integration in Latin America has a long history. Latin American intellectuals and politicians promoted the idea of integration throughout the postcolonial period. At the present stage (from 1945 to the present), the integration processes in Latin American countries are conventionally divided into two periods: “closed regionalism” and “open regionalism” (characterized by increased economic interaction of the countries of the Western Hemisphere with non-regional players).

The period of “closed regionalism”, sometimes called “old regionalism”, covers the 1960s and 1980s. The goals of integration and the strategy of its implementation were subordinated to the economic model prevailing in most Latin American countries, the main features of which were import-substituting industrialization, protectionism and closed economies. The most important goal of integration was the expansion of domestic markets at the expense of the markets of other Latin American countries. But the benefits of participating in integration associations began to be distributed unevenly, so larger and more developed economies remained in greater gain.

The 1960s were marked by the launch of four integration projects: the Central American Common Market (1960), the Latin American Free Trade Association (1961, then transformed in 1980 into the Latin American Integration Association), the Caribbean Free Trade Association (1968), the Andean Pact (1969) and the Central American Common Market (CAOR). But in general, the results of the integration processes of the 1960s and 1980s in Latin America were limited. The countries of the region have not been able to significantly bring their levels of development closer, increase mutual trade and intensify the movement of national capital.

The second period of integration in Latin America began in the early 1990s and continues to the present day. The period of “open regionalism” is qualitatively different from the period of “closed regionalism”, which saw its main goal as industrialization based on import substitution, and also considered regional integration as a protective tool against competition from developed countries. “Open regionalism” sets itself completely opposite tasks. It would be more correct to say that in the 1990s–2000s integration was considered as one of the instruments of liberal structural reforms. Unlike the “old regionalism”, which focused on mutual trade in goods, the “new” one set itself the goal of significantly expanding the area of economic cooperation of Latin American countries, not only among themselves, but also with the outside world (trade in goods, services; protection of intellectual property rights and investments, as well as admission to public procurement). The attitude of “open regionalism” towards foreign direct investment and MNEs has

changed dramatically—hostility was replaced by a policy of encouraging the inflow of foreign capital.

A significant event of the second stage of integration was the formation in 1991 of the South American Common Market (MERCOSUR), which included Argentina, Brazil, Paraguay, Uruguay and since 2012—Venezuela (its membership was temporarily suspended due to internal conflict). The MERCOSUR integration model differs significantly from the integration models in the Andean and Central American regions in its advancement. Although the basis of decision-making in MERCOSUR is the interaction between the governments of the participating countries, some, albeit limited, powers are delegated to supranational bodies. A single (although rather high, especially for the import of industrial goods) customs tariff was introduced for the benefit of the industrial sector of Brazil (to a lesser extent, Argentina) in 2010, which allows us to classify MERCOSUR as a customs union. Nevertheless, commodity exports within MERCOSUR account for about 12% of the total exports of the Member States of the integration association, which is much lower than the so-called minimum threshold of integration stability—25%.

It can be said that the rapid liberalization of foreign trade in the 1990s contributed to the more active inclusion of Latin American countries in world trade than in mutual trade. This is one of the reasons why centrifugal trends, along with centripetal ones, are strong at the present stage of Latin American integration. A good example is the countries of the Andean Community, where there is a significant increase in exports to Asian countries, primarily to China, with a decrease in the level of mutual trade. Due to the increasing importance of the Asia–Pacific countries in trade with Latin American countries, in 2012, Colombia, Mexico, Peru and Chile formed a new integration association—the Pacific Alliance—aimed at developing and intensifying foreign economic relations with the Eastern and Southeast Asian markets (Table 1).

Latin American integration continues to experience serious problems for other reasons. The uniformity of manufactured export goods, among which a large share is occupied by raw materials and semifinished products, prevents deeper integration in the region. Another significant obstacle is the insufficiently developed transport

Table 1 The share of intraregional trade in Latin America in 2020, %

Integration associations	Share of intraregional trade in association
Latin America	14
USMCA	49
Central American Common Market	24
CARICOM	12
MERCOSUR	10
Andean Community	7
Pacific Alliance	3

Source United Nations Economic Commission for Latin America and the Caribbean

infrastructure: in most countries of the region, there is a limited number of low-capacity transport communications connecting them with neighbouring states. As a result, the coordination of domestic and foreign trade activities within the integration associations of the region is still low.

The minor successes of Latin American integration in its second period are largely due to the fact that, in general, Latin America had not been able to find its economic model in 1990–2020. Enthusiasm for neoliberal recipes has been replaced by disillusionment with them, and as a result, periods of neoliberalism have been replaced by periods of “left turns”. It seems that Latin America is still searching for its “effective” economic model; in this regard, the search for an “effective” model of integration in the region continues.

6 Integration in Indo-Pacific Region

The Indo-Pacific macroregion includes the countries of East, Southeast, South and West Asia, Oceania, North and Latin America, and Africa, with access to the Pacific and Indian Oceans.

6.1 Leading Integration Associations

One of the leading integration associations in the macroregion is the Association of South East Asian Nations, ASEAN, which includes Brunei, Vietnam, Indonesia, Cambodia, Laos, Malaysia, Myanmar, Singapore, Thailand and the Philippines. For 55 years, ASEAN has gone from the preferential trade area (1977) to the free trade area (2000) and to the ASEAN Economic Community in the free trade area format. The main achievements of ASEAN: duties in mutual trade have been eliminated; a high degree of liberalization of non-tariff regulation including a “green corridor” to simplify customs clearance of goods has been achieved; trade in services has been significantly liberalized based on the principle of mutual recognition; mutual investments have been significantly liberalized; the skilled labour market has been liberalized to a lesser extent. The economic community should be formed by 2025.

The achieved results allowed increased integration interaction: the share of intraregional exports in the total exports of ASEAN is 23.3%, and the share of intraregional FDI in the total volume was 16.6% in 2020.

In Oceania, there is the Australia–New Zealand Closer Economic Relations Trade Agreement (ANZCERTA) between Australia and New Zealand (1983). The agreement became the world’s first bilateral free trade area covering trade in services. The markets of goods, services and persons have been fully liberalized, and mutual investments have been partially liberalized. Despite the advantages achieved, the level of integration interdependence is low: the share of intraregional exports in total exports is 4.0%.

In South Asia, the South Asian Association of Regional Cooperation (SAARC) stands out as part of Afghanistan, Bangladesh, Bhutan, India, Nepal, the Maldives, Pakistan and Sri Lanka (1982). Since 1993, SAARC has been operating as a preferential trade area. From 2015, the free trade area was going to appear, but this did not happen. Only India and Pakistan reduced the average duty rates to 0–5%. Small progress has been made in the liberalization of trade in services and the mobility of individuals. In general, insignificant results in the implementation of the set goals did not stimulate the growth of interdependence of the member countries: the share of mutual exports is 7%, and the share of mutual investments is 1% in aggregate indicators.

In the twenty-first century, interregional integration projects began to be actively promoted in the region, including in the format of mega-partnerships. The first example is the Asia Pacific Economic Cooperation Forum including 21 economies. Considerable results have been achieved: average duty rates have been reduced to 5.3%, standards for individual product groups have been harmonized and transaction costs have been reduced by 5%. But the free trade area planned by 2020 was never created; a new deadline for formation—2040—was set at the summit (2021).

Since the end of 2018, the mega-partnership Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) has entered into force as part of Australia, Brunei, Vietnam, Canada, Malaysia, Mexico, New Zealand, Peru, Chile, Singapore and Japan. It is planned to eliminate duties on 98% of goods within 0–20 years; eliminate export subsidies for agricultural products; and liberalize trade in services and mutual investments. In general, the text of the Trans-Pacific Partnership agreement includes 30 sections, including the protection of intellectual property rights, support for state-owned companies, regulation of labour relations, environmental protection and infrastructure construction.

Another mega-partnership, the Regional Comprehensive Economic Partnership (RCEP), appeared in 2022 as part of Japan, China, the Republic of Korea, Australia, New Zealand and 10 ASEAN countries. It is the world's largest free trade area with a share of 31.4% of the global GDP. The main obligations of the countries include elimination of duties for 0–20 years in respect of 65% of goods; non-use of subsidies for agricultural exports; liberalization of 65% of service sectors; harmonization of intellectual property rights protection standards; and prohibition of production requirements in the field of investment. The potentially successful implementation of liberalization measures will be affected by: (1) the validity of the ASEAN+1 agreements,² (2) a high degree of integration interdependence—39.2% in 2020. ADB (2020) estimates that the combined benefits for participating states should amount to \$174 billion (0.4% of total GDP) by 2030.

In 2020, the world's first specialized Digital Economic Partnership Agreement (DEPA) was signed by Singapore, New Zealand and Chile in order to form common rules for regulating trade in digital products and services. The main norms are non-discrimination in the trade of digital products; elimination of duties in electronic

² Free trade areas ASEAN + China, ASEAN + Japan, ASEAN + Republic of Korea, ASEAN + Australia and New Zealand.

transactions; expansion of cooperation between small and medium-sized companies for the exchange of information and best practices in the use of digital technologies; the operation of a dispute resolution mechanism.

6.2 Trends and Challenges

Indo-Pacific is the most integrated macroregion, accounting for 1/3 of the integration agreements of the world. The format is dominated by free trade areas, primarily bilateral, and the number of mega-partnerships is growing.

Another trend is the high level of development of global value chains in East and Southeast Asia. Trade liberalization stimulates the business of companies, primarily the Japanese and Chinese ones. With the help of integration associations, an effective supply chain has been developed for the production development and the expansion of domestic demand. This factor contributes to high interdependence, when the share of intraregional exports in the total exports of the region is 39.8%. China, Hong Kong, Japan, the Republic of Korea, Taiwan and Singapore are among the top 15 world exporters and importers of semifinished products.

One of the trends and problems is the asymmetry of integration processes, when countries with different levels of economic development participate in the unification. For example, in ASEAN, the gap in per capita income reaches 47 times, in GDP—83 times. This situation contributed to the implementation of the multi-speed integration scheme and the provision of at least developed countries with a special trade regime.

Another problem is the low economic interdependence in most integration associations (see Table 2).

Table 2 The share of intraregional exports in the total exports of Indo-Pacific integration associations, %

	2016	2017	2018	2019	2020
ASEAN	24.1	27.0	24.0	23.3	23.3
SAARC	6.8	7.0	8.0	7.1	7.0
Pacific Forum	7.9	6.7	6.3	5.8	5.6
ANZCERTA	5.5	4.7	4.4	3.9	4.0
Trans-Pacific Partnership	14.9	14.5	14.5	13.9	13.4

Source Calculated: Trade statistics for international business development, https://www.trademap.org/Bilateral_TS.aspx?nypm=

6.3 *Integration Challenges*

The main challenge of integration in the macroregion is the influence of the leading countries. The geopolitical and economic interests of the leading powers are aimed at developing integration to strengthen security, access to markets, natural resources and cheap labour.

In East Asia, such leaders are Japan and China, which have formed a hub and spokes model in the region in the “bicycle” format, which includes two hubs with spokes located around them based on free trade agreements.

China’s policy of strengthening its influence in East Asia has become an incentive for Japan to activate since 2000 the signing of 19 integration agreements in the format of economic partnership agreements, which are regarded as deep free trade agreements. China’s political ambitions are reflected in the One Belt, One Road investment project aimed at improving transport connectivity, including in the countries of East and Southeast Asia.

The integration processes in South Asia are greatly influenced by the political confrontation between India and Pakistan, which is based on the territorial dispute over the state of Kashmir. This situation corresponds to the interests of China, which has invested large sums of money in the Pakistani economy (the China–Pakistan Economic Corridor project by 2030). Chinese policy is aimed at reducing India’s influence. With this in mind, the Indian policy of “Neighbourhood First” has changed in favour of bilateral integration agreements with neighbouring countries and inter-regional agreements. In general, the growth of China’s geopolitical interests has become an incentive for developing integration processes in the region due to the fear of states becoming politically and economically dependent on the PRC.

The influence of the US cannot be discounted either. The administration of J. Biden focuses on military–political alliances in the region with elements of economic interaction, such as the Australia–UK–US (AUKUS) security alliance created in 2021 to integrate science, technology, industrial bases and global value chains related to security and defence. So far, the US has signed 4 out of 15 free trade agreements with Indo-Pacific countries.

The most integrated Indo-Pacific macroregion is characterized by such trends as the predominance of free trade areas and bilateral integration agreements; an increase in the number of mega-partnerships; asymmetry of integration processes; and hub and spokes models. The main challenge is the influence of leading countries like China, Japan, India and the US pursuing their geopolitical and economic interests.

7 *Integration in the Middle and Near East*

In this region, integration processes are taking place primarily in the Arab world. The Arab world has been trying for a long time to use the integration mechanism to accelerate economic growth. However, these countries, which are geographically

close and have a common culture, have not yet created an effective integration association at the regional level. Only the Arab monarchies of the Persian Gulf have had any success.

The region-wide integration association in the Middle East is the League of Arab States (LAS), an intergovernmental organization established in 1945. In addition to the 18 Arab States, it includes Somalia, Djibouti, the Comoros and the Palestinian National Authority. In addition to solving political problems, this organization also deals with economic issues.

Back in 1964, the participants of the Arab League signed an agreement on the creation of a common market, i.e., bypassing two forms of lower-level integration at once (a free trade zone and a customs union), but such an acceleration of economic rapprochement did not yield results—the agreement was never implemented. After a long pause since 1998, the creation of the Pan-Arab Free Trade Agreement (PAFTA), which received the second name of the Greater Arab Free Trade Area (GAFTA), PAFTA includes 18 of the 22 states of the Arab League. This project was supposed to be implemented within ten years, but it was already completed in 2005, ahead of schedule. However, although in the same 2005, the leaders of the Arab League announced plans to create a customs union by 2010, and even an Arab Common Market by 2020, the creation of a free trade zone has not actually been completed. Mutual customs duties have been eliminated, but many PAFTA member countries continue to apply non-tariff barriers in inter-Arab trade, sometimes elusive technical measures create great scope for protectionism, and political differences are still strong. If we take the economic sphere, the Arab countries did not have enough incentives for integration, since their industry structures of the same type were protected by protectionist barriers of the same type.

Nevertheless, the functioning of the free trade zone within the framework of the PAFTA contributed to the dynamics of aggregate and mutual trade turnover, which increased 1.9 times to \$188 billion in 2009–2019, and the share of mutual trade within the framework of the PAFTA in total trade turnover increased from 10 to 14.5%, although it is much inferior to trade with OECD countries, which account for half of the foreign trade turnover. Nevertheless, further slow strengthening of NAFTA is possible in the current decade, although the creation of a customs union and, moreover, a common market in the Arab region, in the foreseeable future seems problematic. Under these conditions, the integration vector has shifted to the subregional level.

The Gulf Cooperation Council (GCC) is a subregional integration association consisting of six Arabian oil-producing countries—Bahrain, Qatar, Kuwait, the United Arab Emirates (UAE), Oman and Saudi Arabia. The decision to establish the Council was made in 1981 and was initially due to the political and economic weakness of each of the Gulf countries separately, and not to the high level of their mutual economic integration, which needed to be stimulated. Having passed the free trade zone stage during the first 20 years, the GCC participants reached the Customs Union stage by 2009 (a single 5% tariff on goods imported from third countries was introduced). Although the share of mutual trade here is only 8–9%, if we consider the share of intraregional Arabian trade excluding oil exports, this figure will increase

to 33–36%. Such a “purification” of foreign trade from oil allows us to assert that the manufacturing industry and services are much more focused on the market of the Arabian Customs Union than in the whole Arab League, and this in turn indicates the success of this subregional integration model, making it “the most successful attempt at regional integration in the MENA region” (Grow 2019).

Further development of integration in this subregion of the Middle East, as in previous years, is hampered by disagreements between Saudi Arabia and other Gulf countries, primarily the United Arab Emirates. Unlike the UAE, Saudi Arabia defends the principle of closed regionalism, which implies the preservation of tariff and non-tariff barriers along the perimeter of the customs union and higher-level integration associations planned for the future (common market, economic and monetary union). Political conflicts cannot but affect the situation—for example, a boycott of Qatar by the rest of the GCC members was introduced in 2017. Nevertheless, the formation of a subregional common market is proceeding dynamically—the restrictions on the movement of capital and labour within the borders of the GCC have already been lifted. The formation of a monetary union with a common currency is on the agenda, but there are some contradictions between the countries on many issues of its functioning. As a result, such criteria for the transition to an economic and monetary union as inflation targets, the maximum allowable level of the ratio of the budget deficit and public debt to GDP have not yet been established.

Israel was in its region in almost complete economic and political isolation for most of the period under review. In this regard, its government for many years sought the country’s participation in the integration processes taking place in its main trading partners—Western Europe and North America, and tried to institutionalize this participation. In 1975, an agreement was signed on the gradual establishment of a free trade zone for industrial goods between the EEC and Israel, and in 1995 Israel became an associate member of the EU (the agreement entered into force in mid-2000) with all the ensuing consequences: a sharp expansion of the free trade zone between Europe and Israel, the latter’s connection to the central scientific and technical programmes of European countries, mass exchange of students and cooperation of universities. While Israel was becoming involved in the Western European integration process, its economic cooperation with the US deepened, especially after the signing in 1985 of an agreement on the gradual establishment of a free trade zone between the two countries by 1995. Already in the early 1990s, the bulk of Israeli exports had free access to the US. A significant difference between the US-Israel free trade zone was the liberalization of trade in a wide range of services: transport, tourism, communications, financial services, engineering, consulting and advertising (this important area of trade for Israel is not covered by agreements with the EU). At the same time, in 1994, Israel and the disintegrated and economically underdeveloped Palestinian territories were artificially united into a customs union with the use of violent measures. The preparation of the agreement on the free trade zone of Israel and the Eurasian Economic Union is entering the final stage.

Integration processes in the two leading countries of the Middle East—Turkey and Iran—proceed in a different geographical direction—in the form of unification with the rest of the countries of this subregion, as well as with Central Asia. It should

be noted that although Turkey focused its foreign trade primarily on this integration group after joining the customs union with the EU in 1996, the current stage of Turkish–European relations is characterized by uncertainty regarding Turkey’s obtaining the status of a full member of the European Union, and Turkey is actively developing trade with other countries.

In 1964, the organization of Regional Cooperation for Development was established, uniting Turkey, Iran and Pakistan, but it achieved modest success and its successor was formed in 1985. The Economic Cooperation Organization (ECO). Since 1992, ECO activities have intensified due to the accession of all five Central Asian states, as well as Afghanistan and Azerbaijan. The ECO’s work is similar to that of the Arab League, but is more focused on stimulating economic, rather than political, cooperation. A free trade zone, and then a common market, should be created soon. However, this is hindered by the modest size of mutual trade—it accounts for only 7% of the turnover of the ECO member countries. The weak pace of economic rapprochement between the ECO countries is the result of differences in their economic development and the foreign policy differences between them.

8 Integration in Sub-Saharan Africa

Today, there are 15 regional economic communities (regional integration organizations) operating in Sub-Saharan Africa, 8 of which are approved within the framework of the African Union as a support for the Africa 2063 strategy (see chapter “[Sub-Saharan Africa](#)”). These are ECOWAS (Economic Community of West African States, 15 member states), SADC (Southern African Development Community, 16), COMESA (Common Market for Eastern and Southern Africa, 21), EAC (East African Community, 6), ECCAS (Economic Community of Central African States, 11), CEN-SAD (Community of Sahel-Saharan States, 29), IGAD (Intergovernmental Authority on Development, 8), UMA (The Arab Maghreb Union, 5). In addition, numerous organizations of neighbouring countries for joint water resources management and development of river and lake basins operate in the region, through which dozens of transboundary rivers flow. There are a lot of such organizations, primarily due to the fact that many countries are often members of several integration associations at the same time.

The peculiarities of the nature and pace of integration processes in the region are due to both its dependent position in the world economy and its strong backwardness in the form of traditional institutions and norms of economic culture (most of the countries of the region belong to the least developed countries).

The main goals of most African regional communities are proclaimed: (a) promoting cooperation and integration in economic, social and cultural spheres to eventually create an economic and monetary union; (b) improving the standard of living; (c) maintaining and strengthening economic stability, good neighbourly relations between member states; (d) promoting progress and development of the entire continent.

To date, the goals of creating a regional common market with the abolition of customs duties and other restrictions in mutual trade, and the movement of capital and labour resources have been achieved only partially, and not by all regional economic communities, although some of them were formed in the colonial period on the basis of customs unions.

The main direction of movement towards economic unification remains the development of inter-African trade, the share of which in the total turnover of the whole of Africa exceeded 17% in the last decade compared to 11.5% in 2001, and is primarily due to mutual imports, since the exports of most of the countries of the region still consist of a very narrow nomenclature (raw materials, fuel, semifinished products) and is also focused on the countries outside the region.

The share of inter-African exports in the continent's total exports increased to only 11.5% compared to 10.3% in 2001, mainly due to exports of goods from less developed African countries to more developed ones. Today, the five leading economies of the continent—Côte d'Ivoire, Nigeria, Ghana, Kenya and South Africa—provide 75% of all intra-African exports due to their regional groupings. The current situation has served as an impetus for the consolidation of the existing economic communities. EAC, SADC and COMESA are organizing a Trilateral Free Trade Area (Tripartite FTA, T-FTA) putting an emphasis on joint infrastructure development and industrialization, which will undoubtedly contribute to the promotion of market integration.

The development of inter-African trade remains the main direction of movement towards pan-African economic unity, as evidenced by the “launch” of the African Continental Free Trade Area (AfCFTA) in 2021—the world's largest in terms of the number of FTA participants with a market uniting all 55 African Union member states with a population of about 1.4 billion people, and a total GDP of more than USD 3.4 billion.

The expansion of regional monetary and financial integration is especially relevant for the region, where several integration unions have already been formed on the basis of the zones with a single currency. These are the East African shilling in EAC, and the CFA franc—in ECCAS and UEMOA (the West African Economic and Monetary Union of 8, mainly francophone West African states within the ECOWAS). In the 2010s, we could witness the active work of the African Development Bank Group founded in 1964 by the Organization of African Unity, which was the predecessor of the African Union, for financing African development, as well as subregional development banks: West African Development Bank (WADB), Central African States Development Bank (CADB) and East African Development Bank (EADB), aimed at lending to infrastructure projects in regional associations.

Intraregional labour migration is particularly active in West Africa and Central Africa, which is due to the predominance of small countries with historically strong economic ties between various population groups within many of them and the region as a whole. The role of integration measures is also important (the introduction of visa-free travel and unified passports within the ECOWAS and the freedom of movement between participating countries guaranteed to migrant workers in the EAC, etc.).

Nevertheless, despite all these achievements, in general, it can be concluded that inter-African integration is still inferior to other regions of the world.

9 Integration Process in the Post-Soviet Area

Integration processes between the countries that were formerly part of the USSR have a short history—a little more than 30 years—and cannot boast of notable successes. One of the main reasons for this situation lies in the relative slowness and inconsistency of the state and national identity of the new post-Soviet countries.

The Soviet Union de facto represented the highest stage of international economic integration, as it is understood by the standard theory of integration: a quasi-confederation of republics with a very strong supranational institutional elite, whose administrative power was an order of magnitude higher than the current level of European bureaucracy. As a result, we could see a high degree of coherence of the macroeconomic policy of the republics and the executive discipline. Economic science in the USSR focused primarily on improving the intersectoral and intra-sectoral labour division within the framework of a single economic complex, as well as “socialist integration” between the USSR and Eastern European countries. Therefore, after the collapse of the USSR and the rejection of the principles of macroeconomic planning, a theoretical vacuum was formed in the development of integration ties between countries that had made a single economic system.

A quick and forced response to the theoretical lacuna was the unification of scientific developments in the field of “socialist integration” and a number of provisions of international economics. In December 1991, the Commonwealth of Independent States (CIS) was created; only the Baltic republics did not join it. Due to such hybridization, the CIS cannot be attributed to any of the forms of integration identified by international economics, although it is close to a free trade zone. Nevertheless, it was the first institutionalized mechanism for solving specific tasks of the post-Soviet space,

The CIS is positioned as a regional intergovernmental organization designed to promote comprehensive cooperation between the ex-USSR republics (except for the Baltic States). The CIS was based on the concept of the “near abroad” that appeared at the very beginning of the 1990s, which assumed the rapid reintegration of all new states formed after the collapse of the USSR. The basis of this concept was the following provisions:

- preservation of technological and structural complementarity of national economies (although consistently narrowed);
- sharing-oriented placement of industry, population and transport network;
- remnants of the common socio-cultural and scientific-technical heritage.

However, it soon became clear that a “common past” could not be a sufficient condition for a “common future”. The growing awareness of their own economic interests in the post-Soviet states, combined with the political ambitions of national

elites, significantly complicated the integration intentions. Changes in the mood of the population were also superimposed on the following: at first, the people of the new states had nostalgic expectations and wished for reintegration, but later, as they settled their way of life and got used to the new economic realities, their readiness for reintegration noticeably weakened. In fact, integration measures were poorly demanded, and, as a result, not completed.

One of the proclaimed functions of the CIS is the development of economic cooperation through trade liberalization. However, the trade connectivity of the CIS is gradually decreasing: the share of mutual supplies within the CIS in the total turnover of the CIS countries was 28% in 1995, 24% in 2005 and 19.5% in 2020. Against the background of some integration associations in Latin America or Africa, these indicators are quite high, but at the same time this trend means that the CIS countries are more open to foreign markets than developing mutual trade. In 2010–2019, the total volume of foreign trade of the CIS members increased by 23.8%, while mutual trade between the Member States increased by only 6.9%.

Today, the CIS as a potential integration format has a rather fuzzy character. This is mainly due to the fact that the Member States, which are at different stages of formation and nation-building, hold very different views on the future of the CIS and thereby pull the organization in different directions. Three Baltic States and Georgia are not CIS members, and Ukraine has a contradictory status, since it has not ratified all the documents that allow full CIS membership. Ukraine does not actually consider itself a CIS member and is actively engaged in denouncing agreements and treaties previously signed within the framework of the Commonwealth. Turkmenistan retains the status of an associate observer member after the status of permanent neutrality was proclaimed.

The CIS should not be considered as the only mechanism of cooperation and integration between post-Soviet states. The concept of multi-speed integration, which appeared in the mid-1990s, tried to take into account the strong fragmentation of the CIS space, and therefore provided for the creating of a form of higher integration association within the CIS by interested countries. This led to the fact that, at a certain period, the post-Soviet space witnessed almost all possible forms of integration at the same time, starting from a free trade zone and ending with a quasi-political union (between Russia and Belarus).

Such a wide representation of various types of integration associations can be considered, on the one hand, as a testing ground for practising the skills of coordinating positions and finding compromises, and on the other hand, as an imitation of integration. Most of these associations remained unrealized projects, or were put out of existence when their participants joined other more effective integration associations.

To date, the following formats actually operate in the post-Soviet space:

- Free trade zone within the CIS: its 9 member countries account for over 90% of the Commonwealth's mutual trade. This FTA has numerous exemptions (for example, export and import duties, transit of products by pipeline transport, etc.).

In addition, its provisions are currently not valid in Russian–Ukrainian relations, and trade restrictions are also applied in Russian–Moldovan relations between;

- the Eurasian Economic Union (EAEU), which was established in 2015 with the aim of gradually creating a single economic space and sustainable economic development of the Member States (Russia, Belarus, Kazakhstan, Armenia and Kyrgyzstan). The EAEU has a single market for goods, significant progress has been made in the formation of a market for services, a single Customs Code is in effect, and freedom of movement and social guarantees of citizens are provided. Among the significant problems, one can note the weak coordination and harmonization of cooperation between the EAEU members with third countries.
- The Union State of Russia and Belarus, which is an established customs union and an emerging common market with some exceptions, and also has the beginnings of coherence (but not unification) of economic policy, especially noticeable in the field of the harmonization of economic legislation, monetary and fiscal policy. However, the issues of a single currency, a coordinated tax policy and political integration have not yet been raised.

In general, there are three features in the post-Soviet space from the point of view of economic integration:

- the predominance of formal state approaches, when the momentum of integration generated at the macro level by the political elite is formalized in various integration institutions (for example, in the form of a set of intergovernmental agreements, a system of relevant integration organizations, etc.), the requirements of which are then translated to the micro level;
- the division of post-Soviet states according to integration priorities, caused by the current civilizational positioning of the respective countries' political elites. Russia as a self-sufficient civilization seeks to realize its historical role as the centre of the post-Soviet space, and at the same time position itself as a centre of power equal to the West through integration. Other CIS countries strive to pursue a balanced policy on the main external vectors, but one can distinguish the states currently focused on European integration (Georgia, Moldova and Ukraine), on Eurasian integration (Belarus, Kazakhstan, Kyrgyzstan, Tajikistan and possibly Armenia) and the nationally oriented ones (aimed at a potential integration into the “Turkic world”).
- when creating integration associations between the CIS countries, “soft” approaches are used, assuming the absence of strict criteria for compliance of participants with any economic, political or social parameters, as well as a high prevalence of advisory decisions (except for the EAEU, which is gradually going to turn into a supranational integration body) and decision-making by consensus.

10 Conclusions

1. The theories of economic integration of the 1950s and 1980s, presented in different directions, were based on the successful experience of European integration. Since the 1990s, the views of economists have been evolving towards the justification of integration processes in developing countries and the importance of direct investment for the development of integration.
2. Important trends of international economic integration include the dynamic growth of the number of integration associations, primarily in the format of free trade areas; the growth of mega-partnerships; increased participation of developing countries in integration processes; the effect of the “spaghetti bowl”; and the expansion of the scope of integration agreements.
3. The European Union has long been a pioneer in the field of economic integration, having achieved full coverage of its participants by the stage of a fully fledged common market and partial coverage by the stage of economic and monetary union. But the further deepening European integration has been stalling, and the European Union itself has ceased to be a benchmark from an economic point of view, although it remains attractive to potential participants from a political point of view.
4. North American Integration (NAFTA-USMCA) is represented by a de facto free trade zone, but with elements of harmonization of the economic policies of the participating countries. However, the strong disequilibrium of the participants makes it difficult to move towards more advanced forms of integration.
5. Latin American integration during the period of “closed regionalism” (1960–1980) focused on import-substituting industrialization, protectionism and the expansion of domestic markets at the expense of the markets of other Latin American countries. With the transition to “open regionalism” in the early 1990s, attention is being paid to liberal structural reforms involving the expansion of economic cooperation between Latin American countries, not only among themselves, but also with the outside world, as well as stimulating the inflow of foreign capital.
6. Indo-Pacific macroregion is characterized by such trends as the predominance of free trade areas and bilateral integration agreements; an increase in the number of mega-partnerships; asymmetry of integration processes; and the hub and spokes model. The main challenge is the influence of leading countries like China, Japan, India and the US pursuing their geopolitical and economic interests.
7. The long attempts by Arab countries to use the integration mechanism to accelerate economic growth have not yet resulted in the creation of an effective integration association at the regional level, although the Gulf countries have had some success.
8. The peculiarities of the nature and pace of integration processes in the Sub-Saharan region can be explained by its dependent position in the world economy and severe backwardness. To date, the goals of creating a regional common market with the abolition of customs duties and other restrictions in mutual

trade, and the movement of capital and labour resources have only been partially achieved. Despite a number of achievements in the field of regional integration, inter-African integration is still significantly inferior to other regions of the world.


9. The CIS is a rather vague integration format, since there are some differences in the stages of formation and nation-building of the CIS Member States and pluralism of views regarding the future of the CIS. The peculiarity of the CIS is the predominance of formal state approaches combined with the absence of strict criteria for the compliance of potential participants with any parameters, as well as the division of post-Soviet states according to integration priorities

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Resources of World Economy: Human Capital



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Abstract Human capital is considered as the main economic resource of the world, global and national economy. Both the number of labour resources and their quality are analysed. At the same time, special attention is paid to the availability of the resources of knowledge and entrepreneurial skills. Considering that human capital develops under the strong influence of the social sphere, the models of the state's social policy are analysed.

1 Introduction

The main economic resource of the national, world and global economy are people who are able to work. In economic theory, they are called labour resources (labour). But the radically increased importance of another economic resource—knowledge—leads to the fact that the economy needs not just labour resources, but qualified, preferably healthy and enterprising workforce. Hence, the constant assessment of labour resources in terms of not so much their quantity as their quality and, above all, their knowledge, as well as entrepreneurial skills. Given that human capital is developing under the strong influence of the social sphere, the chapter also analyses the models of the social policy.

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2 Human Capital as a Sum of Economic Resources

2.1 Definition

The term “human capital” in a narrow sense means labour resources (labour force, workforce) together with their education, in a narrow sense—the economic value of a worker’s experience and skills, including such assets like education, training, intelligence, skills, health, diligence and punctuality. It can also be understood as a person’s ability to work, which brings him income and is determined primarily by his education, i.e., the stock of knowledge (e.g., CIPD, 2017).

To assess the country’s human capital, it includes the accumulated cost of all expenses for education, training and retraining of the workforce. This is the most common, albeit narrow, assessment of human capital, which simply means the sum of two economic resources—labour and knowledge. The broader estimate also includes spending on health, culture and recreation, housing, transportation and other social expenses. Finally, entrepreneurial abilities (entrepreneurial resources, entrepreneurship) can also be included in a country’s human capital, although this is a rarer definition of a country’s human capital.

The theory of human capital considers the above expenses as investment in this capital. At least three things become clear—why large social expenditures, low investment in real capital and high wages are characteristic of the post-industrial economy. It can be said that at this stage of economic development, large investments in the quality of labour resources are necessary, therefore the flow of investments is largely reoriented to investments in human capital (although in statistics they are mostly considered as consumption expenditures rather than investments) and these large expenditures explain the high cost of labour resources in the post-industrial economy.

2.2 Measurement of Human Capital

There are various approaches to measuring the value of human capital, based on both narrow and broad assessments. The World Bank has begun to calculate the Human Capital Index with an emphasis on the younger generation, summing up the expected duration of schooling and its quality, as well as the health status of this generation. According to the data available to the Bank, in 2020, Singapore, Hong Kong, Japan, South Korea, Canada took the first five places (out of 174 countries), followed mainly by Western European countries; the USA took 35th place, Russia—41st, China—45th, Brazil—92nd, India—117th, South Africa—136th.

A broader picture for all ages is given by UNIDO in its Human Development Index, which is calculated as the arithmetic mean (maximum 1 point) of four sub-indices—the life expectancy at birth, expected years of schooling, mean years of schooling, GNI per capita by PPP. The latest calculation of this index covered 189 countries (see Table 1).

Table 1 Human Development Index by countries

Country	Components				
	Human Development Index, value	Life expectancy at birth, years	Expected years of schooling, years	Mean years of schooling, years	GNI per capita, \$ 2017 PPP
Norway	0.957	82.4	18.1	12.9	66,494
Ireland	0.955	82.3	18.7	12.7	68,371
Switzerland	0.955	83.8	16.3	13.4	69,394
Hong Kong, China (SAR)	0.949	84.9	16.9	12.3	62,985
Iceland	0.949	83.0	19.1	12.8	54,682
Germany	0.947	81.3	17.6	14.2	55,314
USA	0.926	78.9	16.3	13.4	63,826
Japan	0.919	84.6	15.2	12.9	42,932
Russia	0.824	72.6	15.0	12.2	26,157
Brazil	0.765	75.9	15.4	8.0	14,263
China	0.761	76.9	14.0	8.1	16,057
South Africa	0.709	64.1	13.8	10.2	12,129
India	0.645	69.7	12.2	6.5	6681

Source UNDP (2020)

2.3 Economically Active Population: The Example of Russia

In statistics, the potential workforce includes the working-age population (in Russia, since 2019, it has been increasing annually for six months and by the end of 2028 it will be 16–59 years old for women and 16–64 years old for men). If students, military personnel, disabled people, unemployed housewives are excluded from these potential employees, and working pensioners and teenagers are added, then the remaining part represents labour force (workforce). It includes both the working and the unemployed. In Russia, with its 147 million population, potential labour resources at the beginning of 2022 amounted to about 83 million (excluding illegal immigrants), and labour force was equal to 76 million people, including 3.2 million unemployed.

The supply of labour in a country is determined by the natural growth of its population and external migration. In Russia, this proposal is strongly affected by the consequences of the demographic catastrophe of the 1990s, when the birth rate fell by 1.5 times, mortality also increased by 1.5 times, as a result of which natural population growth recovered only in 2012–2015, although then it became negative again, especially during the COVID-2019 pandemic. However, migration growth helped to compensate for the natural decline of the population. In 1992–2021, about 15 million people (mainly from the former Soviet republics) entered Russia for permanent residence, and about 7 million people left. Besides, temporary labour

migration has a significant impact on the labour supply: according to estimates, the number of temporary labour immigrants in some years may exceed 10 million people.

The demand for labour in a country is determined primarily by its economic dynamics. For example, low rates of economic growth in Europe lead to tangible unemployment even in conditions of a slowly growing population. In Russia, the labour shortage was keenly felt at the end of the economic recovery of the 2000s and ceased to be critical in the years of subsequent stagnation.

The employment structure in the developed and most advanced developing countries is characterised by features typical of the post-industrial stage—very low employment in the primary sector and the movement of labour from the secondary sector to the tertiary one (in Russia in 1990, 44.5% of the employed workforce was employed in it, 56% in 2000, 66% in 2021).

2.4 Entrepreneurship as a Resource

Entrepreneurial resource (entrepreneurial abilities, entrepreneurship)—is the ability to effectively organise the interaction of all other economic resources—labour, knowledge, capital, land—for the implementation of economic activities. This resource is represented by entrepreneurs, entrepreneurial (market) infrastructure, as well as entrepreneurial culture and psychology.

Entrepreneurs include owners of firm companies, their middle and top-level managers (i.e., those who make managerial decisions), as well as individual entrepreneurs (sole proprietors).

The entrepreneurial (market) infrastructure encompasses various institutions of the market economy—not so much banks and exchanges, insurance and audit companies, consulting and law firms, economic legislation in general, as basic market institutions—the protection of private property and freedom of entrepreneurship, especially competition and the burden of government regulation.

The third element of an entrepreneurial resource is the culture of entrepreneurship: if the culture of entrepreneurship has a long history, if entrepreneurial ethics (and not only national legislation) does not allow cheating of a partner, if a significant part of society is psychologically inclined to entrepreneurship (this is called the entrepreneurial spirit of society), then such culture and psychology contribute to the high entrepreneurial potential of the country.

It can be argued that the entrepreneurial resource is more abundant in the conditions of the most liberal economy, and also if there are a lot of experienced and educated entrepreneurs in it, the market infrastructure is developed, the entrepreneurial culture has deep roots, and the very spirit of society is not just benevolent to entrepreneurship, but is permeated by the desire for it among a significant part of the population. Such characteristics are primarily possessed by developed countries, most of which have cultivated an entrepreneurial resource for centuries (Europe) or are heirs of the old entrepreneurial culture (USA, Canada, Australia), as

Table 2 Some indicators of the infrastructure and culture of entrepreneurship in the BRICS countries

	China	India	Russia	Brazil	South Africa	<i>Memo: USA</i>
Property rights, 1–7 (best)	4.6	4.4	3.7	3.9	4.1	5.6
Domestic competition, 0–100 (best)	57.5	56.9	55.2	45.0	53.1	70.2
Burden of government regulation, 1–7 (best)	4.4	4.1	3.2	1.7	3.0	4.5
Incidence of corruption, 0–100 (best)	39.0	41.0	28.0	35.0	43.0	71.0
Reliance on professional management, 1–7 (best)	4.5	4.8	4.0	4.5	4.6	5.7

Source WEF (2019)

well as newly developed and newly industrialised countries with deep trade traditions (especially in Asia).

Let us compare the infrastructure and culture of entrepreneurship in Russia with other BRICS countries, using only some indicators (see Table 2). As we can see from the table, China and India are ahead of Russia, Brazil and South Africa according to such indicators of business infrastructure as the protection of property rights, competition in the domestic market and the severity of state regulation. At the same time, their indicators of entrepreneurship culture, such as the prevalence of corruption, and reliance on professional management, differ little from those of Brazil and South Africa.

3 Knowledge as a Resource

3.1 *The Concept of the Knowledge Economy*

The increased importance of knowledge, which is becoming an increasingly significant part of human capital, reflects the concept of the knowledge economy, or knowledge-based economy. Now, this term is used to define a type of economy in which knowledge plays a crucial role, and the production of knowledge is a source of growth.

The term “knowledge economy” was introduced into the scientific sphere back in the 1960s by Fritz Mahlup, who singled out the “knowledge industry” as a separate sector of the economy in which both the production and processing of knowledge and their management take place. Peter Drucker is considered the author of the term “knowledge-based economy”. In its modern form, the concept of the knowledge economy was formed by the end of the 1990s. Special attention is paid to such aspects as mechanisms for the creation, dissemination and management of knowledge, assessment of the contribution of knowledge to economic growth, the role of scientific and technological exchange between firms, analysis of the features of national innovation systems.

International organisations have made a significant contribution to the development of theoretical aspects of the knowledge economy, primarily the approaches to its definition and measurement. According to the definition of the World Bank, the knowledge economy is a set of all types of economic activities aimed at the creation, dissemination and application of knowledge. But the OECD classifies the knowledge economy primarily as knowledge-intensive high-tech industries, as well as service industries—the main users of these products (fintech, business services, communication services, information technology services, software, research and development services, some social and housing and communal services, education, healthcare). At the same time, knowledge-intensive industries include the fields with a high intensity of research and development costs¹ distinguishing among them medium-tech high-level industries, high-tech industries of the highest level (leading edge) with even higher R&D costs (this is the aerospace industry, electronics, manufacturing ICT, pharmaceutical industry and others). The European Bank for Reconstruction and Development (EBRD) sees the knowledge economy as a concept of economic development in which innovation (for example, digitalisation) and access to information (for example, via the Internet) drive productivity growth,² i.e., as an economy that is able to grow through innovation or, in other words, by increasing total factor productivity. Therefore, the EBRD considers not only high-tech industries as participants in the knowledge economy, but also those traditional sectors of the economy (for example, agribusiness, energy, transport and infrastructure) that are characterised by “technological dynamism”.

3.2 The Scale of the Knowledge Economy in Countries/Regions of the World

Different concepts of the knowledge economy also determine different estimates of its scale. The spread of knowledge can be assessed by calculating the contribution to GDP of the volume of economic activity of the industries where new knowledge is mainly consumed (i.e., those sectors of the economy that have an increased

¹ In which the ratio of R&D costs to value added exceeds 4.5%.

² <https://www.ebrd.com/news/publications/brochures/ebrd-knowledge-economy-index.html>.

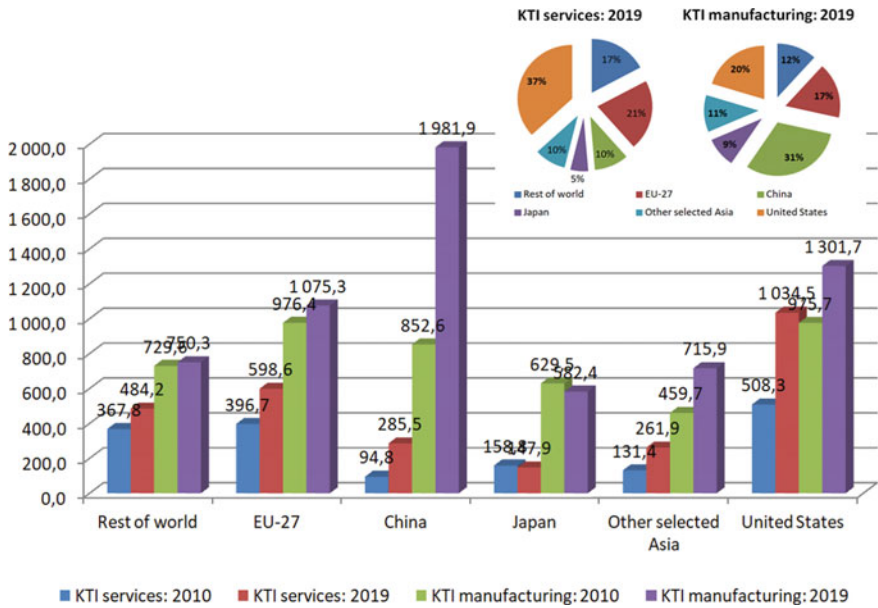


Fig. 1 Value added of high- and medium-tech high-level manufacturing and service industries with high intensity of research and development costs (KTI), selected countries and regions of the world*, \$ billion (*Other selected Asian economies include Singapore, South Korea, Taiwan (China), Indonesia, Malaysia, Philippines, Thailand and Vietnam. *Source* Science and Engineering Indicators. The State of U.S. Science and Engineering 2022, <https://ncses.nsf.gov/pubs/nsb20221/global-science-and-technology-capabilities>)

demand for knowledge affecting gross value added). Today, the share of the knowledge economy in GDP for developed countries exceeds 2/3. At the same time, since the beginning of the twenty-first century, the share of the USA, the EU and Japan in the global output of knowledge economy industries has decreased (from almost 40% to less than 30%) with an increase in the share of developing Asian countries, primarily China (up to 20–25%) (Fig. 1).

3.3 Measuring the Knowledge Economy

Today, two main methodological approaches are used to measure knowledge: by the cost of knowledge production and by the market value of knowledge sold. Among them, the Knowledge Assessment Methodology developed by the World Bank for the countries stands out, covering 148 indicators consolidated into four main groups: Education and Human Resources, The Innovation System, Information and Communication Technology, The Economic Incentive and Institutional Regime. On this

basis, the EBRD has been calculating Knowledge Economy Index for a number of European countries since 2014.

UNDP has been calculating the Global Knowledge Index since 2017, covering 154 countries and 199 indicators distributed across seven sub-indices, focusing on evaluating the effectiveness of educational systems (see Table 3).

Table 1 shows that countries with low indicators of the “Enabling environment” and “Economy” subindexes, as a rule, do not receive high scores in other categories due to inefficient public administration, high levels of corruption and a weak business environment. The largest gap between the OECD countries and the rest is observed in the “Research, Development, Innovation” subindex, primarily due to the difference in the scale of R&D financing and the effective use of allocated funds.

3.4 Innovations

The knowledge economy is largely based on innovations, which, on the one hand, give significant competitive advantages, and on the other, are a significant factor in economic growth. According to the Guidelines for Collecting, Reporting and Using Data on Innovation (the Oslo Manual), issued by the OECD in 2018, “an innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)”.³ In turn, innovation is a type of activity associated with the transformation of ideas (the results of scientific research and development or scientific and technological achievements) into technologically new or improved products or services introduced on the market, new or improved technological processes and (transfer) production methods of the services used in practice. There are usually four stages (spheres) of the innovation process: fundamental research, inventions, development, commercialisation. The criterion for the success of innovation activity is the commercialisation (entry into the market) of products—new, updated or old, but based on new technologies and methods.

This means that innovation is based on the application of new knowledge. Therefore, the concept of “innovation economy” is an integral part of the knowledge economy, representing a rapidly updating part of it.

To characterise the innovation economy, the Global Innovation Index is often used. It is calculated annually by the World Intellectual Property Organization (WIPO). The results of the index study for 2021 covered 132 countries ranked by the effectiveness of their innovation activities according to 81 indicators grouped into two sub-indices: resources and Innovation Input, as well as the Innovation Output (see Fig. 2).

³ OECD/Eurostat (2019), “Executive summary” in: Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition, OECD Publishing, Paris/Eurostat, Luxembourg. <https://www.oecd-ilibrary.org/docserver/9789264304604-3-en.pdf?expires=1576413685&id=id&accname=guest&checksum=3CDF547B8E3DC5B0907530994723A2A8>.

Table 3 Global Knowledge Index, 2021

Country	Knowledge Economy Index, in total (1–100 points)	Place in the rating in 2021 (154 countries)	Technical and vocational education and training	Higher education	Research, development and innovation	ICT	Economy	Enabling environment
Switzerland	73.6	1	77.5	68.6	65.7	82.7	62.3	86.6
USA	71.1	2	92.3	57.8	64.3	86.5	61.1	73.5
Finland	70.8	3	81	56.1	57	81.9	61.8	83.8
Singapore	69.2	7	60.2	56	53.3	85.9	76.6	81.3
UK	68.1	9	63.4	68.3	58.2	84.2	60.1	77.5
Germany	66.2	11	64.3	60.2	61.2	81.5	58.6	78.9
Japan	66.2	12	61	50.5	63.2	83.2	56.2	77.5
UAE	66.1	15	69.6	55.4	37.8	79.9	73.2	73.9
South Korea	64.4	19	57.7	45.3	63.3	83.4	60.6	69.5
France	64.0	20	55.1	55.4	54.6	79.4	56.2	75.9
Israel	63.7	21	57.4	46.7	64.5	78.5	55.8	71.8
China	57.4	31	65.2	38.9	44.4	61.4	57.7	57.6
Russia	50.8	45	48.9	45.8	27	63.5	40.9	57.7
Brazil	45.1	79	49.6	43.1	25.6	56.2	35.9	57.1
India	44.4	75	55.7	38.9	27.3	52.1	40.6	47.5
Indonesia	43.3	81	44.7	35.6	15.4	55.7	45.5	57.1

Source: Global Knowledge Index 2021

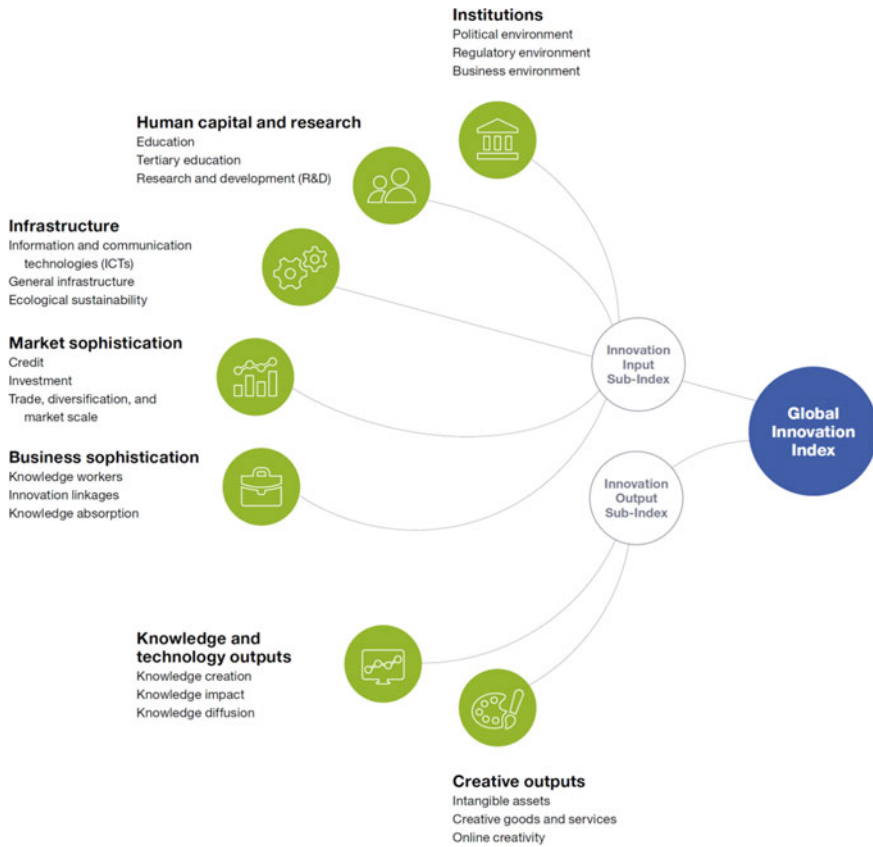


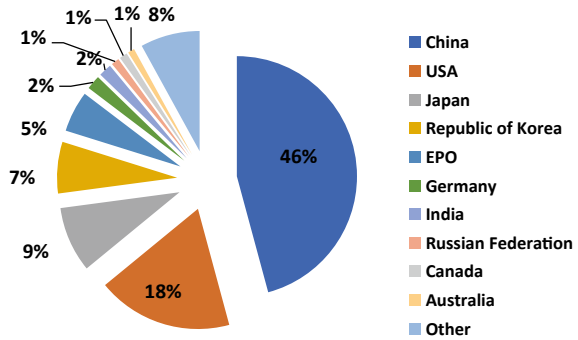
Fig. 2 Structure of the Global Innovation Index (Source <https://www.wipo.int/edocs/pubdocs/en/w>)

According to the ranking of countries in the Global Innovation Index, the most innovative economy of 2021 is Switzerland. It is followed by Sweden, the USA, UK and the Republic of Korea.

To characterise the innovative economy, other indicators are also used, primarily the number of innovatively active enterprises. The largest number of innovation-active enterprises was in the OECD member countries (53% of the total), most of which operated in the manufacturing industry.

Another indicator that allows assessment of the effectiveness of innovation activity is the number of patent applications in the country as a whole or based on the number of its inhabitants. According to the total number of applications submitted, China is the leader; the positions of the USA and Japan are strong (Fig. 3). However, it should be borne in mind that patenting traditions differ in different regions—in the USA and the EU it is customary to patent mainly inventions, trademarks and industrial designs; East Asia also patents small improvements. As a result, eight of the ten

Fig. 3 Patent applications received by 10 leading national (regional) offices, 2020, % of total (Source: WIPO Statistics Database, November 2021)



most actively patenting companies are located in Northeast Asia. For several years in a row, the Chinese company Huawei Technologies remains the leader in filing international patent applications for its products: in 2020 it was followed by Samsung Electronics (Republic of Korea), Mitsubishi Electric from Japan, LG Electronics from the Republic of Korea and Qualcomm from the USA.⁴ As for the distribution of patent applications by field, the USA ranks first in the number of patents received in the field of computer technology (12.1% of all applications in 2020), China and the Republic of Korea excel in applications in the field of digital technology (14.8% and 11.9%, respectively), Japan (10.1%) leads in the fields of electrical engineering, electronic equipment, and Germany has traditional strong positions in the field of transport.

3.5 National Innovation Systems as the Core of the Knowledge Economy

A country’s national innovation system (NIS), i.e., its innovation production system, is of great importance for introducing innovations. Several NIS models are distinguished—Euro-Atlantic (represented primarily in Western Europe), East Asian (primarily in Japan and South Korea), alternative (in less developed countries), as well as the “triple helix” model (developed in a complete form only in the USA). The NIS, which includes all elements of the innovation process—from fundamental research to the production of innovative products and access to international markets (“full cycle”), includes only the first and last models.

The US model of the “triple helix” differs from the Western European one by closer interaction and interpenetration of the functions of universities, the state and business in innovation. There are business incubators at universities, businesses take part in the formation of educational programmes and evaluate the quality of training, the state assumes the functions of a venture investor, etc. This is its difference from

⁴ <https://www.wipo.int/edocs/infogdocs/en/ipfactsandfigures/>.

the Euro-Atlantic model, the core of which is fundamental research conducted mainly in scientific institutes and universities, and the East Asian model, where the latest technologies are primarily created in research centres of companies. If we take the alternative model, as a rule, fundamental and applied research is poorly represented there, innovations are based on foreign technologies.

Besides, it is fundamentally important for NIS to have a developed system of venture entrepreneurship and venture financing that is needed for transforming new knowledge into innovation. Venture capital is the basis for financing new technologies and new industries, as well as a source of resources for companies to quickly enter the market, transforming the results of research activities into a competitive advantage of new products or services.

Venture financing is a specific source of high-risk medium-term investments provided (usually for a period of no more than five to seven years) to companies that are, as a rule, at the early stages of their formation (so-called seed companies, start-ups, early stage companies), as well as existing enterprises for their expansion and modernisation.

In 2021, the volume of venture investments worldwide reached a record \$ 621 billion, of which almost half (\$ 311 billion) was accounted for by the USA, \$ 176 billion by Asian countries, of which more than half of the transactions were Chinese.

3.6 Scientific Resources

The country's scientific resources characterise the volume and quality of accumulated scientific knowledge and the country's ability to reproduce it. Innovations in developed economies, especially large ones, are carried out primarily on the basis of their own scientific resources. The transfer of scientific resources for innovation is of great importance for medium and small developed economies. It comes through the import of this knowledge and from the activities of foreign TNEs on their territory. If we take less developed countries, these are the main sources of knowledge, although the largest of them (especially China) have already formed their own significant scientific resources, relying on which, they carry out an increasing part of their innovations.

Accumulated scientific resources are reflected in such indicators as prestigious scientific awards received by the residents of the country, the presence of internationally recognised scientific schools, etc. But even more important is the country's ability to reproduce scientific resources: according to the theory of international competitiveness (see Sect. 2.1), knowledge refers to developed resources, i.e., those that a country can develop in a historically short time. Among the indicators of the reproduction of scientific resources, we note first the proportion of expenditures in GDP for research and development (R&D). To analyse R&D, the structure of its

funding (between the state, the business sector, the sphere of higher education), the number of people employed in the field of R&D in relation to the total population, the effectiveness of R&D costs, etc., are investigated.

The bulk of R&D spending is concentrated in the OECD countries, as well as in China, India and Russia. 80% of global research and development spending in 2020, as shown in Fig. 4, is concentrated in ten countries, of which 50% was accounted for by the USA and China. Other countries from the Top 10, for example, France, India and the UK, account for 2–3% of the global figure. However, today, strong shifts are taking place between the leading scientific powers, primarily due to the sharp growth of China’s share in global R&D spending, which has increased by an average of 16% annually over the past two decades. R&D spending is also growing rapidly in other Asian countries. In 2021, South Korea’s share in global spending approached 5%, exceeding the share of leading European countries, and India’s share exceeded Russia’s (about 2.5%).

The leading countries in terms of absolute spending expend more than 2–3% of GDP on research and development, but small and medium-sized developed countries are leading in terms of the share of R&D spending in GDP (see Table 4). The portion of foreign sources of R&D financing is insignificant (7% on average in the OECD), except for Israel, where foreign sources of science financing exceeded 50% due to foreign orders for research in Israeli scientific organisations, and is also large in a

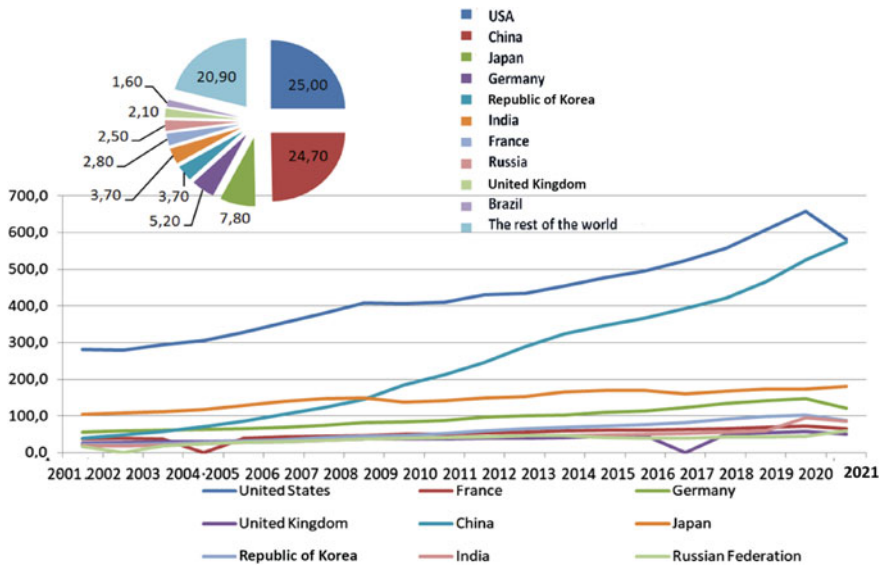


Fig. 4 R&D expenditures of individual countries in 2000–2020, \$ billion and % of global expenditures (Source OECD. Main Science and Technology Indicators, Volume 2021 Issue 1, OECD Publishing, Paris. <https://www.oecd.org/about/publishing/main-science-and-technology-indicators-2304277x.htm>; The State of U.S. Science and Engineering 2022, January 2022. [https://nces.nsf.gov/pubs/nsb20221/national-science-board\\$](https://nces.nsf.gov/pubs/nsb20221/national-science-board$))

number of other small economies (about 1/4 in Ireland, Lithuania, almost 1/3 in the Czech Republic and Latvia), where they are carried out by externally funded local affiliates of MNEs.

As we can see from Table 4, the main investor in R&D is the business sector, primarily large private companies. The role of the state remains significant, focusing its efforts on major projects, and macro-technologies that require significant capital investments. China is the leader (more than 2 million people) in terms of the number

Table 4 Indicators of the global development of science, 2022^a

Country and group of countries	Indicator					
	The share of domestic R&D expenditures in GDP, %	Total R&D personnel per 1000 total employment ^b	Research and development expenditures, by type of funds, % of total			High-tech exports, % of product exports manufacturing industry
			Business tools	State funds	Funds from foreign sources	
OECD as a whole	2.68	8.97	62.33	24.47	7.2	18
USA	3.45	9.85	62.37	22.09	7.1	19
Great Britain	1.74	14.49	54.81	25.94	13.67	23
EU-27	2.20	14.38	58.25	30.01	9.64	16
including: Germany	3.14	16.38	64.46	27.80	7.38	16
France	2.35	16.70	56.66	32.54	8.04	26
Italy	1.53	14.02	53.68	32.3	9.59	8
Sweden	3.53	18.85	60.76	25.02	10.08	18.8
Finland	2.91	20.45	54.33	27.79	15.49	9
Japan	3.27	13.26	78.91	14.67	0.58	17
Republic of Korea	4.81	20.27	76.95	20.68	1.61	32
Taiwan (PRC)	3.64	24.31	81.01	18.79	0.13	–
Israel	5.44	14.96	36.56	10.44	51.96	23
China	2.40	6.97	76.26	20.49	0.9	31
India	0.66	1.3	63.20	36.8	–	9
Brazil	1.30	3.7	53.6	43.5	–	13.0
Russia	1.10	10.60	29.49	66.29	2.40	11

Sources OECD (2022). Main Science and Technology Indicators, *OECD Science, Technology and R&D Statistics* (database), <https://doi.org/10.1787/data-00182-en>

China Association for Science and Technology 2022, <https://dst.gov.in/sites/default/files/Research%20and%20Development%20Statistics%202022.pdf>

^aOr the coming years for which data are available; ^bin terms of full employment

of people employed in R&D (absolute values), followed by the EU, the USA and India.

The effectiveness of scientific and technical activities is assessed mainly by the indicators of patent activity (see Table 4), and fundamental research is largely assessed using bibliometric indicators, primarily as the total number of research articles published in peer-reviewed scientific journals and publications included in the scientific citation index systems. The largest in the world is the Scopus system, the others include Web of Science and Social Sciences Citation Index (SSCI), while Chinese publications are included in the Chinese Science Citation Index, Japanese publications in the Citation Database for Japanese Papers, Russian publications into the Russian Science Citation Index.

According to Scopus, the volume of scientific publications worldwide increased from 2010 to 2021 by an average of 4% per year (the number of scientific articles increased from 1.9 to 2.9 million during this period) and in recent years by more than 7%. Elsevier serves the global research community, publishing over 600,000 peer-reviewed articles in 2021—89% more than a decade ago. At the same time, the research also continued to become more and more international (in 2018, every fifth article was written by co-authors from different countries, by 2021 it was already every fourth). Since 2018, China has held the first place in the world in terms of the number of publications in peer-reviewed international databases (23% of the total in 2020, while the number of Chinese publications increased by 624% from 1996 to 2020), the US share fell to 16%, India dropped to third place (5.07%). EU countries published 24% of articles. However, the USA and the EU are still leading in terms of scientific productivity, in particular, the share of the USA in the most cited articles in 2018 was about 40%, the EU was 30%.

The distribution of publications according to the fields of science indicates the priorities of research in 2020. The number of publications in the field of medical sciences in the USA, the European Union (EU-27), the UK and Japan far exceeds the number of publications in any other field. Besides, the USA, UK and EU-27 have the highest proportion of articles on social sciences. If we take China, the largest area of research is engineering (24%), followed by medical sciences (15%), as well as computer and information sciences (12%). The largest scientific field in terms of number of publications in India is computer science (18%). In Japan, medical sciences occupy the first place (32%), followed by biological and biomedical sciences (13%) (see Fig. 5).

3.7 Educational Resources

The educational resources of a country are the knowledge accumulated by its population and reproduced through the education system.

Some indicators of the educational resources of the countries are given in Table 5.

The mass character of higher professional education has been growing at a faster pace lately, which is of particular importance in the modern knowledge economy,

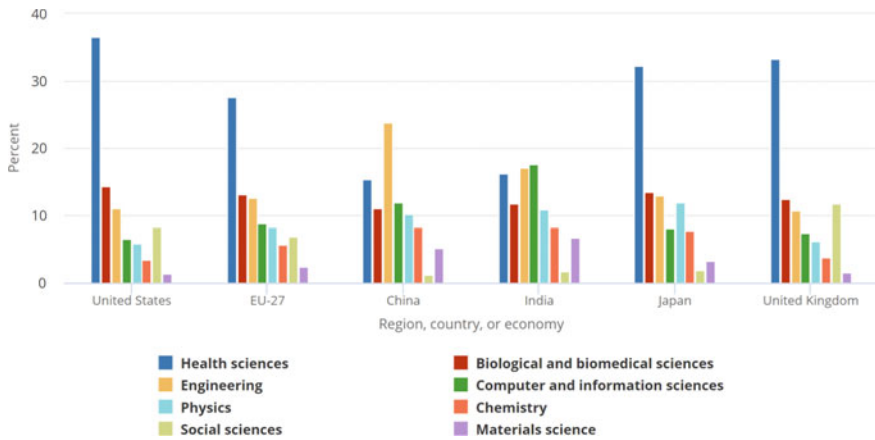


Fig. 5 Distribution of publications by field of science, 2020, selected countries/regions (Source <https://nces.nsf.gov/pubs/nsb20214/publication-output-by-country-region-or-economy-and-scientific-field>)

since it allows one to better adapt to rapidly changing requirements. Among the motives for obtaining higher education, one can distinguish better employment prospects, higher earnings, faster professional and career growth, lower risks of joining the ranks of the unemployed (if we take the OECD member countries, unemployment among people with higher education is 3 times less than the national average). The proportion of adults with higher education ranges from 20% or less in Brazil, China, India, Indonesia, Italy, Mexico and South Africa to 50% or more in Canada, Ireland, Israel, Luxembourg, Korea, Russia and USA.

One of the main features of the university education system has become its globalisation, which is characterised primarily by the growth of the global education market based on an increase in the number of foreign students and programmes of international academic mobility. Since the beginning of the 2000s, new forms of internationalisation have been emerging: the convergence and unification of educational programmes, including the creation of branches of educational institutions in other countries, joint university “double degree” programmes, an increase in the “international” component of education (the so-called “home internationalisation”, as well as a radical change in educational technologies, including digitalisation, distance learning and online export of individual educational programmes, courses).

Cross-border (transnational) higher education means all types of higher education programmes or educational services (including distance education services) in which students are located in a country other than the one in which educational institutions are based. A distinctive feature of transnational education is that such educational programmes and services may belong to a national educational system different from the educational system of the country in which such programmes and services are offered, and even be independent of any national educational system at all.

Table 5 Selected indicators of educational resources in countries of the world in 2020^a

Country and group of countries	Expenditure on education, % GDP	Government expenditures on tertiary education, %	The proportion of the population with tertiary in the group of 25–34 years	Adult education level, tertiary, % of 25–64 years old
USA	5.0	35.5	51.9	50.1
UK	5.5	52.5	55.8	50.75
Germany	4.8	85.2	34.9	31.3
France	5.7	80.6	49.4	39.7
Italy	3.8	76.0	28.9	20.1
Sweden	7.7	88.4	49.1	44.6
Finland	6.9	96.4	44.7	47.9
Japan	3.2	35.2	61.5	52.7
Republic of Korea	4.6	55.3	69.8	50.7
Israel	6.1	57.7	47.3	50.1
China	4.22		26.7	15.5 (2021)
India	3.8	16.9	10.6	9.1
Russia	4.6	60.7	62.1	56.7
Brazil	6.3		23.5	20.1

Sources OECD (2022), Education spending (indicator). <https://doi.org/10.1787/ca274bac-en>; OECD (2021), Education at a Glance 2021: OECD Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/b35a14e5-en>; UNESCO eAtlas for Education <http://data.uis.unesco.org>; <https://www.china-briefing.com/news/perepis%d1%8c-naseleniya-kitaya-v-2021-godu-5-vyvodov-dlya-inostrannyh-investorov/>; <https://datatopics.worldbank.org/education/>; <https://datatopics.worldbank.org/education/>

^aOr the next years for which data are available

Cross-border higher education has grown considerably in the last two decades, thanks to increased mobility of students, academic staff and institutions and new delivery modes such as campuses abroad, e-Learning programmes and Internet-based courses.

At the end of the 2010s, China (over 20%) and India (about 10%) were the world leaders in terms of the number of students who had gone abroad to study. At the same time, almost all top universities in developed countries have opened their branches in Asia, Africa and Latin America or have joint study programmes (or international campuses) with local universities there to attract foreign students. These countries have also formed their own centres for international student mobility: in particular, South Africa actively attracts students from other African countries, Singapore and South Korea attract from Southeast Asia.

The geographical structure of the global post-secondary education market is changing quite quickly. If in 2009 the main leaders were such countries as the USA (28%), UK (11%), Germany and Canada (9% each), France (7%) and Australia (4%),

then by 2020 there was a decrease in the total number of foreign students in the USA (18%), Canada (7%) and Germany (6%), while the positions of Great Britain (11%) and France (7%) were maintained, and China (10%), Australia (7%) and Russia (6%) increased. China relies on various budget programmes and numerous scholarships, and also improves the quality of education by attracting foreign professors. Russia attracts primarily students from the former Soviet Republics (3/4 of foreign students).

Analysis of the directions and programmes that students choose to study abroad shows that it has changed quite a lot over time. If in 2003 a quarter of all students received a business education, about 20% of students chose technical and engineering sciences and the same number preferred natural sciences, then at the end of the 2010s and the interest in medicine (more than 20%), art and social sciences increased during the pandemic, the interest in business education remained stable, but the interest in natural sciences has somewhat decreased. The USA and the UK are attractive for foreigners to obtain business education, Germany—for engineering, France—for humanities. To promote the export of educational services on the world market, a number of countries have established non-governmental organisations with strong state support, such as DAAD (Germany), British Council (UK), EduFrance (France), CIMO (Finland).

As for postgraduate education programmes, in the late 2010s, foreigners accounted for over 50% of those studying at US universities in these programmes, including 40% in PhD programmes. Many of them replenish the educational and scientific potential of the countries of education, primarily the USA, Great Britain, Australia and Canada.

One of the defining moments when choosing a foreign university is the expected quality of education, globally recognised diploma, availability of the modern software and equipment, affordable accommodation and tuition.

This is partly stimulated by the world rankings of the best universities, among which are the British QS World University Rankings and Times Higher Education World University Rankings, North American rankings of universities and colleges (US News), Chinese Academic Ranking of World Universities (ARWU), etc. Despite the differences in the ranking methodology, the main criteria for evaluating universities are their reputation among employers and graduates, the level and quality of educational services provided, the level of scientific research conducted by both teachers and students, contribution to innovation, citation of scientific articles, international student and teaching “mobility”, the number of international scholarship programmes, etc.

The struggle for a place in the rankings, which serves as an indicator for attracting students, including foreign ones, the best teachers and financial resources, reflects the growing competition between universities. The top lines in all recent rankings are occupied by universities of the USA and Western Europe (Great Britain, Germany, France, Switzerland and the Netherlands). There is a noticeable trend: the positions of Asian universities (Japan, South Korea and Singapore) are strengthened, Chinese universities (such as Tsinghua University, Peking University, which are among the hundred best universities in the world, etc.) are rapidly rising in the world rankings, the presence in the ratings of Russian universities is slowly increasing.

3.8 *Information Resources*

The totality of information intended for dissemination and use forms national information resources. They are distributed and used through information technology and telecommunications (ICT).

We can better understand the development of information and communication technologies in countries and regions of the world after studying the corresponding indices. Among them, the most authoritative include Network Readiness Index (NRI), E-government Development Index (EGDI), European Digital Economy and Society Index (DESI), etc.

At the beginning of 2022, about 5 billion people (almost 2/3 of the world's population) already used the Internet (see Fig. 6). In 2020–2021, the number of people regularly accessing the Internet increased by almost 20%, which can be explained, first, by the measures taken during the pandemic. Restrictive measures, the transfer of a significant number of employees to remote work, the development of online education, e-commerce and online banking technologies with the closure of retail and financial institutions have contributed to the modernisation of ICT infrastructure and digitalisation in almost all countries of the world. As a result, in 2021, the per cent of residents of developed countries using the Internet increased to 80.9% (in 2005, it was 51.3%), in less developed countries—to 45.3% (up from 7.7%). Almost 800 million people estimated to have come online since 2019. Internet penetration increased more than 20% on average in Africa, Asia, Pacific and least developed countries (LDCs).

However, the growing number of Internet users has not eliminated the problem of the digital divide. It is estimated that 37% of the world's population, or 2.9 billion people, have never used the Internet before. The gap, which persists due to rapid progress in ICT in some countries and a slower one in others, is observed not only between regions, but also between states of the same region. Even within the most developed countries, there is a kind of modification of the “digital divide”: between those who own digital competencies and those who do not own them or lack them. The most noticeable digital gap is between young people and the population aged 64 and over.

Another obstacle to the development of digital and ICT remains the availability of digital devices and the high price of communication services. The target set by international organisations for affordable broadband in developing countries at the level of 2% of GNI per capita is being achieved slowly, while in some of the world's poorest countries, internet access costs 20% or more.

Another problem is the lack of digital skills and competencies, compounded by the lack of content in local languages. Besides, an illiterate population cannot work in the Net (Table 6).

Individuals using the Internet

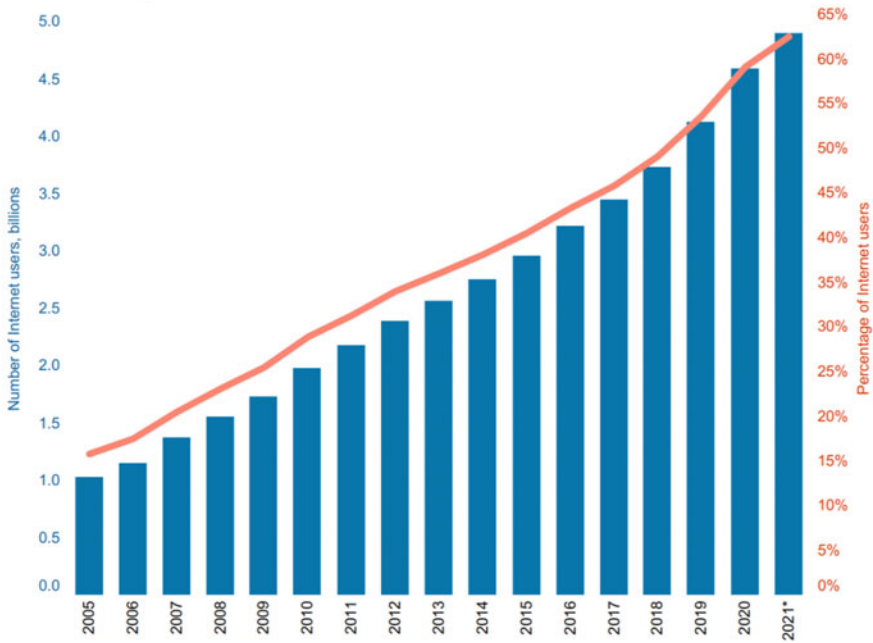


Fig. 6 Number of Internet users in 2005–2021, million people (Source World Telecommunication Union, <https://www.itu.int/itu-d/reports/statistics/2021/11/15/internet-use/>)

4 Social Policy

Social policy of the modern state plays an important role in the development of human resources, including the formation, quality and the reproduction of human capital. Social policy is one of the components of public policy and is aimed at solving problems arising in the area of population welfare and social relations. To a large extent, the scale and directions of state intervention in the social sphere are determined by the political regime, ideology, moral and ethical norms, on the basis of which the institutional system of country was built on and which, in turn, determines (regulates) the nature of relations between the state and civil society.

It should be noted that throughout the history, the state, one way or another, has performed social functions focusing on ensuring the safety of citizens, maintaining social peace, as well as on the construction of vital infrastructure facilities, such as dams, irrigation canals, defence structures, and social assistance to victims of natural disasters, famine and epidemics, i.e., providing the citizens of the country with public goods, albeit on a limited scale. These actions of the state, however, were sporadic, and the mitigation of social problems, such as, for example, mass poverty, pauperization, homelessness, vagrancy, orphanhood, disability, etc., was delegated to various kinds of volunteer organisations (monasteries, charitable organisations, guilds, etc.) and private individuals.

Table 6 Indicators of ICT availability in regions of the world in 2021, %

	Region						World, total
	Africa	Arab countries	Asia–Pacific region	CIS	Europe	North and South America	
Portion of the population using the Internet	32.8	66.3	60.6	82.3	87.2	81.4	62.5
The portion of the population covered by a fixed (wired) broadband Internet subscription	0.6	9.4	16.7	20.3	34.7	23.4	16.7
Portion of the population covered by a subscription to wireless (mobile) Internet access	49.2	69.6	96.2	90.9	98.7	91.5	87.6

Source World Telecommunication Union, <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2021.pdf>

Today, the sphere of social policy includes:

1. income of the population (standard of living, welfare, minimum living wage, consumer basket);
2. labour and labour relations (remuneration, labour protection, insurance, employment);
3. social security and social protection;
4. development of social sectors (healthcare, education, science, culture, sports, etc.);
5. development and regulation of social infrastructure (housing, transport, roads, communications, trade and consumer services, etc.);
6. environment (air quality, water quality, etc.).

These policy directions interact with each other. The minimum incomes, for example, are affected not only by tax rates, but also by the size of social transfers (see below).

Since the end of the nineteenth century, there has been an expansion of the social obligations of the state and its involvement in solving social problems of society. Gradually, national models of social policy and social protection systems

have emerged on the basis of historical experience of self-organisation and mutual support and the ideas about the role of the state in the social sphere.

By the beginning of the twentieth century, a German model of social policy was developed in Europe on the basis of Otto von Bismarck's social initiatives, as a result of which the following social programmes were launched: unemployment insurance (unemployment benefits were established in 1883), accident insurance (in 1884), mandatory pension insurance (in 1910) and medical insurance (1883).

The German model had a considerable impact on the formation of social policy and social protection systems in other European countries, which, to one degree or another, borrowed the ideas of Otto von Bismarck's social insurance. These include France, Belgium, the Netherlands, Switzerland and other countries of Western and Eastern Europe.

Among the pioneers in the field of social policy was also the UK, which developed a slightly different model of social policy—the Beveridge model, named after William Henry Beveridge, an English politician and economist.

The fundamental difference between the Beveridge model and the Bismarck model was the universality of the former. It covered the entire population of the country, whereas the German model was focused mainly on the industrial working class of Germany.

4.1 Social Policy Models: An Example of Developed Countries

Modern national models of social policy across the world vary and, in most cases, they are of a mixed type. In the group of developed countries, the following models may be distinguished: neoliberal (Anglo-Saxon), conservative-corporatist (Franco-German), social-democratic (Scandinavian, primarily Swedish) and Mediterranean (Catholic).

The neoliberal model (USA, UK, Australia) is characterised by a limited social responsibility of the state and is reduced to preserving the minimum income and caring for the well-being of the weakest segments of the population. The state encourages non-state social insurance (through voluntary private insurance) and private social support (through various kinds of private charitable organisations and foundations), as well as the development of alternative ways for people to independently increase their incomes. The central point of such a policy is the universal payment of uniform benefits for all those who are on or close to the poverty line. The distinctive features of the liberal model are its emphasis on the society members' abilities to work and the low level of social transfers made from the state budget and social insurance system. An outcome of such an approach is a relative independence of the working population from the state. The disadvantages of this model are manifested in the relatively low level of social protection and significant differences between the levels of consumption of economically strong and economically weak citizens.

Social programmes are mostly formed on the basis of private insurance, rather than state budget funds.

The conservative-corporatist model (Germany, France, Austria, Belgium) is based on the principle of corporate responsibility, i.e., all social agents of the country (the state, businesses, civil society organisations) share responsibility for the social protection of the citizens. The financial basis of such a social policy is both state budget allocations and insurance contributions of employees and employers for social protection, which are approximately equal. The advantages of this model are high degree of social protection and sizable social benefits for citizens, the disadvantages are high taxes on citizens and businesses (from the latter in the form of social taxes, primarily from the wage fund).

The social-democratic model (Scandinavian countries) is a redistribution-oriented model in which “the rich pay for the poor, the healthy for the sick, the young for the old”, and the main institution carrying out such redistribution is the state, which levies large taxes on the population and businesses. The financial mechanisms of redistribution are the state budget and state social insurance funds, which are used to provide a wide range of state social guarantees, mainly in free form. The advantage of this model is the high degree of social protection of the society members. Its disadvantages include the restriction of people’s choices of social protection means and mechanisms, a high level of taxation and a relatively heavy burden of taxes imposed on the working population.

The Mediterranean (or Catholic) policy is characterised by a high level of legislative protection of employment, segmentation of the rights and statuses of beneficiaries and a low level of social protection. The main emphasis of the Mediterranean model is on pension provision. This model is common in the Mediterranean countries (Italy, Spain, Greece, as well as in some countries of North Africa). Its main disadvantages include the fact that it does not actually have any noticeable impact on the main risks faced by the working population: unemployment and poverty.

The peculiarities of different models of social policy are reflected in the scale and structure of social expenditures of the state. If in 2019 the portion of social spending in the OECD countries averaged 20% of GDP, then in Sweden and Denmark, which pursue a social-democratic policy, it was 5 and 8 percentage points higher, respectively, and in Germany, whose social policy is based on the corporate principle, it was higher by almost 6 percentage points (see Table 7). In the USA, on the contrary, where social policy was formed under the influence of neoliberal views, state social spending as a proportion of GDP was lower the OECD average.

In the rest of the world, the level of public social expenditure was much more lower, especially, in the low-income and the lower-middle income countries, respectively, 1.1 and 2.5% GDP (see Table 7).

As for the structure of social spending, the contribution of the private sector as a source of financing for social programmes was the most significant in the USA (largely due to mandatory private social insurance) and the UK, respectively, 12.5 and 6.2% of GDP, while the OECD average was only 3.6% of GDP in 2017.

Table 7 Public social protection expenditure (excluding health), % of GDP, 2020 or latest available year, and domestic general government health expenditure, % of GDP, 2018, by region and country income level

Region	Public expenditure on social protection (excluding healthcare) as % of GDP	Domestic general government health expenditure as % of GDP
Low-income	1.1	1.0
Lower-middle-income	2.5	1.3
Upper-middle-income	8.0	3.2
High-income	16.4	7.6
Northern, Southern and Western Europe	18.7	7.5
Eastern Europe	13.8	3.9
Central and Western Asia	9.5	3.2
Europe and Central Asia	17.4	6.7
Southern Asia	2.6	1.4
South-Eastern Asia and the Pacific	8.2	4.4
Asia and the Pacific	7.5	4.0
Arab States	4.6	3.2
Northern America	18.1	8.5
Latin America and the Caribbean	10.1	3.9
Americas	16.6	7.6
Sub-Saharan Africa	2.1	1.8
Northern Africa	7.7	2.4
Africa	3.8	2.0
World	12.9	5.8
OECD member-country	Public social expenditures, 2019	
USA	18.7	
UK	20.6	
Germany	25.9	
France	32.0	
Sweden	25.5	
Denmark	28.3	
Italy	28.2	
Spain	24.7	
OECD average	20.0	

Source ILO, World Social Protection Database, based on the SSI; WHO, IMF; national sources <https://www.socialprotection.org/gimi/RessourceDownload.action?id=57303>, and OECD (2019). Social Expenditure, www.oecd.org/social/expenditure.htm

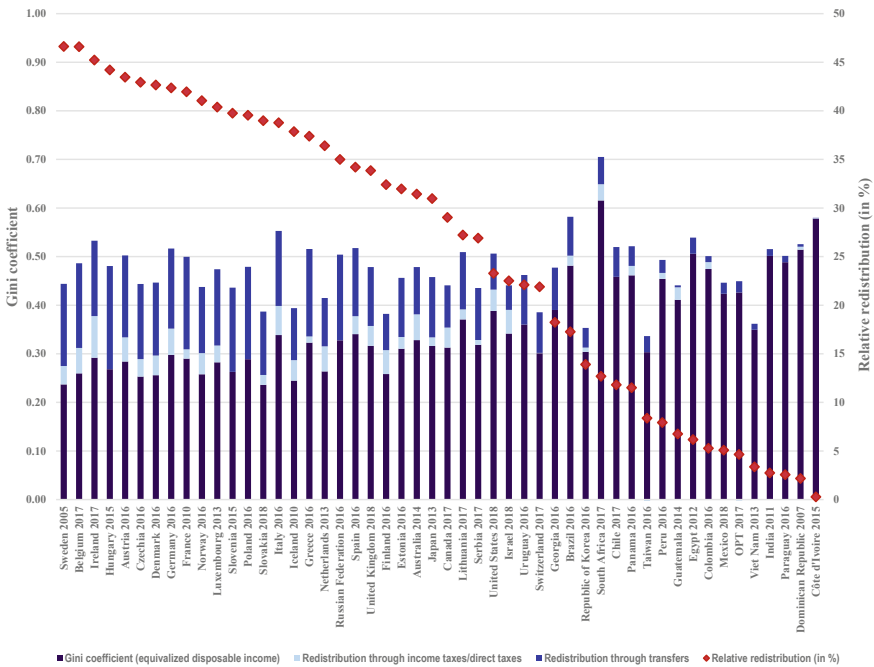


Fig. 7 Reduction of inequality (Gini coefficient) through social security transfers and taxes in selected countries, latest available year (*Note* Relative redistribution is defined as the difference between the Gini values for market and disposable income divided by the Gini value for market inequality. *Source* ILO calculations based on Luxembourg Income Study [LIS] database [<http://www.lisdatacenter.org>]

4.2 Income Policy

The degree of influence of the state on the redistribution of income can be estimated by considering the effect of taxes and social transfers on income inequality. As Fig. 7 shows, the effect of these instruments may vary from country to country, depending on the taxation of personal income and the size of social transfers.

According to the income study, conducted by Malte Luekber, a German scholar, the combined effect of taxation and social transfers was more significant in 16 European countries than in the group of four OECD countries—the USA, Australia, Canada and Israel, which have almost the same initial level of primary income inequality (the Gini coefficient tended to 46% before income redistribution). Thanks to progressive taxation and generous social transfers, European countries were able to reduce the Gini coefficient to 28%, while the second group of developed countries—to 34%.⁵

⁵ Luekber, Malte, A Tide of Inequality: What can Taxes and Transfers achieve?//Global Labour Column, Number 87, February 2012, <http://column.global-labour-university.org/>.

In less developed countries, the effect of redistribution was, in most cases, very modest due to a small size of social transfers, on the one hand, and to a limited social protection coverage of the population, on the other (see Fig. 7).

4.3 *Social Protection*

The International Social Security Association (150 member countries) identifies the following components of the social security system (or social protection) of the population—social insurance, social assistance and social services.

The purpose of social insurance is to protect people from poverty if they lose a source of income due to old age, accident, prolonged illness or unemployment. Social insurance, as a rule, consists of the following elements: pension insurance, medical insurance, occupational accident insurance and unemployment insurance.

The main purpose of social assistance is to maintain a minimum level of consumption among the groups of the population who do not have incomes or have incomes below the level of the officially established minimum standard of consumption, as well as those affected by natural or man-made disasters, etc. Social assistance is provided both in kind (for example, benefits for utilities, purchase of medicines, ration cards, assistance in the form of basic necessities, temporary housing, such as shelters for the homeless) and in cash (social pension, cash benefits, etc.).

As for social services, it includes the protection of childhood, motherhood, the elderly, the disabled and re-education issues.

The degree of social security varies significantly by country and region. In most low-income countries, the social security system is in its infancy. The function of social insurance in the poorest countries is mainly performed by the family, but in conditions of mass poverty, the family's ability to support its members in a difficult situation is limited. As a result, any large-scale shock (economic crisis, natural disaster, conflict, etc.) can have a much greater destructive effect than in developed countries, and cause mass famine or exodus of the population (forced resettlement), creating, in turn, a new problem—the problem of refugees. According to the ILO, almost all countries use some form of social protection, but only one-third of the countries in which 28% of the world's population lives have an all-encompassing social protection system (see Table 8).

As for the protection against unemployment, according to the ILO, only 98 out of 203 countries in the world have legally fixed unemployment benefits. It was because of this, as well as due to the high level of informal employment in the world, only 22% of the unemployed received unemployment benefits with huge regional differentiation (42% in Europe and Central Asia and 6% in Africa).

One of the most important components of social protection is pension provision. However, regional differences are also very large here: 100% of people of retirement age receive an old-age pension (as part of pension insurance or social assistance) in North America, 97% in Northern, Southern and Western Europe, and 94% in Eastern Europe, 27% in Arab countries, 24% in South Asia, 23% in Sub-Saharan Africa.

Table 8 Effective social protection coverage, global and regional estimates, by population groups, 2020 or latest available year

Region	Population group	Coverage rate (%)
Europe and Central Asia	Vulnerable persons covered by social assistance	64.4
	Older persons	96.7
	Unemployed	51.3
	Workers in case of work injury	75.5
	Persons with severe disabilities	86.0
	Mothers with newborns	83.6
	Children	82.3
	Population covered by at least one social protection benefit	83.9
Asia and the Pacific	Vulnerable persons covered by social assistance	25.3
	Older persons	73.5
	Unemployed	14.0
	Workers in case of work injury	24.8
	Persons with severe disabilities	21.6
	Mothers with newborns	45.9
	Children	18.0
	Population covered by at least one social protection benefit	44.1
Arab States	Vulnerable persons covered by social assistance	32.2
	Older persons	24.0
	Unemployed	8.7
	Workers in case of work injury	63.5
	Persons with severe disabilities	7.2
	Mothers with newborns	12.2
	Children	15.4
	Population covered by at least one social protection benefit	40.0
Americas	Vulnerable persons covered by social assistance	36.7
	Older persons	88.1
	Unemployed	16.4
	Workers in case of work injury	57.4
	Persons with severe disabilities	71.8
	Mothers with newborns	51.9

(continued)

Table 8 (continued)

Region	Population group	Coverage rate (%)
	Children	57.4
	Population covered by at least one social protection benefit	64.3
Africa	Vulnerable persons covered by social assistance	9.3
	Older persons	27.1
	Unemployed	5.3
	Workers in case of work injury	18.4
	Persons with severe disabilities	9.3
	Mothers with newborns	14.9
	Children	12.6
	Population covered by at least one social protection benefit	17.4
World	Vulnerable persons covered by social assistance	28.9
	Older persons	77.5
	Unemployed	18.6
	Workers in case of work injury	35.4
	Persons with severe disabilities	33.5
	Mothers with newborns	44.9
	Children	26.4
	Population covered by at least one social protection benefit	46.9

Source ILO, World Social Protection Database, based on the SSI; ILOSTAT; national sources <https://www.social-protection.org/gimi/RessourceDownload.action?id=57297>

4.4 Provision of Public Social Benefits

The main role in the provision of public social benefits by the state is played by education and health care, which in most countries are funded mainly or largely by the state (see Table 5). We should also add that although the state education and health policy does not have the redistribution of income as its main goal, the cumulative redistributive effect of public social services (which includes services in such areas as education, health care, care for the elderly, the maintenance of shelters, benefits of various kinds of budget employees, etc.) is on average in the OECD countries about 1/5 of the Gini coefficient (i.e., the Gini coefficient is reduced by 20%) by equalising, to a certain degree, the population's access to these public goods and ensuring vertical social mobility.

5 Conclusions

1. In the theory of human capital, the costs of educating employees are considered as investments in this capital. It explains at least three things—why large social expenditures, low investments in real capital and high wages are characteristic of the post-industrial economy.
2. The demand for labour is determined primarily by economic dynamics. Low rates of economic growth in Europe lead to tangible unemployment, even in conditions of a slowly growing population. In Russia, the shortage of labour was felt already at the end of the economic recovery of the 2000s, began to be critical in the years of the subsequent crisis, but may become acute again if the economy continues to grow at a high pace.
3. The entrepreneurial resource is more abundant in the conditions of the most liberal economy, and also if there are many experienced and educated entrepreneurs, the market infrastructure is developed, the entrepreneurial culture has deep roots, and the spirit of society itself is not just benevolent to entrepreneurship, but is permeated by the desire for it to be a significant part of the population. Such characteristics are possessed primarily by developed countries, as well as new industrial countries with deep trade traditions (especially in Asia). In turn, these characteristics largely depend on the stage of economic development of the country and the national economic model.
4. The term “knowledge economy” or “knowledge-based economy” is used to define a type of economy in which knowledge plays a crucial role, and the use of new knowledge is one of the main sources of growth. The OECD classifies knowledge-intensive industries as branches of the knowledge economy, as well as service industries—the main users of these products (finance and insurance, business services, communications services, education, healthcare, social and housing and communal services).
5. The knowledge economy generates an abundance of innovations. Innovation is the economic use of a new or significantly improved product (or service), a new technological process, a new marketing method or a new organisational method in production and sales.
6. The country’s scientific resources characterise the volume and quality of accumulated knowledge and the country’s ability to reproduce them. Innovations can be based on the achievements of foreign R&D (this is typical for less developed countries), but as the country develops (approaches the highest technological level in the world), the importance of its own R&D for innovation increases, as the opportunities for borrowing knowledge abroad decrease. In the process of building a knowledge economy, the role of the education sector is increasing. If knowledge is developed primarily in the field of R&D, then it is distributed mainly through the field of education. The educational resources of a country are the knowledge accumulated by its population and reproduced through the education system.

7. The totality of information intended for dissemination and use forms national information resources. In the knowledge society, they are distributed and used through information technologies and telecommunications (ICT). There is a strong gap in the value of the network readiness index (“digital gap”) between the developed and the developing countries.
8. Human capital is strongly influenced by the social sphere, which, in turn, is largely determined by the state’s social policy. This policy is carried out in three main directions: the income policy aimed at mitigating differentiation primarily through proportional taxation, as well as through the establishment of a subsistence minimum and minimum wage; social protection (social security), which is carried out mainly through social transfers; provision of social benefits and primarily through support healthcare and education, in many ways—housing, in part—culture and art, physical education and sports, recreation industry.
9. National models of social policy differ. In the group of developed countries, the following models are distinguished: neoliberal (Anglo-Saxon), conservative-corporate (Franco-German), social-democratic (Scandinavian, primarily Swedish) and Mediterranean (Catholic).

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Resources of World Economy: Real Capital



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Abstract The chapter contains a thorough and critical analysis of current trends and features of the development of such sectors of the world economy as agrobusiness; fuel and energy; metals, chemicals, and timber; mechanical engineering; light industry; construction; transport, logistics, and communication; science, education, and health; trade and catering; tourism and sports.

1 Introduction

In economics, capital is an economic resource that can be divided into two categories: real capital and financial capital. Real capital (gross fixed capital) consists of buildings, equipment, software, and inventories. Real capital is concentrated in the real sector, to which all types of economic activities belong, except the financial sector. This approach allows us to consider the main groups (complexes, clusters) of real sector industries—agribusiness; energy and fuel; metals, chemicals, and timber; mechanical engineering; light industry; construction; transport, logistics, and communication; science, education, and health; trade and catering; tourism and sports.

2 Structure of Real Capital in the World

The UN International Standard Industrial Classification of All Economic Activities (ISIC) divides economic activities into microeconomic activities, combining them into groups of related economic activities. However, in macroeconomic analysis, they are usually combined in a slightly different way—in economic sectors or industry clusters (complexes), consisting of separate industries and usually covering a group of akin economic activities.

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2.1 Sectoral Shifts in the Structure of the World Economy

Structural shifts in the economy (i.e., changes in the ratio of microeconomic activities) are initiated primarily by changes in demand, provided by industries (scientific and technological progress helps him in this, especially during industrial revolutions) and pushed by economic policy.

In the twentieth century, developed countries began the transition from the industrial stage to the post-industrial one. As a result, the main direction of change in the sectoral structure of the world economy is the outpacing growth of services (the tertiary sector). Then this process also affected less developed countries. At the same time, one could witness a decrease in the share of both the secondary sector (industry and construction) and the primary one (agriculture and forestry, hunting and fishing). The main reasons for structural shifts in the global economy are the increased efficiency in real sector industries, which is expressed in reduced consumption of raw materials and materials per unit of production, as well as the expansion of the range of needs of the population and firms in services as per capita income increases.

Today, services account for 65% of the global GDP structure. A group of business services (financial, accounting, auditing, insurance, recruiting and consulting activities, advertising, information technology, business events), as well as social services (education, healthcare, science, social security, culture); housing and communal services, are developing at a faster pace there.

Within the industry, there is a gradual decrease in the share of extractive industries, which is partly explained by a decrease in the material intensity of production and the replacement of mineral raw materials with artificial ones. Within the manufacturing industry itself, there is a shift from labour-intensive industries (light and food industries) to capital-intensive industries (primarily chemistry and mechanical engineering), and in developed countries—to knowledge-intensive (electronic engineering, aerospace industry, biological, pharmaceutical industry, etc.).

3 Agribusiness

The branches of the agribusiness (or agricultural system) are classified into four levels (groups): resource, raw materials, processing, and distribution. The resource level includes the industries that produce machinery and equipment for agriculture, chemicals, plant and animal protection products, fertilisers, seeds and planting material, compound feed, etc. These industries are sometimes referred to as service industries. The raw materials sector is represented by crop production industries producing grain, oilseeds, fruits, vegetables, root crops, and animal husbandry, whose products are meat, milk, and animal fats. This sector also includes fishing in open and inland waters and aquaculture, as well as round wood production. The processing branches of the agribusiness are represented by food; grain processing; sugar; meat; dairy; canning; fruit and vegetable; wine-making; brewing; confectionery; perfumery

and cosmetics; light; timber processing and other types of industries. The distribution level of the agrobusiness includes domestic wholesale and retail trade and the foreign economic complex.

One of the significant manifestations of globalisation in the agricultural sphere is an increase in the degree of extraterritoriality of production and exchange of agricultural goods when market decisions and the implementation of some production functions are removed from the main resources, i.e., the land and water located in other countries. The processes of international labour division in agricultural sectors are based on the uneven geographical distribution of the main resource, i.e., arable land.

At the beginning of the 2020s, there were about 4750 million hectares of land in agricultural turnover in the world for the needs of crop production and animal husbandry. Compared to the beginning of the century this indicator has hardly changed. However, the productivity of agricultural land in the world hits the ceiling due to the active anthropogenic burden on soil and freshwater resources and climate change. Concurrently, according to the Food and Agriculture Organization of the United Nations (FAO), by mid-century, we would need to produce 50% more food and non-food commodities than in the 2012 baseline to meet the global demand (FAO 2021a).

The regional breakdown of arable land distributed in the world is as follows: 34% in Asia, 20% in Europe, 19% in North and Central America, 17% in Africa, 7% in South America, and 3% in Oceania. An important resource indicator of the state of the raw agricultural sector is also the structure and dynamics of irrigated agricultural lands. Their regional shares spread as follows: Asia accounts for 70%, America for 16%, Europe for 7.6%, Africa for 4.7%, and Oceania for 0.9% (FAO2021b) (Table 1).

The long-term historical trend in the development of the global agrarian system is the relative decline in the share of the agricultural sector in the main economic indicators of the world, accompanied by an absolute increase in the production and consumption of raw materials and finished agricultural goods (see Table 2).

The productivity growth in agriculture makes it possible to increase production and reduce food costs, despite the growing world population. However, the combination of environmental and internal factors does not allow to avoid a high price dispersion for these goods.

Agricultural production is characterised by a high degree of losses of grown raw materials, especially food. FAO estimates that food losses at all stages from the production of raw materials to the final consumption range from 10 to 40%. Losses are the least in Australia and New Zealand, most are in Central and South Asia. The maximum losses by product groups were recorded for root crops, tuberous roots, oilseeds, fruits, and vegetables. The causes of food losses lie in the lack of access to modern technological tools and cultivation and processing technologies, the inability of many farmers to use basic resources in various parts of the production chain, as well as consumer behaviour.

Table 1 The main economic indicators of the agricultural sector of the world

Indicator	Measurement units	2000	2010	2015	2019
Arable land	Hectares, million	1493	1519	1549	1556
Global workforce employed in agriculture, forestry and fisheries	Million people	1047	987	910	883
The share of people employed in agriculture, forestry and fisheries	Percentage of total employment	40.0	33.0	28.8	26.7
The share of agriculture, forestry and fisheries in world GDP	Percentage of the value in 2015 prices	4.2	4.2	4.2	4.2
The population share not getting the required food allowance (prevalence of undernourishment)	Percentage of the total number of inhabitants of the Earth	13.2 (2000–2002)	9.4 (2009–2011)	8.3 (2013–2015)	8.9 (2018–2020)
Value added in agriculture, forestry and fisheries	\$ billion in 2015 prices	2032	2706	3157	3511
Pesticides' use	Tons, thousand	3082	4015	4128	4191

Source FAO (2021b)

4 Fuel and Energy Complex

The fuel and energy complex is a set of industries focused on the extraction, processing, and transportation of fuel resources, as well as the production, transportation, and distribution of electricity.

Details about the production of fuel resources will be discussed in Ch.10, so we should turn to the dynamics and structure of energy consumption by its primary sources. Note that the electricity produced at thermal power plants will not be included in this structure, since it is generated from oil, natural gas, and coal are already considered in these statistics (see Table 3).

Table 3 allows us to draw some conclusions. If in the 2000s the average annual rate of primary energy consumption in the world was 2.8%, then dropped to 1.8%

Table 2 Global production and exports of main primary crops in 2019

Region	Agricultural production index (2014–2016 = 100)	Cereals (million tons)	Meat (million tons)	Milk (million tons)	Raw sugar (million tons)	Marine fish catches and aquaculture product million tons	Food exports, \$ billion
World	106.6	2979	337	883	182	178	1382.5
Africa	109.8	204	21	48	12	12	52.8
America	106.6	767	109	205	59	22	369.9
Asia	107.7	1435	136	369	78	125	309.8
Europe	102.4	543	64	232	29	17	593.3
Oceania	93.2	30	7	29	5	2	56.6

Source FAO (2021b). World Food and Agriculture. Statistical Pocketbook. Rome. <https://doi.org/10.4060/cb4478e>

Table 3 Dynamics and structure of global energy consumption by primary sources in 2000–2020

Parameter	Indicator		
	2000	2010	2020
Total, million tons of oil equivalent	9096	11,978	13200
Total, %, incl.	100	10	100
Oil	38.7	33.7	31.3
Natural gas	23.7	23.7	24.7
Coal	24.4	29.5	27.2
Renewables	–	1.4	5.7
Hydroelectricity	6.8	6.5	6.9
Nuclear energy	6.4	5.2	4.3

Source BP (2021)

from 2011–2019 (and then became negative due to the corona crisis in 2020). This is due both to a slowdown in the pace of energy consumption in China, the main energy consumer in the world, and a halt or even a reduction in energy consumption in the leading developed countries due to an increase in the energy efficiency of their economies (see Table 4).

Another conclusion from Table 3 is that despite the active growth in the share of renewable energy sources in the 2010s, their share remains low (in the world's largest energy consumers—China and the US—the share of renewables is 5% and 7%, respectively), although in some countries it is already significant—12% in the EU, 17% in Brazil (thanks to the active use of biofuels). About half (45%) of energy produced from renewable sources comes from wind and about a quarter from solar energy.

Table 4 Primary energy consumption in the world's leading economies in 2010–2019, million tons of oil equivalent

Country	Indicator		
	2000	2010	2019 (est.)
USA	2287	2278	2274
Germany	331	322	316
Japan	516	505	449
China	805	2403	3406
India	313	520	819
Russia	640	669	716

Source BP (2021)

According to the forecast of the International Energy Agency (IEA), in 2030, compared with 2020, primary energy production in the world should increase by 14%, primarily due to less developed countries. At the same time, the share of hydroelectricity should remain unchanged—at 3%, the share of nuclear energy should increase slightly—from 5 to 6%, and the share of renewables should jump—from 9 to 21%, the share of oil (from 29 to 28%) and natural gas (from 24 to 23%) should decrease slightly, the share of coal (from 26 to 19%) and traditional use of biomass (4% to a negligible amount) should drop significantly.

Source IEA (2021)

The chronic problem of the global fuel and energy complex remains the asymmetry between primary energy consumption and its production: one part of the world's countries are net exporters, and the other—net importers of primary energy sources (compare Tables 4 and 5).

While the US has been able to eliminate its imbalance between primary energy production and consumption, Germany still faces this imbalance, and Japan is growing. China and India have become major net importers. Russia continues to be the largest exporter of primary energy.

A huge part of oil, gas, and coal goes to electricity production. Thermal power plants together with hydro and nuclear power plants produced 28,466 billion kWh

Table 5 Primary energy production volumes in the world's leading economies in 2000–2019, million tons of oil equivalent

Country	2000	2010	2019 (est.)
USA	1667	1724	2177
Germany	135	129	112
Japan	104	100	49
China	1124	2235	2449
India	351	504	554
Russia	N/A	N/A	1429

Source IEA. Countries and Regions. <http://www.iea.org/countries>

Table 6 Electricity production in the world by sources of production in 2021

Parameter	Share in production, %
Thermal power plants	61.4
Including those using oil and oil products	2.5
Natural gas	22.9
Coal	36.0
Nuclear power plants	9.8
Hydroelectric power stations	15.0
Renewable sources	12.8
Other	0.9

Source BP (2022)

Table 7 Electricity production in the world's leading economies in 2021, billion kWh

Country	Indicator
USA	4406
Germany	585
Japan	1020
China	8534
India	1715
Russia	1157

Source BP (2022)

of electricity in 2021. According to the sources, this product is distributed as follows (see Table 6).

As we can see, the vast majority of electricity in the world is produced at thermal power plants and mainly from coal (half of the coal-fired thermal power plants are located in China, and there are a lot of them in India and the USA). However, there is a move towards replacing coal with natural gas in thermal power plants, and thermal power plants, in turn, with renewable energy power plants.

The main electricity producers in the world are the same six countries (Table 7).

5 Metals, Chemicals, and Timber

The metallurgical complex is one of the cornerstones of the economy, since almost all the most important industries are based on its products, although the production of metals itself does not make a large contribution to the global GDP (for example, steel production accounts for no more than 1%). At the same time, metallurgy is highly dependent on the conjuncture of the world economy, which causes relatively high price volatility and uneven growth rates of its products. Other features include a high

level of capital and energy intensity of production; metallurgy is also characterised by long-term investment cycles. In addition, the industry is characterised by a fairly high introduction of new technologies, which has already seriously reduced energy costs for production, as well as a serious expansion of the range of these products.

Metallurgy as an industry is important both for the countries actively undergoing the stage of industrialisation and for developed countries. This could be illustrated by the example of ferrous metallurgy. Between 1970 and 2021, the output of steel in the world increased from 595 million tons to 1.951 million tons, i.e., 3 times. Asia, and especially China, had a particular impact on the growth of steel production and consumption, with their share in world production increasing from 4% in the 1960s to 57% in 2021. At the same time, although the importance of developed countries is falling, they remain among the leading importers and exporters of steel (see Table 8), since ferrous metals are actively used in construction (about 50% of all products), automotive (about 10%) and other industries.

In recent decades, the steel industry has been characterised by low participation of products in international trade: the share of exported steel, despite a slight increase in some decades, in 2021 amounted to only 25%, which corresponds to the indicators of 1975. This is because steel does not participate in trades directly but in the form of finished goods. Another notable features of the global steel market are the degree of its concentration since the 5 largest companies account for 18%, and the 20 largest—for 40% of output. Moreover, unlike, for example, the oil and gas industry, metallurgy does not have such a high degree of vertical integration of companies, although in the 2000s in developing countries (primarily in China) there was a tendency to consolidate mining and processing assets. According to forecasts, by 2035, global

Table 8 Steel production and trade in the world, 2021

Production	million tons	Share, %		Exporter	Share	Importer	Share, %
		2010	2021				
China	1032.8	44.6	52.9	China	8.3	EU	10.4
India	118.2	4.8	6.1	Japan	6.1	USA	6.5
Japan	96.3	7.7	4.9	Russia	6.0	China	6.0
USA	85.8	5.6	4.4	South Korea	5.8	Germany	5.1
Russia	75.6	4.7	3.9	EU	5.6	Italy	4.5
Korea, Rep. of	70.4	4.1	3.6	Germany	6.2	Turkey	3.5
Turkey	40.4	2.0	2.1	Turkey	4.8	Thailand	3.4
Germany	40.1	3.1	2.1	India	4.4	Mexico	3.3
Brazil	36.2	2.3	1.9	Italy	3.7	South Korea	3.1
Iran (est.)	28.5	0.8	1.5	Ukraine	3.4	Poland	
World	1951.2	100	100		100		100

Source World Steel in Figures 2021, World Steel in Figures 2012; author's calculations according to the World Steel Association

steel production should reach about 2 billion tons, but the geographical structure should be less skewed towards China.

As to non-ferrous metallurgy, it is worth highlighting the production of aluminium, copper, zinc, lead, etc. This industry is also characterised by dynamic, but very unstable growth (since 1975, aluminium production has increased more than 5 times). Since China consumes half of these leading non-ferrous metals, the volume of world production strongly depends on the economic dynamics in this country. Major changes have taken place in the geographical structure of production over the past 50 years: the role of North America and Europe has greatly decreased (in 1975, North American countries produced 36% of all aluminium, and in 2020—only 6%) whereas that of Asia and South America has increased. At the same time, by reducing the production of base non-ferrous metals, developed countries are trying to concentrate on strategic metals (cobalt, titanium, zirconium and others), access to which is severely limited in the world. A serious problem of the non-ferrous metals market remains their extremely uneven distribution (up to 40% of the reserves of all rare earth metals are concentrated in China) and production (up to 70% of cobalt production is in Congo), which increases competition.

The problem also lies in the fact that strategic metals primarily become the basis for the announced global energy transition. For example, the production of electric vehicles is highly dependent on cobalt and lithium. And if more than 40% of lithium production comes from Australia, then cobalt production in Congo is increasingly controlled by Chinese multinational enterprises, which may complicate the access of US automotive giants to these resources and add to conflict potential.

In general, if we talk about the prospects of the global metallurgical market, experts are very optimistic about its development. The growth of the world population increases the pace of construction and, consequently, the production of base metals, and the transition to a low-carbon economy increases the demand for non-ferrous (primarily strategic) metals. Indirect evidence of these trends is the confidence of the global financial markets in metallurgical companies: during the corona crisis, their capitalisation increased, as investors perceived these securities as a means of saving money. However, some obstacles and risks stand in the way of the metallurgical products' development. Firstly, resources are being depleted, and the cycle of introducing new mining technologies and the progress of geological science exceeds the average period of obsolescence of mines. Secondly, insufficient production volumes with growing demand can cause serious price fluctuations. Moreover, both production and demand depend on multiple external factors (e.g., energy prices or Chinese lockdowns). Thirdly, metals prices are very volatile and also depend on multiple forces (for example, US and EU sanctions against Russian metals blew up prices in early 2022). Fourthly, strategic metals are extremely unevenly distributed in the world. This fact increases competition in the markets of critical metals. Experts see the development of a circular economy as a way out of such a potential situation, but the problem is that even developed countries still lack its capacities.

The global chemical complex is also one of the main ones for developing the world economy, while its contribution to the world GDP reaches 4% considering the use of chemical products in other industries, and the share of chemical products in global

exports is about 10%. The modern economy contributes to the growth of demand for chemical products, as a result, the annual growth rate of this industry (about 7% since the mid-1980s) outpaced the growth rate of world GDP. This is due to both the growing consumption in developing countries, technological development, and the expansion of mass consumption society in developed countries.

As a result, the traditional structure of global chemical production consists of the mining and chemical industry (extraction and primary processing of salts, phosphorites, apatites, sulphur), basic chemistry (the production of inorganic substances such as fertilisers, soda, acids, alkalis), polymer materials industry (rubber, resins, plastics) and organic chemistry (ethylene, polypropylene, acetone), as well as fine chemistry and household chemicals (pharmaceuticals, perfumes, cleaning products), varies in different countries and regions. Chemical production is shifting towards developing countries (China already accounts for 45% of sales), but there they are still more represented in the industries with a low degree of conversion (primarily the mining and chemical industry and basic chemistry). Developed countries, however, dominate in pharmaceuticals and the production of household chemicals.

This is indirectly evidenced by the statistics on the world trade in chemical products (see Table 9). It should be noted that developed countries still retain a leading role in world trade (both in exports and imports), which indicates a high degree of their involvement in global chemical product chains. Developing countries rely mainly on their natural competitive advantages, as evidenced by the serious role of Russia in the export of fertilisers and Saudi Arabia in the export of polyethylene. Such a structure of world trade in chemical products results in a situation where, on the one hand, there is not a completely uniform distribution of value added in the industry, and on the other hand, there are some contradictions between developed and developing countries. For example, developed countries demand that developing countries open access to their pharmaceutical markets within the framework of the WTO. In turn, developing countries face non-tariff restrictions on the markets of developed countries in the supply of chemical products.

The main prospects for the development of the industry include a further shift in chemical production towards Asian countries, a relative increase in demand for household chemicals against the background of population growth and income; and the intensification of competition between major manufacturers, although the list of leading companies is likely to continue to be dominated by the ones from developed countries. At the same time, the decarbonisation of the world economy should also affect the chemical industry, which can lead to some restrictions in output (due to stricter standards and the prohibition of certain types of goods), as well as the need for increased investment and the introduction of new technologies in achieving carbon neutrality by chemical industries.

The global timber industry complex probably depends even more on current trends in climate change and the transformation of production in this regard. On the one hand, the forest complex is not the leading one in terms of value-added production (less than 1% of GDP), but its importance is great for income and employment in many developing countries (especially considering informal employment). According to UN estimates, 25% of the world's population depends on forests for

Table 9 Trade in chemical products in 2020

Chemical products (in general)		Fertilisers		Polyethylene		Pharmaceuticals	
Export	Import	Export	Import	Export	Import	Export	Import
USA (11.2%)	USA (16.4%)	Russia (13.6%)	Brazil (137%)	USA (16.1%)	China (27.8%)	Ireland (15.8%)	USA (21.1%)
Germany (11.0%)	China (7.5%)	China (12.7%)	India (11.3%)	Saud. Arabia (12.2%)	USA (5.1%)	Switzerland (15.3%)	Germany (11.6%)
China (7.5%)	Germany (6.3%)	Canada (9.9%)	USA (9.0%)	Singapore (7.1%)	Germany (4.5%)	Germany (13.8%)	Belgium (6.4%)
Ireland (6.9%)	Switzerland (3.8%)	USA (7.0%)	China (4.6%)	South Korea (6.0%)	Vietnam (3.3%)	USA (11.0%)	China (5.0%)
France (5.7%)	Belgium (3.7%)	Morocco (6.6%)	France (2.8%)	Canada (5.2%)	Italy (3.0%)	Belgium (8.6%)	Switzerland (4.7%)
Switzerland (5.2%)	Netherlands (3.2%)	Belarus (5.6%)	Australia (2.6%)	Germany (4.7%)	Singapore (2.9%)	China (6.1%)	France (4.6%)

Source UN International Trade Statistics Yearbook 2020. Volume II, pp. 121–127, author's calculations according to World Bank data

their daily lives. However, the global population growth, the reliance of many developing countries on the use of wood as an energy source, the expansion of acreage due to the area of forests, the felling of valuable tree species and climate change processes lead to deforestation (mostly in Africa and South America), threatening the entire forestry industry, which also depends on the endowment of countries with forest resources. Thus, the total area of forests in the world is about 4 billion hectares (5 thousand sq. kilometers per capita), but these areas are extremely unevenly distributed (about 20% of all forests are in Russia).

The main trends in the timber industry include gradual shifts towards increasing added value (outpacing the growth of plywood and recycled paper production compared to Roundwood) while maintaining the traditional geographical structure of production (USA, Russia, Brazil, China, Canada). Meanwhile, the importance of the forest industry may increase in the future, because, firstly, the use of wood pellets refers to renewable energy sources, and secondly, there are wide opportunities in this industry to use the tools of the circular economy. Progressive deforestation should remain a limiting factor in development.

6 Mechanical Engineering

Mechanical engineering (machine-building) is the most important and largest complex branch of the manufacturing industry in terms of value added and the number of employees. Compared with other branches of the economy, the machine-building complex has the following features:

- high knowledge intensity;
- the labour intensity is lower than the average in the manufacturing industry (due to high equipment with expensive tools), while there is a tendency to decrease it due to automation and digitalisation of production processes;
- a wide range and variety of products that tend to grow.

There are various classifications of machine-building complex products, here are the most common (see Table 10).

The machine-building complex is the main sector of the economy for the use of R&D results. In OECD countries, on average, the machine-building complex accounts for about half of business expenditure on R&D and about 70% of the corresponding figure for the manufacturing industry.

Today, the global production of machinery and equipment, measured by value-added, is estimated at over \$6 trillion. The largest manufacturers (and exporters) of machinery and equipment are China, the EU (about 40% of the production of the integration association falls on Germany), the USA, Japan, and the Republic of Korea (see Table 11). China leads in terms of value added, primarily due to information and communication technology, as well as vehicles (the latter are produced mainly for the domestic market). At the same time, China's success is largely due to the use of foreign technologies. Considering the USA, the largest amounts of value added are created in transport engineering (in many respects—the aerospace industry), general engineering, instrumentation, semiconductors, and other electronic components. Transport equipment plays a key role in the Japanese machine-building complex, the country also occupies strong positions in the fields of production equipment, electronics, integrated circuits, and electronic components.

Germany and the Republic of Korea stand out among the countries with a predominance of mechanical engineering in the manufacturing industry. The machine-building complex is the basis of their economy and can produce highly competitive products that are in demand on the world market. If in the case of Germany, we are talking about traditionally strong positions in the production of transport equipment and other medium–high-technology products, where as South Korea has actively increased the production of machine-building products primarily due to information and communication technology.

International trade in machine-building products is characterised by great opportunities for international specialisation and production cooperation due to the variety of products and technological operations, the formation of global value chains, and intensive reduction of production costs.

Table 10 Main classifications of machine-building complex products

Classification	Industry (type of product) Industry (activity)
UN International Standard Industrial Classification of All Economic Activities	Computer, electronic, and optical products; electrical equipment; machinery and equipment n.e.c.; motor vehicles, trailers, and semi-trailers; other transport equipment
UN Standard International Trade Classification	Power-generating machinery and equipment; machinery specialised for particular industries; metalworking machinery; general industrial machinery and equipment, n.e.s., and machine parts, n.e.s.; office machines and automatic data-processing machines; telecommunications and sound-recording and reproducing apparatus and equipment; electrical machinery, apparatus, and appliances, n.e.s., and electrical parts thereof; road vehicles (including air-cushion vehicles); other transport equipment
WTO classification (used in statistics)	Office and telecommunication equipment; transport equipment; other machinery and equipment
Classification by the Commodity Nomenclature of Foreign Economic Activity of the EAEU	Machinery, mechanical appliances; electrical machinery and equipment; transport equipment (railway or tramway locomotives; vehicles other than railway or tramway rolling stock; aircraft, spacecraft; ships, boats, and floating structures); instruments and apparatus; clocks and watches; arms and ammunition

The products of the machine-building complex represent an active part of the fixed capital, and therefore their production is cyclical, developing under the laws of the medium-term (industrial) Juglar cycles and long economic cycles (Kondratiev waves). At the same time, the youngest industries, as a rule, have comparative immunity against recession. For example, in the USA during the deep recession in 2009, when the value added of all branches of the machine-building complex fell by 12.9%, that of the computer and electronic products increased by 2.4%.

The development of the machine-building complex in the twenty-first century, as well as the entire world economy, is characterised by a change in the balance of forces between developed and developing countries in favour of the latter. This was most clearly manifested in China's entry into first place (among the countries of the world) in the production of machine-building products. The growth of China's share was accompanied by a decrease in the corresponding share of most developed

Table 11 Key indicators of the machine-building complex of individual countries of the world, 2019

Country (association)	Indicator				
	The volume of value added, \$ billion	Share in GDP, %	Share in the value added of the manufacturing industry, %	Share in the global production of engineering products, %	Number of employees, thousand people
World	6076.2	7.3	43.9	100	–
G7	2224.2	7.0	44.9	36.6	16,001.2
China	1566.6	11.0	41.0	25.8	47,422.0
EU-28, including:	1120.2	6.8	43.3	18.4	11,031.3
Germany	405.8	11.6	53.7	6.7	3414.0
Italy	101.8	5.7	34.1	1.7	1201.1
France	102.8	4.2	37.6	1.7	787.0
Great Britain ^a	95.1	3.8	37.5	1.6	805.5
USA	961.4	4.5	40.6	15.8	5841.0
Japan	457.2	10.0	49.2	7.5	3450.9
Korea, Rep. of	226.1	15.0	54.3	3.7	1501.8

Source Calculations and estimates based on statistics of relevant countries and international organisations

^aGreat Britain was a member of the EU in 2019

countries. Similar trends were observed in the international trade in machinery and equipment. However, those developed countries that specialise in high-quality means of production have not lost. This idea is confirmed by the fact that of the 24 machine-building MNEs included in the list of the 100 largest non-financial MNEs formed by UNCTAD, 22 are based in developed economies (5 each in the USA, Germany, Japan, 2 each in France and China, 1 each in the Netherlands, Taiwan, South Korea, Ireland, Sweden).

If we consider the evolution of specialisation in the branches of mechanical engineering in a large section in the twenty-first century, then the developing countries have made the greatest breakthrough in the industries producing office and telecommunication equipment. These industries produce, among other things, various computing machines (computers), audio and video equipment, recording devices, telephones, integrated circuits, and electronic components. Due to the use of the advantages of the international labour division and the opportunities to reduce costs, production was transferred to China, the countries of Southeast Asia. In the field of the production of the element base, such economies that previously belonged to the category of developing, such as Taiwan, Singapore, and South Korea, retain and increase specialisation.

To a lesser extent, the positions of developing countries in the field of other machinery and equipment, as well as transport equipment, have strengthened. In the automotive industry, developed countries retain competitive advantages in the global market, although mass production of cars is growing in developing countries. The positions of developed countries are still strong in the field of aircraft engineering (both civil and military), which is a particularly knowledge-intensive industry, requiring a huge accumulated and constantly increasing scientific and technical potential. Among other machinery and equipment, the positions of developing countries have strengthened, primarily in the fields of industrial equipment (including agricultural machinery), metalworking machines, and consumer electronics.

7 Light Industry

The light industry includes the production of consumer goods, such as textile, clothing, footwear, and jewellery, as well as intermediate goods for other industries.

The global light industry has been growing rapidly since the 1970s due to trade liberalisation, growth in consumer demand, the spread of global value chains, and the development of e-commerce. Since the mid-2000s, the leadership in the production and export of light industry items has transferred from developed countries to developing ones due to the rise in foreign and national investment.

In particular, the most dynamic growth has been seen in the textiles and clothing trade, driven by the short product life cycle, seasonality, online orders, and delivery speed (usually the next day). The pre-pandemic annual volume of trade in textiles and clothing reached \$315 billion and \$505 billion, respectively, representing 1.6 and 2.6% of the world merchandise trade. The confinement measures around the world in 2020 reduced the demand for most consumer goods, including clothing—by 9.1%. By contrast, the global exports of textiles showed 16%, driven by the demand for personal protective equipment (480% of the textile face masks).

The leader in the production and export of textiles and clothing has been China (43.5% and 31.3% of world exports, respectively). The country's accession to the WTO in 2001 and lifting quotas after the expiration of the WTO Agreement on Textiles and Clothing (ATC) in 2005 made China an important centre of global value chains. As wages in China have risen, production has shifted to lower-wage countries such as Bangladesh, India, Pakistan, Vietnam, Thailand, and Indonesia. Their role in production and export continues to grow. For Bangladesh, exports of clothing account for 85% of the country's total exports, for Pakistan—more than 40%, and for Cambodia—more than 30%.

The United States and the European Union continue to play a significant role in production and exports. For example, Italy, Germany, Spain, and France are major clothing exporters.

In 2020, China, the EU, and India accounted for 65.8% of global textile exports. In clothing exports, the top four—China, the EU, Vietnam, and Bangladesh account for 72.2% of global exports.

In the textiles and clothing import, the US and the EU are leading, accounting for 36.9% of global textile imports and 50.9% of global clothing imports. Among European countries, the highest clothing spending has been recorded in the UK, Germany, Italy, France, and Spain. However, the share of the US and the EU imports of textiles and clothing has declined from 39.4 and 65.8%. The emerging economies' consumption has grown at a greater rate, especially in China. Even in 2020, the country showed a 6% growth in apparel imports, while most other countries reduced their imports.

Being labour-intensive traditionally, the light industry has recently become more knowledge-intensive. Such rapid growth in textiles and clothing sales has pressure on GHG emissions and the use of primary raw materials and water. Therefore, the ESG agenda is also becoming increasingly important for shareholders, investors, and customers. A series of measures and legislative instruments for conscious consumption, environmental responsibility, sustained use, and waste avoidance have been developed (Tables 12 and 13).

8 Construction Industry and Utilities

The construction industry includes housing and industrial construction, modernisation of infrastructure, production of building materials and structures, and development of engineering solutions. The construction industry plays an important role in economic growth in both developed and developing countries. The pre-pandemic value of the global construction market has reached \$12 trillion (Statista, 2022). 100 million people are employed in various segments of the industry. The share of the construction in GDP is 5% for developed countries and 8% for developing ones. New technologies in the construction industry aim at increasing the efficiency of construction, safety, and environmental friendliness of the materials.

The largest construction markets in the world are China (\$3.3 trillion), the EU (\$2 trillion), the US (\$1.36 trillion), Japan (\$594 billion), and India (\$506 billion). The markets of Indonesia, Great Britain, Mexico, Canada, and Nigeria have also shown significant growth.

The growth rate of residential construction and housing prices depend on the increase in the urban population, the internal and external influx of migrants, and the availability of mortgages. Real estate in one country can be purchased by non-residents as an investment, which can also stimulate demand and drive prices up. The highest real estate prices in the world are observed in Hong Kong, Singapore, Switzerland, South Korea, and Israel.

A “construction boom” has occurred in some countries during different periods. For example, in China, it was caused by domestic urbanisation stimulated by rapid economic development. China's urban population has increased from 10.6% in 1949 to 64.7% in 2021. Also, the rapid growth of the real estate market in the US in 2005–2006, followed by the mortgage crisis, caused the global financial crisis of 2008–2009.

Table 12 Top 10 exporters and importers of textiles, 2020

		Value, \$ billion	Share in world exports/imports, %		Annual percentage change	
		2020	2000	2020	2010–2020	2020
<i>Exporters</i>						
1	China	154	10.3	43.5	7	29
2	EU	64	33.4	18.1	0	–3
	Extra-EU exports	22	11.5	6.1	0	–9
3	India	15	3.6	4.2	2	–12
4	Turkey	12	2.4	3.3	3	–1
5	USA	11	7.0	3.2	–1	–15
6	Vietnam	10	0.2	2.8	13	11
7	Korea, Rep. of	8	8.1	2.2	–3	–15
8	Pakistan	7	2.9	2.0	–1	–8
9	Taiwan, China	7	7.6	2.0	–3	–17
10	Japan	6	4.5	1.6	–2	–14
Above 10		294	80.0	83.0	–	–
<i>Importers</i>						
1	EU	87	29.7	24.3	3	29
	Extra-EU imports	50	9.6	14.1	7	69
2	USA	45	9.7	12.6	7	44
3	Vietnam	16%	0.8	4.4	8	–8
4	China	14	7.8	3.9	–2	–10
5	Japan	12	3.0	3.3	5	34
6	UK	11	4.4	3.0	4	52
7	Bangladesh	9	0.8	2.5	7	–17
8	Canada	6	2.5	1.8	4	41
9	South Korea	6	2.0	1.6	2	9
10	Indonesia	5	0.8	1.5	2	–21
Above 10		211	61.4	58.9	–	–

Source WTO (2021)

Residential construction includes private homes, low-rise buildings, high-rise buildings, and skyscrapers. The largest number of skyscrapers have been built in China, the US, Japan, the United Arab Emirates, and the Republic of Korea. An average living space per person can vary considerably. For example, in China, micro-apartments with an area of 6 sq. meters are in demand. On average, there are 75 sq. meters of living space in the US, Germany—45 sq. meters, China—30 sq.

Table 13 Top 10 exporters and importers of clothing, 2020

		Value, \$billion	Share in world exports/imports, %		Annual percentage change	
			2020	2000	2020	2010–2020	2000
<i>Exporters</i>						
1	China	142	18.2	31.6	1	–7
2	EU	126	26.4	27.9	3	–8
	Extra-EU exports	38	8.1	8.4	4	–13
3	Vietnam	29	0.9	6.4	11	–7
4	Bangladesh	28	2.6	6.3	7	–15
5	Turkey	15	3.3	3.4	2	–6
6	India	13	3.0	2.9	1	–24
7	Malaysia	10	1.1	2.2	10	73
8	UK	8	2.1	1.9	4	–7
9	Hong Kong (SAR)	8	N/A	N/A	–10	–33
	Domestic exports	0	5.0	0.0	–12	240
	Re-exports	8	N/A	N/A	–10	–34
10	Indonesia	8	2.4	1.7	1	–12
Above 10		378	65.1	84.2	–	–
<i>Importers</i>						
1	EU	168	32.7	34.1	2	–7
	Extra-EU imports	86	16.4	17.6	1	–9
2	USA	82	33.1	16.8	0	–14
3	Japan	26	9.7	5.3	0	–12
4	UK	26	7.5	5.3	0	–1
5	Canada	10	1.8	2.1	2	–6
6	South Korea	10	0.6	2.0	8	–12
7	China	9	0.6	1.9	14	6
8	Switzerland	8	1.6	1.6	4	4
9	Hong Kong (SAR)	8	N/A	N/A	–7	–31
	Retained imports	1	0.9	0.2	N/A	6
10	Russia	8	0.1	1.6	0	–5
Above 10		349	88.5	71.0	–	–

Source WTO (2021)

meters, Brazil—24 sq. meters, Russia—22 sq. meters, Turkey—18 sq. meters, and Nigeria—6 sq. meters.

The companies operating in the industry can be private, state-owned, or in mixed forms of ownership. Companies are focusing on the local market and operating globally making foreign direct investments. In particular, companies from China, the US, Turkey, Spain, France, Germany, Great Britain, Italy, South Korea, and Japan are active in the international market. In 2021 the first 4 of the 100 largest construction companies in the world come from China (Oxford Economics, 2021).

Utilities are responsible for the maintenance of buildings, energy supply, water supply and sanitation, repair, provision of urban amenities, and garbage disposal. In all countries, this sector is usually represented by monopolies, state-owned enterprises or private companies regulated by the state.

Access to housing and public utility services is uneven across the world. The poorest countries lack access to water supply, sanitation, and hygiene. According to World Health Organization and UNICEF, 2.2 billion people don't have access to drinking water while 3 billion people lack hand-washing facilities with soap. Living conditions can differ within one country, in cities and rural areas, as well as depending on the specific region and the well-being of the population. Solving this problem requires significant investment in infrastructure and the efforts of the global community. One of the UN's sustainable development goals (SDG) and several international organisations' initiatives are devoted to providing access to sanitation and hygiene.

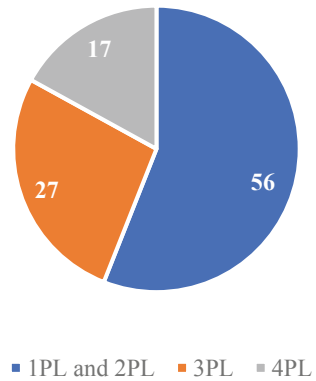
The challenge for the utility sector in developing countries is growing urbanisation, which increases the pressure on this sector. Significant investments are also needed to modernise public infrastructure. In developed countries, high-quality public services are usually provided for all citizens, and water consumption averages 120–150 L per person per day.

In recent years, digital technologies have vastly affected the construction industry and utility services. A “smart city” concept is getting popular, including the integration of various information and communication technologies for planning construction and managing urban infrastructure.

9 Connectivity: Transport, Logistics, and Communication

Connectivity issues are mainly executed within global supply chains. When broken down to *transport* and *logistics*, cargo-related connectivity operations include, albeit are not limited to, transportation, warehousing, handling, inventory management, tracking and tracing, customer–supplier relationship, and customs, finance, and insurance consulting usually rendered under the single-window policy. Given major global economic trends, international transport and logistics are witnessing an increase in outsourcing and greater integrity, a rising role of regional trade blocks in facilitating trade, and a motion to greening.

Fig. 1 Structure of the world market of transport and logistics services broken down to logistics providers in 2020, % (Source Compiled by the authors based on [RBC Group, 2021])



As of today, almost 55% of all transport and logistics operations worldwide are outsourced and rendered by the so-called logistics providers. These providers (graded by their abilities as 1PL, 2PL, 3PL, and 4PL) offer different packages of related services. In their turn, the 3PL and 4PL usually referred to as an operator and an integrator, respectively, are at the front when speaking about rendering integrated transport and logistics services under the single-window policy. Up to date, these segments account for almost 44% of the world market (see Fig. 1). PLEASE REDUCE THE SIZE OF THE FIGURE

In 2020 the world's top-5 largest providers of integrated transport and logistics services (ranked by gross revenue) constitute DHL Supply Chain & Global Forwarding (Germany), Kuehne + Nagel (Switzerland), DB Schenker (Germany), Nippon Express (Japan), and DSV Panalpina (Denmark).

Regional processes do also shape international transport and logistics. For instance, the creation of a single customs territory and the harmonisation of the related regulatory framework within regional integrative agreements tend to generally facilitate transboundary trade. According to the WTO estimates, customs and other administrative procedures in place result in annual border-crossing costs worth \$2 trillion. Moreover, if the WTO Trade Facilitation Agreement were fully implemented, global trade costs could be reduced by 14.3%, leading to an annual increase in global trade of 2.7% by 2030.

Finally, transport remains one of the main polluters of the environment, thus, being subject to greening tendencies. As International Energy Agency (IEA) puts it, transport is responsible for 25% of the world's overall CO₂ emissions. When broken down to the existing modes of transport road segment accounts for almost 75%. Maritime transport is ranked second producing almost 20% of respected emissions. In their turn, CO₂ emissions from shipping and aviation have been rising rapidly in the past two decades, i.e., by 150% and 130%, respectively. To make the Net Zero Emissions by 2050 Scenario modelled by the IEA possible it is required to reduce the emissions by 20% already by 2030. Thus, transport decarbonisation could be achieved by greater usage of modal-shift options and eco-friendly vehicles. For instance, the EU is constantly encouraging a shift of cargo flows from road to rail or

Table 14 Global electric vehicle stock by region in 2012–2020, million units

	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	0.0	0.0	0.1	0.5	0.9	1.7	2.9	4.1	5.4
Europe	0.1	0.1	0.2	0.4	0.6	0.9	1.3	1.9	3.3
USA	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.5	1.8
Others	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.6	0.8

Source IEA (2022)

inland waterway modes. In terms of eco-friendly rolling stock, there were 6.7 million electric vehicles sold worldwide in 2021. It is expected that there will be 127 million electric vehicles in operation by 2030 and 424 million by 2050. Viewing regionally China, the EU, and USA account for almost 90% of all the electric vehicles stock (see Table 14).

Rooted in the OECD (2021) estimates, global freight demand is said to triple between 2015 and 2050 based on the current demand pattern. As of today, the global freight turnover (in tons per kilometre) split by modes is as follows: maritime (70%), road (18%), railway (9%), inland waterway (2%), and air (less than 1%). In 2020 international maritime trade levelled at 10.65 billion tons. Crude oil, gas, refined petroleum products, iron ore, grain, and coal represent the core of the seaborne trade cargo base. Almost 18% of global seaborne trade is done in containers. As of 2020, the world's top-5 leading container ports are located in Asia: Shanghai (43.5 million TEU¹ handled), Singapore (36.9 million TEU handled), Ningbo-Zhoushan (28.7 million TEU handled), Shenzhen (26.6 million TEU handled), and Guangzhou (23.2 million TEU handled). From the regional perspective, Rotterdam is the biggest port for handling containers in the EU, Dubai—in the Middle East, Colombo—in South Asia, Santos—in Latin America, Los Angeles—in North America, and Saint-Petersburg—in the CIS.

As for passengers, according to the OECD (2021) estimates, passenger freight turnover is likely to increase three-fold between 2015 and 2050 from 44 to 122 trillion passenger-kilometres. Up-to-date global passenger turnover (in passengers per kilometre) is mainly executed by road (80%), air (11%), and railway (9%).

World exports of transport services in 2020 saw a year-to-year decline of 20.7% and levelled at \$819.2 billion. In its turn, China became the world's largest exporter of transport services (see Table 15).

COVID-19 pandemic had heavily hit international transport and logistics as well as global supply chains at large leading to several disruptions. As for freight, in 2020 the seaborne trade showed a 3.8% decrease compared to 2019. However, UNCTAD (2021a) envisages maritime trade volumes to increase by 4.3% in 2021 and continue to be on the rise in 2022–2026. Post-Covid demand coupled with higher energy prices has led to a rocket in sea freight rates. According to the World Container Index (WCI), freight rates per one forty-foot container in 2020–2021 have almost

¹ A twenty-foot equivalent (TEU) is a commonly recognised indicator to measure containerised trade with a standard twenty-foot container as a benchmark.

Table 15 Top-5 exporters of transport services in 2012–2020, \$ billion

	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	38.9	37.6	38.2	38.6	33.8	37.1	42.3	45.9	57.6
France	47.4	45.9	48.0	41.2	40.3	46.0	46.4	46.8	43.0
Germany	56.8	60.5	61.8	56.6	55.2	61.6	69.7	69.6	54.3
Singapore	44.5	46.2	50.4	46.6	41.3	48.2	61.2	62.5	53.1
USA	88.3	90.0	90.7	84.4	81.8	86.3	93.1	91.0	56.7

Source International Trade Centre WTO/UNCTAD (2022)

quadrupled. In its turn, global ports experienced massive call congestions with now only a third of all container ships worldwide being on schedule. As far as the passenger segment is concerned, International Air Transport Association (IATA) claims that global passenger air turnover in 2019–2020 plummeted by 50%. In its turn, overall losses incurred by the industry in 2020–2022 exceeded \$200 billion with profitability expected only in 2023.

Communication services under the GATS framework could be broken down into audio-visual services, postal and courier, express mail services as well as telecommunications. In its turn, telecommunications imply telecommunications, computer, and information services. Thus, the telecom segment is characterised by an increasing number of both internet and mobile audiences, and outpacing the growth of mobile broadband subscriptions over the fixed one.

As to the 2021 International Communication Union (ICU) estimates, the number of Internet users constitutes 4.9 billion people (compared to 4.1 billion people in 2019). Thus, the related audience grew even during the pandemic. When broken into the region, the largest percentage of individuals using the Internet is in Europe (87%), with CIS (82%) and Northern and Latin Americas (81%) ranked second and third, respectively.

Overall, fixed connectivity is steadily losing its ground. Fixed telephony declined from 19 subscriptions per 100 inhabitants in 2006 to 11 subscriptions in 2021. Besides, the mobile cellular subscription levelled at 110 subscriptions per 100 inhabitants in 2021 as opposed to 76.6 in 2010. In its turn, fixed broadband subscriptions were on the rise since 2015 and reached 17 subscriptions per 100 inhabitants in 2021. At the same time, mobile broadband subscriptions per 100 inhabitants rocketed from 11.5 in 2010 to 83 in 2021.

It is worth stressing that the mobile broadband audience increased both in developed and developing economies. Overall, almost 95% of the world's population has access to a mobile broadband network. 4G network coverage doubled between 2015 and 2021 and reached 88%. 3G accounts for almost 7% with the remaining 5% left for 2G connection.

In 2020 the size of the global telecom market roughly equalled \$2.6 billion and is expected to mark \$3.8 billion in 2026. The Asia–Pacific holds the largest share (around 40%) of this market followed by North America and Western Europe. At the corporate level, the major players are as follows: AT&T (USA), China Mobile Ltd.

Table 16 Top-5 exporters of telecommunications, computer, and information services in 2012–2020, \$ billion

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Ireland	41.3	48.2	56.5	56.7	65.1	77.7	110.4	131.5	151.3
India	48.8	53.8	54.5	55.0	53.8	54.4	58.2	64.9	68.2
China	16.2	17.1	20.2	25.8	26.5	27.8	47.1	53.8	59.0
USA	33.5	36.3	38.7	41.4	43.1	47.7	49.3	54.8	56.7
Germany	25.3	27.2	29.2	30.3	25.6	29.4	32.8	32.3	34.6

Source International Trade Centre WTO/UNCTAD (2022)

(China), Verizon Communications (USA), Vodafone (UK), Nippon Telegraph & Tel (Japan), and Deutsche Telekom AG (Germany).

World exports of telecommunications, computer, and information services in 2020 levelled at \$683.4 billion demonstrating a 0.5% increase compared to 2019. Ireland turns out to be the leading exporter of these services (Table 16).

10 Science, Education, and Health

Scientific resources and R&D costs were discussed in paragraph 7.2. Here, we should consider the structure of these costs by branches of knowledge on the example of several economies of the world (see Table 17).

As we can see in the table, China, the Asian “tigers” and Russia place a strong emphasis on technical sciences, India pays great attention to research in the field of agriculture, and the European countries listed in the table spend a lot of money on social sciences and humanities. For the United States and the United Kingdom in 2019, health and the environment have been the largest shares of non-defence spending, at 56% and 30%, respectively. These shares have remained at these relatively high levels since 2000.

10.1 Education

While knowledge is developed primarily in the field of science, then it is distributed mainly through the field of education. Therefore, education, like science, stands out as a separate type of economic activity.

In the 2020s, in all likelihood, the trend of increasing spending on education and, above all, on higher education will continue, for which more than one-third of total public spending on education is allocated in developed countries. On average, in OECD countries, education accounts for 27% of public spending on education, which is the minimum value of the indicator. It ranges from 15 to 20% in Ireland, Israel,

Table 17 GDP expenditure on R&D by field of research in 2020^a, %

	Total, including	Natural sciences	Engineering & technology	Medical & health sciences	Agricultural & veterinary ^a sciences	Social sciences	Humanities
Netherlands	100	23.2	39.6	16.9	8.0	9.2	3.1
Denmark	100	16.9	41.4	30.6	2.6	5.3	3.1
Poland	100	21.6	53.5	11.5	4.5	5.1	3.7
Korea, Rep. of	100	18.0	71.2	4.9	1.9	2.3	1.6
Singapore	100	9.9	62.6	19.0	3.2	N/A	N/A
Taiwan, province of PRC	100	9.1	79.2	7.9	1.8	2.2	0.7
India	100	22.6	47.6	6.8	14.5	2.9	N/A
China	100	16.6	70.8	3.4	7.1	2.1	N/A
Russia	100	17.6	72.5	4.0	1.7	2.7	1.5

Source: OECD (2022), Gross domestic spending on R&D (indicator); National Science Foundation National Science Board; National Center for Science and Engineering Statistics (NCSES) Alexandria, VA

<https://nces.nsf.gov/pubs/nsb20225/recent-trends-in-federal-support-for-u-s-r-d>

^aOr latest data available

Japan, and Luxembourg to more than 35% in Austria, Canada, the Netherlands, and Norway. At the same time, private sector investments are growing at a faster pace, especially at the university education level. By the beginning of the 2020s, they account for more than 1.6% of GDP in the United States.

The modern labour market places new demands not only on the educational level of the population but also on the ability to put into practice the analytical and creative competencies formed in the learning process, needs specialists with approaches who can navigate problems of an interdisciplinary nature, quickly and flexibly responding to external changes. Therefore, in the structure of education, it is not only the importance of university education but also various postgraduate education programs that are growing.

According to the forecast, the global university education market after the pandemic will recover to its previous values by the end of 2022—the beginning of 2023. It should exceed \$10 trillion. Its growth is greatly helped by the transition of university education institutions to an online format. This format, together with new pedagogical technologies, as well as digital educational products, stands out in a new industry—Education Technology, or EdTech. For example, in the USA, the percentage of students who fully or partially received online education increased from 30% in 2016 to 62% in 2020. As the pandemic eases, many institutions are realising that properly planned online platforms will allow them to better serve all students, including nontraditional learners.

10.2 Healthcare

The main function of healthcare is the protection of public health. As a field of activity, healthcare can be considered both in a narrow sense (the medical services provided by qualified medical personnel in hospitals, clinics, and other specialised institutions), and in a broad sense—a range of healthcare services, including social services, wellness procedures, sanatoriums, boarding schools and nursing homes with medical care, services emergency care, laboratory tests, etc. Sometimes, when analysing healthcare, the medical industry (including some of the most knowledge-intensive and innovative pharmaceutical and pharmacological industries), as well as health insurance systems, are considered.

Several indicators are designed to characterise the state of the healthcare system: the demographic situation, the morbidity of the population, assessment of the sanitary and epidemiological state, etc. There are also economic indicators for analysing healthcare (healthcare expenditures as a percentage of GDP, the structure of these expenditures (the direction of financial flows for preventive measures, outpatient and inpatient care, etc.), the evaluation of the healthcare system's effectiveness, etc.), the most significant of which are presented in Table 18.

The largest shares of healthcare costs as a percentage of the GDP of large economies were recorded in the USA, France, and Germany. The share of healthcare

Table 18 Key health indicators, selected countries, 2020^a

	Health spending, per capita, US dollars, PPP	Government expenditures, % of all current healthcare expenditures	Private expenses, % of all current healthcare expenses	Senior medical personnel per 10,000 population	Hospital beds per 10,000 population
USA	10,949	50.2	49.8	26.1	28.7
Germany	6731	77.7	22.3	44.3	80.0
Japan	4692	84.1	15.9	24.8	129.8
China	841	56.7	43.3	23.3	43.1
India	257	27.1	72.9	9.3	5.3
Russia	1830	57.1	42.9	38.2	80.5
Brazil	1514	41.9	58.1	23.1	20.9

Source WHO, World Bank, OECD

<https://data.oecd.org/healthqt/hospital-beds.htm>

<https://data.worldbank.org/indicator/SH.XPD.PVTD.CH.ZS>

<https://apps.who.int/gho/data/node.main.SDGCHEPERCAPITA?lang=en>

<https://apps.who.int/iris/bitstream/handle/10665/342703/9789240027053-eng.pdf>

^aOr the last year for which data is available

expenditures from GDP in these countries was more than 10%, with their main part being allocated by the state.

The pandemic has exacerbated the existing problem of a shortage of health workers that exists everywhere. The problem is most acute in sub-Saharan Africa: with 25% of the global morbidity rate, this region accounts for only 3% of health workers in the world. According to 2014–2019 WHO estimates, the African Region counted only 3 doctors and 10 junior medical staff per 10,000 people. Compared to OECD countries, the shortage of health personnel is mainly due to the ageing population and the consequent increase in demand for medical care.

11 Domestic Trade and Food Service Market

11.1 Domestic Trade

Domestic trade covers retail and wholesale trade in goods and services within national economies. Wholesale trade includes the purchase of goods for professional use or further resale, while retail includes the purchase of goods on the individual consumer level.

Global retail sales in 2021 amounted to \$26.7 trillion. The largest markets are China (\$5.9 trillion), the United States (\$5.5 trillion), Japan (\$1.4 trillion), Germany (\$0.9 trillion), and India (\$0.7 trillion). The retail sales performance differs around the world and depends on the purchasing power, the population size, the market

Table 19 Top countries in retail sales and online retail sales, 2021

Country	Retail sales, \$ billion	Online retail sales, \$ billion	Share of online sales in total retail sales, %
China	6950	1956	28.1
United States	6600	768	11.6
Japan	1354	167	12.3
Germany	662	97	14.7
India	690	67	9.7
United Kingdom	571	147	26.0
France	635	93	14.6
Italy	590	54	9.2
Russia	485	9.4	1.9
Brazil	410	41	10.0

Source Compiled by the author based on Statista, UNCTAD, Eurostat, and Rosstat data

saturation, the credit availability, and the logistical infrastructure. The demand for certain categories of goods normally depends on the market conditions. However, food and essential items are in high demand even under crisis conditions.

As a result of globalisation, large companies, including multinational enterprises, have increased their market share. Top 250 companies generate \$5.1 trillion in revenue (19% of global retail sales). The list includes the US and the EU companies mainly, but Asian companies have grown their scale and increased their presence over the past decade.

E-commerce has played an increasingly significant role in trade. The use of e-commerce differs for large and small businesses in developed and developing countries but has shown steady growth. In 2020, due to the COVID-19 restrictions, the global value of B2B and B2C online sales reached almost \$26.7 trillion (UNCTAD, 2021b). The global retail e-commerce sales in 2021 amounted to approximately \$4.9 trillion (18.4% of retail trade). In China, the share of online sales in retail has reached 25% and continues to grow, and in the United Kingdom—19%. Large online platforms, and marketplaces, are constantly being improved. The “new retail”, a combination of traditional offline stores with digital technologies, is gaining popularity (Table 19).

11.2 Foodservice Market

The global foodservice market, represented by multinational enterprises and local companies, amounted to \$2.4 trillion in 2020 (31.5% lower than in 2019 due to the COVID-19 lockdown) and \$3 trillion in 2021. Expenses for food in restaurants and cafes make up a significant share of the household budget in some countries,

for example, in Ireland (14.4%), Spain (13%), Malta (12.6%), and Greece (12.4%). During the pandemic, the foodservice sector has been supported by online delivery, which continues to grow. The restaurants use either their platforms or food platform aggregators. There are also such new business models as gastro-markets, which combine farm products and chain cafes in one space, and food delivery services.

12 Tourism, Sports, and Business Events

12.1 *Tourism*

The tourism industry deals with travels for recreation, entertainment, amateur sports, medical or educational services, for business purposes not related to income generation in the host country. Tourism can be domestic (within one country) and international (inbound or outbound).

According to the 2019 “pre-pandemic” results, the number of international tourist arrivals amounted to 1.5 billion people, which is 60 times more than in 1950—25 million people. The average annual growth in recent decades has exceeded 4%. Such a significant increase was caused by the development of transport infrastructure, cost reduction and increased flight safety, increased income of the population, simplification of the visa regime, the development of information technology, including the ease of booking tickets and accommodation. However, the tourism industry was one of the most affected by the COVID-19 pandemic in 2020. The closure of borders, temporary suspension of flights, visa restrictions, requirements for PCR testing and self-isolation lowered the number of international trips by the end of 2020 by 73%, to 401 million people, with some recovery in 2021—by 4%, to 416 million people (which is still below the level of 2019—72%).

For many countries, tourism is the most important source of income, it contributes to the development of entrepreneurship, and creates new enterprises and jobs. Many sectors of the economy interact with the sphere of tourism. By the end of 2019, the share of tourism in global GDP (Tourism Direct Gross Domestic Product, TDGDP) was 4% (\$3.5 trillion), falling to 1.8% (\$1.6 trillion) and 2% (\$1.9 trillion) according to the results of 2020 and 2021, respectively.

Income from international tourism in the world at the end of 2019 was estimated at \$1.5 trillion (including passenger transport services—\$1.7 trillion), which accounts for 6% of world trade in goods and services and 27% of world trade in services. In 2020 and 2021 it amounted to \$600 and \$800 billion, respectively (3% of world trade in goods and services).

The leading tourist destinations are Europe (accounting for 51% of international tourist trips), the Asia–Pacific region (25%), and America (15%). France, Spain, the United States, China, Italy, Turkey, Mexico, Germany, Thailand, and the United Kingdom are the leaders among the host countries in terms of the number of foreign tourists. These 10 countries account for 40% of tourist arrivals. The USA, Spain,

France, Thailand, Great Britain, Italy, Australia, Germany, Japan, and China are the leaders in income from international tourism. Macau has the largest share of tourism in GDP (48%), and in monetary terms, the leader is the United States (\$598 billion in 2019).

Europe (48%), the Asia–Pacific region (26%), and America (17%) are also leading in outbound tourism. Every second trip in the world falls on Europe. The leaders in spending in the field of outbound tourism are China, the USA, Germany, Great Britain, France, Australia, Russia, Canada, South Korea, and Italy.

12.2 Sports

The sports industry includes producing sporting goods, providing services, holding sporting events, infrastructure, the sports sponsorship, and advertising market, as well as becoming increasingly popular cybersports. By the end of 2020, the global sports industry is estimated at \$388 billion (\$459 billion by the end of 2019). The average annual growth since 2015 was 3.4%. Amateur sports are becoming more and more popular in different countries, in particular, the market for fitness services is developing. Many countries strive to develop high-performance sports. Landmark sporting events (the Olympic Games, the World Cup) enhance the image of the host country, attract fans from all over the world, and give impetus to the development of certain sectors of its economy. Sponsorship agreements of large companies to support sports teams and events are becoming more and more extensive. The sports sponsorship market was estimated at \$65 billion in 2021.

12.3 Business Events

Every year, many business events are held in the world: forums, conferences, seminars, and exhibitions, which are attended by both official delegations of various countries and representatives of the business community. These events contribute to establishing business ties between the countries, concluding new contracts, trade and investment, and the recognition of national brands. Before the pandemic, 1.5 billion people took part in business events.

To engage a larger audience, event organisers often combine sports, entertainment, and business communication formats. The scope of business events also required a significant revision of the business model due to the pandemic. The combination of face-to-face participation with remote participation is becoming increasingly common.

13 Conclusions

1. In economics, capital is an economic resource that can be divided into two categories: real capital and financial capital. Real capital (capital stock) consists of buildings, equipment, software, and inventories. Real capital mainly focuses on the real sector, to which all types of economic activities belong, except the financial sector.
2. In the twentieth century, the transition from the industrial stage of development to the post-industrial stage began in developed countries. As a result, the main direction of changing the sectoral structure of the world economy is the outpacing growth of the service sector (the tertiary sector). Then this process also affected less developed countries. At the same time, one could witness a decrease in the share of both the secondary sector (industry and construction) and the primary one (agriculture and forestry, hunting and fishing).
3. The agro-industrial complex is a set of industries involved in the production, processing and distribution of agricultural products. As a result of globalisation, market decision-making and the implementation of some production functions are increasingly removed from the main resources—land and water, located in other countries.
4. The fuel and energy complex includes the fuel industry, the electric power industry, as well as the transportation and distribution of fuel and electricity. Global production and consumption of fuel and energy resources in the world continue to grow due to an increase in the population and the volume of the world's gross product. At the same time, energy consumption per unit of GDP growth has a downward trend in the world.
5. The metallurgical complex is divided into ferrous and non-ferrous metallurgy. Although steel production accounts for no more than 1% of the world's GDP, it is extremely important for the entire economy because of its close connection with other industries. The key feature of non-ferrous metallurgy is the extremely uneven distribution of resources between countries. The chemical industry supplies the most important products for all industries. The forest complex gives the world GDP no more than 1% of value added, but for many countries, it remains the most important source of income and employment.
6. Mechanical engineering is the largest part of the manufacturing industry in terms of the volume of added value and the number of employees. The machine-building complex, on the one hand, creates achievements of scientific and technological progress, which then spread to the entire economy, on the other hand, embodies the latest achievements of scientific and technological progress.
7. The global light industry has been growing rapidly since the 1970s due to trade liberalisation, growth in consumer demand, the spread of global value chains, and the development of e-commerce. Since the mid-2000s, the leadership in the production and export of light industry items has transferred from developed countries to developing ones due to the rise in foreign and national investment. In particular, the most dynamic growth has been observed in the textile and

clothing trade, driven by the short product life cycle, seasonality, online orders, and delivery speed.

8. The global construction market is estimated at \$12 trillion, with 100 million people employed in various construction segments. The share of the construction complex in GDP is 5% for developed countries and 8% for developing countries. The largest construction markets in the world are China, the EU, the US, Japan, and India. The growth rate of residential construction and housing prices depend on the increase in the urban population, the internal and external influx of migrants, and the availability of mortgages. Digital technologies and a “smart city” concept have vastly affected the construction industry and utility services.
9. As of today, transport and logistics services tend to be globally rendered at a single-window policy, i.e., with a high level of integrity achieved by logistics providers. Simultaneously, transport and logistics worldwide are subject to greening tendencies. The Covid-19 pandemic heavily hit airborne passenger flows and to a less extent, seaborne freight, but now both segments are bouncing back. In its turn, telecom, as a major segment of communication services, is witnessing a shift from fixed to broadband subscriptions both in developed and developing economies.
10. In the twenty-first century, science has become an important branch of the economy, especially in developed countries. There is a shift towards higher education in the structure of education costs in developed countries. High incomes and an ageing population have provoked an increase in the share of healthcare costs in GDP.
11. Domestic trade includes retail and wholesale trade. Global retail sales in 2021 amounted to \$26.7 trillion. The largest markets are China, the United States, Japan, Germany, and India. The retail sales performance depends on many internal and external factors, however, food and essential items are in high demand even under crisis conditions. An increasingly significant role in trade belongs to e-commerce. The sphere of public catering in the world continues to develop primarily due to the enterprises of the budget segment: cafes, mid-segment restaurants and fast-food restaurants as well as gastro-markets and online delivery.
12. The international tourism sector in 2019 accounted for 1.5 billion arrivals and generated income of \$1.5 trillion. The share of tourism in global GDP was 4% (\$3.5 trillion). However, the tourism industry was one of the most affected by the COVID-19 pandemic in 2020, showing recovery in 2021 and 2022 as travel restrictions eased. The leaders in both inbound and outbound tourism are Europe, the Asia–Pacific region, and America.

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Resources of World Economy: Financial Capital



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Abstract The chapter starts by exploring the concept of financial capital as well as its composition and distribution in the world. Then the chapter examines the different patterns of national financial systems, and key trends and challenges of the international monetary and financial system.

1 Introduction

To better understand financial capital, we need to examine the principal segments of financial assets on a national level as well as the composition and distribution of financial capital on the global level. Then we need to examine the different patterns of national financial systems.

Since countries coordinate their financial development on a global basis, we also need to study the evolution of the international monetary and financial system, and especially the trends and challenges of its current stage of development.

2 Concepts of Financial Capital

The financial capital of the world is the sum of the financial assets of countries and international organisations. UN System of National Accounts (SNA, 2008) gives the following classification of main financial assets:

1. Currency and deposits
2. Debt securities
3. Loans
4. Equity and investment fund shares
5. Insurance, pension and standardised guarantee schemes

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6. Financial derivatives and employee stock options.
7. Other accounts receivable/payable.
8. Monetary gold and special drawing rights (SDR, reserve assets created by IMF for its member countries).

The structure of US financial assets gives an example of this classification on the national level (Table 1).

Table 1 shows that the most important types of total US financial assets are equity and mutual fund shares, debt securities, life insurance reserves and pension entitlements. Table 2 shows who in the United States owns these financial assets.

The pre-classical approach of the economic theory generally viewed capital as the “fund” required for the initial procurement of means of production and smooth running of the production process. By funds, many economists of that time meant accumulated sums of money.

Table 1 The structure of US financial assets, end-2021

Type of financial assets	\$ billion
US official reserve assets	412.0
Currency and deposits	9359.1
Debt securities	57,406.0
Loans	2120.7
Equity and mutual fund shares	102,393.1
Life insurance reserves and pension entitlements	34,530.5
Other financial assets	135,206.1
Total	341,427.5

Source US Flow of Funds, Federal Reserve Statistical Release, March 10, 2022

Table 2 The ownership structure of US financial assets, end-2021

Sector of US economy	Financial assets	
	\$ billion	All sectors, %
Domestic non-financial sectors	159,661.3	47
Households and non-profit organisations	118,215.7	35
Non-financial business	33,396.2	10
Federal government	3620.1	1
State and local governments	4429.3	1
Domestic financial sectors	134,782.6	39
Rest of the world (foreign investors)	46,983.6	14
All sectors	341,427.5	100

Source US Flow of Funds, Federal Reserve Statistical Release, March 10, 2022

The classical era of economic thinking was marked by the confusing juxtaposition of the “fund” concept with the concept of capital as “physical capital”. The classical economists considered “capital goods” to be crucial in the production process, though they implicitly continued to analyse the concept in terms of “fund” or money capital. Carl Marx was one of the very first economists to underline the demarcation between physical and financial capital. Rudolf Hilferding considered financial capital as the combination of industrial and commercial and bank capital. Joseph Schumpeter argued that the function of (financial) capital consists in procuring for the entrepreneurs the means with which to produce. He looked at this capital as a third agent between the entrepreneur and “the world of goods”.

John Maynard Keynes used a variety of concepts of capital in developing his arguments. His concept of working capital refers to capital as a resource used to smoothly run the production process or the finance required for production using “physical capital” or “production capital” (‘real capital’ in our terms). The most explicit definition of “financial capital” in recent literature is perhaps provided by Carlota Perez, who focuses on the “motives and behaviour” of agents possessing real and financial capital (Perez, 2003).

We can conclude that for quite a long time, financial capital had been viewed as performing a supportive function in the economy, helping the real sector of the economy operate well. But towards the end of the twentieth century, dramatic changes in the development of finance occurred. Financial intermediaries and technologies have gained unprecedented influence over our daily lives. The expansion of financial markets is not only about the volume of financial trading, but also about the increasing diversity of transactions and market players, and their intersection with all parts of the economy and society. As a result, many experts began to view finance as “an end unto itself rather than as an enabling function”¹ and started to use the term “financialisation” to cover a wide range of trends and aspects that support the exponential development of finance in the last decades. In short, financialisation means the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies (Epstein, 2005).

3 Composition and Distribution of Financial Capital in the World

The composition and distribution of financial capital (as the sum of its most important segments) in the world looks like the domination of the leading developed economies although the share of China is already substantial (Table 3).

Bank assets represent the biggest share of the world financial capital—42.5%, the second most important segment is debt securities—32.5%, and stocks—25%. It is important to remember that financial capital calculated the way used in Table 2 does

¹ Bogle (2008).

Table 3 Main segments of the world financial capital in 2020

Country/group of countries	Size of markets, \$ trillion				Share in global assets, %
	Stock market capitalisation ^a	Debt securities	Bank assets ^b	Equities, debt securities and bank assets	
World	105.82	138.04	180.38	424.24	100
USA	40.72	46.40	27.71	114.83	27.07
EU 27	11.15	24.79	41.16	77.10	18.17
China	12.21	18.56	41.6	72.37	17.06
Japan	6.72	14.67	21.31	42.70	10.07
Other countries	35.02	33.62	48.6	117.24	27.64

Sources World Federation of Exchanges. Statistics Portal, <https://statistics.world-exchanges.org>; Bank for International Settlements. Debt Securities Statistics, https://www.bis.org/statistics/secstats.htm?m=6_33_615; Financial Stability Board. Global Monitoring Report on Non-Bank Financial Intermediation 2021, <https://www.fsb.org/2021/12/global-monitoring-report-on-non-bank-financial-intermediation-2021>

^aMarket capitalisation of listed domestic companies

^bExcluding assets of central banks

not include some types of financial assets (mainly non-tradable). For instance, in the United States financial capital as a sum of all financial assets of all US institutional sectors was \$307.16 trln in 2021.

There is a whole range of reasons why developed countries have managed to accumulate significant financial assets. First, they should include long historical periods of capital accumulation, as well as relative economic, political, and social stability, creating favourable conditions for financial investments. Along with this, the formation of financial capital in developed countries is facilitated by the high income of the population (this allows them to invest savings in financial instruments), the developed financial markets (which provide a variety of opportunities for residents and non-residents to place funds), and the recognised international status of currencies of developed countries (they are widely used in the rest of the world by private and public investors).

It is important to emphasise that the possession of huge financial capital provides developed countries with significant economic and political preferences, creating the basis for their dominance in the global financial system and allowing them to influence global political processes with the help of financial levers, for example, financial sanctions.

One cannot but have noticed a significant trend in recent years: the rapid increase in China's financial potential, which has become a consequence of the country's overall economic recovery. In a relatively short period, China has managed to build a powerful national financial system, the core of which is the banking sector. From 2005 to 2020, the assets of China's financial institutions grew 9.2 times and today it is second only to the United States in terms of its size.

Other developing countries, due to various factors, have not been able to achieve similar successes and accumulate large financial capital. For example, in Brazil, this was prevented by too low a savings rate, which averaged 16.6% per year in 2001–2020; in India—low incomes of the population; and in Russia—a strong outflow of capital abroad. As a result, the share of developing countries in the financial assets of the world remains extremely low: excluding China, it is at about 15%.

3.1 Financial Depth

The concept of the “financial depth” of the economy was proposed in the late 1980s in the materials of the World Bank to assess the degree of financial resources of the national economy and its impact on economic growth. Financial depth is a relative value that allows one to correlate the scale of a country’s financial system with the size of its economy.

Financial depth is measured using a variety of coefficients. They can be divided into two groups. The first group of coefficients is calculated by correlating the performance indicators or the size of assets of various types of financial institutions with the size of the country’s GDP. Examples are the coefficients of domestic credit to the private sector (% of GDP), financial institutions assets to GDP, central bank assets to GDP, and broad money to GDP. The second group of indicators is defined as the ratio of indicators of the capacity of financial market segments to GDP, for example, stock market capitalisation to GDP, and public debt securities to GDP (Figs. 1 and 2).

Composite indices of financial depth can be calculated based on several indicators. For example, the IMF publishes the Financial Institutions Depth Index and the Financial Markets Depth Index. The first is determined based on the coefficients of private sector credit to GDP, pension fund assets to GDP, mutual fund assets to GDP,

Fig. 1 Domestic credit to private sector, % of GDP (Source The World Bank Open Data <https://data.worldbank.org/indicator/FS.AST.PRVT.GD.ZS?view=chart>)

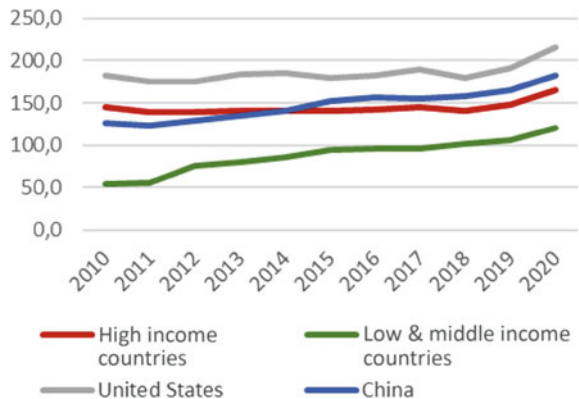


Fig. 2 Stock market capitalisation to GDP, % (Source The World Bank Open Data <https://data.worldbank.org/indicator/CM.MKT.LCAP.GD.ZS?view=chart>)

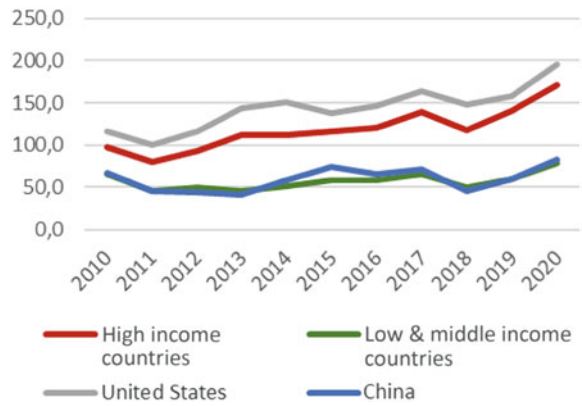
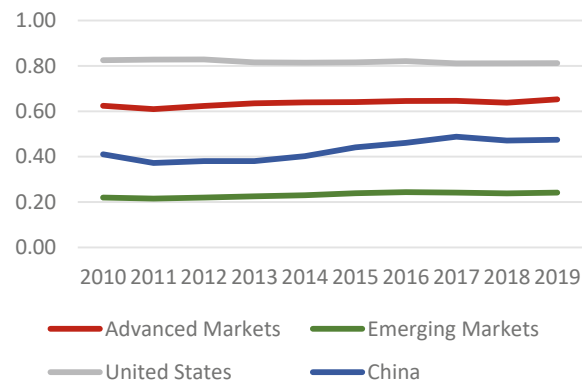


Fig. 3 Financial Institutions Depth Index (Source IMF Financial Development Index Database, <https://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B>)

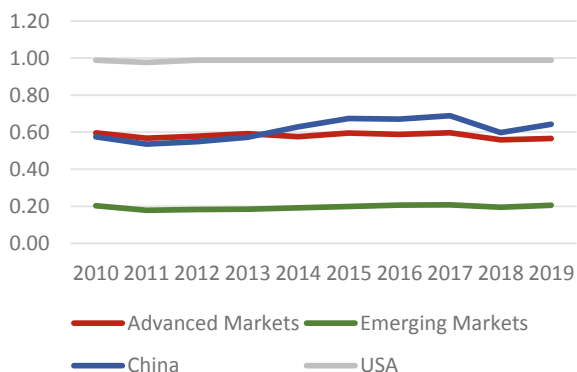


insurance premiums to GDP, and the second—the coefficients of stock market capitalisation to GDP, total debt securities of financial corporations to GDP, total debt securities of non-financial corporations to GDP and some other similar indicators.

In terms of financial depth, developed countries are significantly ahead of developing economies. The exception is China, which has a capacious financial system and, thanks to this, has financial depth coefficients comparable to developed countries. The maximum value of these indicators is noted in small countries where large international financial centres are located, for example, in Singapore, Luxembourg and Switzerland, as well as in offshore financial centres (Bahamas, Cyprus, etc.) (Figs. 3 and 4).

Numerous studies on the examples of dozens of countries have proven that there is a direct causal relationship between the financial depth of the economy and its growth rate. As a rule, the developed financial institutions and markets that supply the national economy with a sufficient amount of financial resources stimulate investment and innovation processes, and final consumption, and as a result, provide higher and more stable GDP growth in the long term. This is evidenced by the example of

Fig. 4 Financial Markets Depth Index (Source IMF Financial Development Index Database <https://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B>)



China, Singapore, the Republic of Korea and some other countries that have achieved significant economic success, largely due to the strategy of accelerating the financial depth of the economy.

At the same time, an increase in the capacity of financial markets gives a positive effect only up to a certain limit. As the experience of recent decades shows, an overt financial system, on the contrary, can become a risk factor for the economy's sustainable development. An excess of resources can provoke the formation of financial bubbles, increase the volatility of financial markets and increase their vulnerability to various kinds of shocks. These factors can serve as prerequisites for the emergence of financial crises. In this regard, the priority tasks of the financial authorities are to prevent excessive expansion of the financial system and control its stability.

A part (about 1%) of the world's financial capital is accounted for by international organisations, mainly the IMF, the Bank for International Settlements, the World Bank Group and regional development banks (for example, the European Bank for Reconstruction and Development, the Asian Development Bank, the Inter-American Development Bank). They have resources inferior to the assets of the largest commercial banks. For example, in 2021, the assets of two leading international financial institutions—the IMF and the IBRD—amounted to \$730 and \$314 billion, respectively.

4 National Financial Systems

IMF defines a national financial system as “institutional units and markets that interact, typically in a complex manner, to mobilise funds for investment, and provide facilities, including payment systems, for the financing of commercial activity”.²

Financial institutions are still considered to be the main providers of the financial capital of a country exactly because it remains one of their main functions, though

² IMF (2004) Compilation Guide on Financial Soundness Indicators, IMF, Washington DC, para. 2.2.

as we have previously seen, non-financial corporations possess and invest the ever-growing amount of financial assets worldwide (Table 2). Financial intermediation of financial institutions involves incurring liabilities on their account to acquire financial assets by engaging in financial transactions on the market. Some characteristics of financial intermediation include (a) incurrence of liabilities to raise funds for lending; (b) transformation of financial instruments for maturity, interest rate, the currency of denomination, etc.; and (c) acquisition of credit and financial risks. Other typical financial services include making payments, providing advice, insurance and pension products.

According to Financial Stability Board estimates, in 2020 the total size of assets of financial institutions reached \$469 trillion, an increase of 3.8 times compared to 2002 (Table 4). If we exclude central bank funds (\$41.9 trillion) from this indicator, the adjusted estimate will be close to the value of global financial assets (Table 3).

Table 4 Assets of financial institutions in 2020

	Assets of financial institutions, \$ trillion					Asset to GDP, %
	Banks	Central banks	Non-bank financial institutions	State financial institutions	Total assets	
World	180.38	41.90	226.58	19.89	468.74	572.0
Developed economics	125.72	29.01	201.72	15.03	371.49	774.8
USA	27.71	7.66	77.55	10.16	123.08	587.8
Euro Area	41.16	13.09	56.85	–	111.11	794.9
Japan	21.31	7.12	13.12	3.34	44.89	870.9
United Kingdom	17.19	1.23	17.98	–	36.39	1262.5
Canada	4.73	0.53	8.58	0.44	14.27	824.5
Switzerland	3.17	1.13	4.74		9.04	1127.0
Korea, Rep of	3.86	0.44	4.53	–	8.83	499.5
Developing economics	51.29	9.51	24.75	5.52	91.07	354.7
China	41.60	5.93	17.33	4.50	69.36	446.3
Brazil	1.92	0.77	2.48	0.16	5.33	371.8
India	2.42	0.73	1.61	0.13	4.89	182.5
Russia	1.60	0.67	0.83	0.08	3.19	222.5
Mexico	0.56	0.23	0.79	0.23	1.81	155.9
South Africa	0.45	0.06	0.66	0.22	1.40	412.5
Indonesia	0.66	0.22	0.16	0.06	1.10	100.4

Source FSB (2021). Global Monitoring Report on Non-Bank Financial Intermediation, <https://www.fsb.org/2021/12/global-monitoring-report-on-non-bank-financial-intermediation-2021>

Based on the relative importance of banks, non-bank financial institutions and capital markets as sources of financial capital, very often a distinction is made between a bank-based and a market-based (stock market-based) financial system. In a bank-based financial system, bank loans are a dominant form of financial assets, while in a market-based financial system funds are primarily distributed via tradable securities. Such economies as Germany, Japan and most European countries tend to have banking systems that account for a major part of financial assets. Market-based systems imply higher market capitalisation relative to the size of the economy and fewer assets owned by banks—the case of the United States.

There are several explanations for such a difference in terms of the financial structure in these countries. The first approach states that firms in countries with late industrialisation tended to have insufficient internal funds compared to the investment needed for catching-up development. Moreover, higher risks of entering a competitive environment hindered direct fund flows. Only banks were big enough to mobilise enough funds, monitor further lender operations and minimise risks. Thus, the economic rationale for financial intermediation results from transaction costs, risk sharing and asymmetric information (Mishkin, 2018).

The second explanation of the financial structure difference results from state regulation patterns applied. Financial systems emerged and developed in totally different circumstances following different regulatory frameworks. Historical data proves that state regulation has been a factor, in defining the financial system structure. Loose regulation (self-regulatory system) has promoted a market-based model, while tight regulation should have contributed to a bank-based model.

The United States provides an example of a self-regulatory system, especially at an early stage of its development when major regulatory authorities either did not exist or barely had any impact on financial institutions. Financial regulation started only in the 1930s as a response to the Great Depression of the 1930s. Since then a substantial legislative framework for financial intermediaries and markets has been developed that supported the evolution of the market-based financial system.

The UK is another example of the impact of state regulation on the financial system structure. Although the UK was one of the first to establish a central bank, self-regulation was still the major concept of the financial system, resulting, similar to the United States, in market-based model development.

By the late nineteenth century a fully operational central bank already existed in Germany, in contrast with the United States, and it had a specific legal status unlike in the UK. The regulatory authority of the Reichsbank (as it came to be called) was strengthened by the Imperial Bank Act of 1939, which granted it the state supervision authority over commercial banks and made it an interbank settlement centre.

That is why Germany has witnessed the strong evolution of banking throughout its history.

Studying the importance of the role of the financial system and its structure in prompting economic growth, economists tend to focus on whether bank-based or

market-based financial systems are more conducive to growth. Empirically, there has been little evidence in favour of either of the financial system structure models. No empirical support for either the market-based or bank-based views has been found—neither bank-based nor market-based financial systems are particularly effective at promoting growth. However, better-developed financial systems positively influence economic growth (Levine, 2002).

At the same time, there are findings, which are confirming that the process of financial sector liberalisation leads to worldwide financial restructuring, with financial systems losing their diversity and increasingly approximating the US model. This reshapes financial structures in a way that:

- slows world growth;
- desynchronises the economic cycle across countries;
- strengthens economies like the United States and United Kingdom with stock market-based financial systems;
- weakens successful late industrialisers like Japan and countries in East Asia, whose predominantly bank-based financial systems are substantially restructured;
- enhances volatility and encourages speculation, and fraudulent accounting and management practices (Chandrasekhar, 2008).

5 International Monetary and Financial System

An international monetary and financial system is a set of internationally agreed rules, conventions, traditional norms, instruments and organisations that facilitate international payments and financial relations among states that have different currencies. For a better understanding, one can look at it as an integration of two systems—the international monetary system and the international financial system. The first meets payment obligations across countries with different currencies. The second provides the exchange of assets among countries (Fosler, 2011).

As many elements of the international financial system were analysed in chapter “[Global Economic Governance and International Economic Organizations](#)”, this chapter concentrates on the international monetary system. Historically this system on the global scale was formed in the nineteenth century and since then passed through some periods:

- Gold Standard system (1878–1914)
- Between the World Wars’ system: 1919–1939
- Bretton Woods system: 1944–1973
- Floating Exchange Rates system (Jamaica system): 1973–present.

All these historical monetary systems (global monetary orders) tried to answer the same practical question: how national financial systems can integrate into international business, increasing their advantages and minimising disadvantages? The set of options included the choice of the exchange rate regime (fixed or floating), capital controls or their absence and either independence or the abandonment of the

national monetary policy. For the sake of stability and predictability, the increase of capital availability and preservation of national autonomy, the countries would tend to have fixed exchange rates, freedom of cross-border capital movements and an independent monetary policy. As it turned out, it is highly unlikely to have all of these three attributes at once. In reality, countries have to sacrifice one of them to be able to have the other two. Economists call this the impossible trinity or the Trilemma of International Finance.

Let's study the possible combinations of these goals and the logic behind them. If a country wants to have an independent monetary policy and freedom of cross-border capital movement, the exchange rate regime can only be floating, since some national monetary policy decisions may increase or decrease the attractiveness of the country as a place of international capital destination and changed capital flows, together with the necessity to exchange foreign currency into the local one, and vice versa, will sooner or later terminate the fixed exchange rate regime. If the goals are exchange rate stability and freedom of cross-border capital movements, then the country will have to sacrifice its national monetary policy, since it will become practically impossible to use it to fine-tune the economy. If the goals are monetary policy independence and exchange rate stability, then the country will have to impose capital controls to protect its fixed exchange rate from the influence of the supply and demand shifts for its currency.

How different global monetary orders addressed the Trilemma of International Finance can be seen in Table 5.

The gold standard prevailed informally from 1878 to 1914 but was never officially sanctioned by an international treaty. Rather, it was a natural outcome of the fact that by that time most countries had pegged their currencies to gold. They did so to support national currencies, to make them look as good as gold, which was anticipated by many as true real money of the world. Gold standard currencies held a fixed relationship with each other because they all held a fixed relationship to gold. The gold standard provided the world economy with a stable payment system, which fueled the first era of globalisation with increasingly large flows of goods, capital and people between countries. However, that system limited the monetary policy autonomy of the countries involved (they could not increase or decrease the money supply of the economy with ease) and, thus, made it more difficult to support economic growth. It was abolished in the years of WWI (Laurent, 2019).

Table 5 Global monetary orders and the Trilemma of International Finance

	Gold standard	Interwar years	Bretton woods	Floating exchange rates
Exchange rate stability	High degree	Yes	Yes	No
Freedom of financial flows	High degree	Limited	Limited	Yes
Monetary policy autonomy	Limited	Limited	Partial	Yes

In the years between WWI and WWII, the gold standard was revived briefly between 1925 and 1931, when major developed economies re-pegged their currencies to gold at par values that all too often overvalued their currencies.

The importance of the orderly functioning international finance system was seen by the desire of the countries to establish a new international financial system even before the end of WWII. The Bretton Woods Accord called for pegged or fixed exchange rates, with each national currency value defined in terms of gold, also known as par value. The US dollar was, in turn, the only currency convertible into gold at a fixed price of \$35 per ounce. In effect, by defining its currency in terms of gold, each country was also defining the value of its national currency in terms of the US dollar (Laurent, 2019).

A new era of floating exchange rates (for those countries which decided to use them) and abandonment of the fixed price of gold began in 1976 when a new international monetary system was established at the IMF conference in Jamaica. The new exchange rate regime allowed market forces to become the key determinant of currency values, with central banks taking a backseat. However, although the US dollar was no longer convertible into gold at a fixed price, it remained the anchor currency of the new international monetary order and continued to be the preferred medium of exchange, store of value, and numéraire or currency of denomination for international trade, financing and investment activities (Laurent, 2019; Ghosh, 2021).

Let's review some important trends and problems in the current stage of international monetary and financial systems development. Today, the main volumes of transactions on the world Forex market (foreign exchange market) are carried out in US dollars; besides, the dollar is widely used as the currency of reserve assets in most countries of the world by the residents of countries with economies in transition and by developing countries. This phenomenon is called dollarisation. At the same time, there is a widespread opinion among economists about the potential instability of the dollar due to the trade deficit and the US federal budget, as well as the growth of US government debt. In addition, there is a tendency to expand the use of the Euro in the world, and the idea of creating and implementing cryptocurrencies, including their use for international settlements, is also being discussed (e.g. Elson, 2021).

A cryptocurrency is a tradable digital asset, built on blockchain technology that only exists online. Some economists started to consider it a new form of money or at least a financial asset. Cryptocurrencies are created according to a special algorithm in decentralised privately owned systems. Each cryptocurrency system simply records the ownership of cryptocurrencies and the transfer of that ownership.

Cryptocurrencies have called into question the continued existence of national currencies. The arguments of the supporters of cryptocurrencies are as follows: national currencies are subject to inflation, and manipulation by monetary authorities, function mainly within individual countries and do not meet the needs of the emerging digital economy, since they cannot be used in so-called smart contracts

that allow robotising the process of financial management and making payments. According to crypto-activists, cryptocurrencies can solve many of these problems. Moreover, cryptocurrencies have a high level of anonymity. However, the development of cryptocurrencies has also shown a number of their weaknesses. The downside of the lack of regulation was numerous abuses with cryptocurrencies and their weak protection from fraudulent actions. Moreover, the high volatility of their exchange rates significantly complicates their use as a form of money, since they poorly perform the most important functions of money, such as a unit of account and a standard of deferred payment.

The noted problems led to the emergence of two equally important trends: improving the quality of existing private cryptocurrencies through the emergence of a special subspecies of cryptocurrencies, the so-called stablecoins, and the beginning of the development of digital currencies by central banks.

Stablecoins are cryptocurrencies that attempt to peg their market value to some external reference. Very often they are pegged to national currencies to maintain a stable price. In October 2020, FSB issued a document “Regulation, management and supervision of measures to prepare for the emergence of a “global stablecoin”, in which the stablecoin is considered a potential supranational currency (FSB, 2020). The term “central bank digital currency” has no single commonly agreed-upon definition. One of the good operational definitions of the CBDC can be that this currency is an electronic liability of a central bank that can be used to settle payments or as a store of value.

The instability of the dollar and the growing global importance of several other currencies give reason to talk about the emerging trend towards currency polycentrism. This trend is manifested in the desire of countries and their associations to expand the list of currencies used for international payments, i.e. the currencies that play the role of world money. One of the manifestations of polycentrism is the expansion of the Chinese yuan in international settlements: the share of the yuan in international settlements was already 2.2% in the first half of 2021.

An important challenge for the modern international monetary system is the volatility of cross-border capital flows, especially speculative ones (‘hot money’). As a result, this provokes instability of floating exchange rates of national currencies, which distorts economic decisions, in particular, when it comes to trade, investment, savings, employment, etc. Although floating rates usually return to the long-term average, they may deviate from equilibrium for a long time.

Another challenge is to single out competitive devaluation, which in practice most often looks like a creeping devaluation of the currencies of less developed countries. For example, the exchange rate of the yuan against the US dollar at the beginning of 2000 was 0.7278, at the beginning of 2000—already 4.4215, at the beginning of 2015—9.0617, at the beginning of 2022—11.6503. Although the People’s Bank of China claimed that the devaluation was part of reforms aimed at the transition to a market economy, the United States continued to claim that it was a means of increasing Chinese exports, as a result of which the United States had a huge trade deficit in trade with this country. As a result, China’s similar monetary policy has become one of the reasons for the trade war between the two countries.

6 Conclusions

1. Financial capital of the world is the sum of the financial assets of countries and international organisations. The UN System of National Accounts (SNA 2008) gives the following classification of main financial assets: currency and deposits; debt securities; loans; equity and investment fund shares; insurance, pension and standardised guarantee schemes; financial derivatives and employee stock options; other accounts receivable/payable; monetary gold and special drawing rights (SDR, reserve assets created by IMF for its member countries).
2. For quite a long time, financial capital had been viewed as performing a supportive function in the economy helping the real sector of the economy operate well. But towards the end of the twentieth century, dramatic changes in the development of finance occurred. Financial intermediaries and technologies have gained unprecedented influence over our daily lives. As a result, many experts started to use the term “financialisation”, which means the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies.
3. The composition and distribution of financial capital (as the sum of its most important segments) in the world looks like the domination of the leading developed economies, although the share of China is already substantial. Huge financial capital provides developed countries with significant economic and political preferences, creating the basis for their dominance in the global financial system and allowing them to influence global political processes with the help of financial levers, for example, financial sanctions.
4. In terms of financial depth, developed countries are also significantly ahead of developing economies. The exception is again China, which has a capacious financial system and, thanks to this, has financial depth coefficients comparable to developed countries. The maximum value of these indicators is noted in small states where large international financial centres are located, as well as in offshore financial centres. Numerous studies on the examples of dozens of countries have proven that there is a direct causal relationship between the financial depth of the economy and its growth rate.
5. Based on the relative importance of banks, non-bank financial institutions and capital markets as sources of financial capital, very often a distinction is made between a bank-based and a market-based (stock market-based) financial system. In a bank-based financial system, bank loans are a dominant form of financial assets, while in a market-based financial system funds are primarily distributed via tradable securities. Such economies as Germany, Japan and most European countries tend to have banking systems that account for a major part of financial assets. Market-based systems imply higher market capitalisation relative to the size of the economy and fewer assets owned by banks—the case of the United States.
6. An international monetary and financial system is a set of internationally agreed rules, conventions, traditional norms, instruments and organisations that facilitate

international payments and financial relations among states that have different currencies. For better understanding, one can look at it as an integration of two systems—the international monetary system and the international financial system. The first meets payment obligations across countries with different currencies. The second provides the exchange of assets among countries.

7. A new era of floating exchange rates (for those countries which decide to use them) and abandonment of the fixed price of gold began in 1976, when a new international monetary system was established at an IMF conference in Jamaica. The new exchange rate regime allowed market forces to become the key determinant of currency values, with central banks taking a backseat. However, although the US dollar was no longer convertible into gold at a fixed price, it remained the anchor currency of the new international monetary order and continued to be the preferred medium of exchange, store of value, and numéraire or currency of denomination for international trade, financing and investment activities.

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Resources of World Economy: Natural Resources



Vladimir Gorbanyov and Irina Mitrofanova

Abstract The chapter discusses fuel and ore minerals resources. Special attention is paid to the current situation with the deposits and production of oil, natural gas and coal. Uranium, iron, aluminium and other ores are analysed as well. Land, water, forest, agroclimatic and recreational resources are also considered.

1 Introduction

Natural resources are all those components of the natural environment that a mankind uses in the production process to meet its material and cultural needs. Among natural resources, we have to distinguish mineral (minerals), land, water, biological (fauna and flora), agroclimatic, recreational resources.

2 Mineral Resources

An important role in the world economy is played by mineral resources, i.e., mineral substances located in the earth's crust and necessary for man to meet his needs. Mineral resources belong to the category of exhaustible and non-renewable substances. According to their geological origins and purpose, mineral raw materials can be divided into fuel, ore, chemical, construction and technology.

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2.1 Fuel Mineral Resources

Fuel mineral raw materials are of sedimentary origin, therefore, they are placed unevenly and confined to the sedimentary covers of platform structures. Fuel resources primarily include the “big three”—oil, natural gas and coal—producing 4/5 of the world’s primary energy.

The world’s geological reserves of mineral fuel are estimated at about 13–14 trillion tons, i.e., mankind has enough mineral fuel for about 1000 years. Moreover, coal accounts for 60% of reserves (in terms of calorific value), while hydrocarbon fuel accounts for 27%. At the same time, the structure of global consumption of primary energy sources for 2021 was different: coal accounted for about 27%, oil 31%, natural gas—24%, nuclear fuel—4%, hydropower—7%, renewable energy sources—7% (see Table 8).

As the data in Table 1 show, the first place in the world is occupied by the United States in terms of proved coal reserves, Venezuela in terms of oil reserves and Russia in terms of natural gas reserves.

The data in Table 2 show that the growth of production and consumption of mineral fuel in the world is uneven both by fuel types and by countries.

The geological coal reserves (in about 80 countries) are estimated at 1,074 billion tons today, and 70% of them fall on the most calorific black coal. The supply of coal on the planet is enough for 400–500 years. Economically developed countries (primarily the USA, Australia and Germany) are the richest in coal, and the less-developed ones include Russia, China, India, Indonesia and Ukraine. The United States, Russia, China, Australia and India account for about 76% of the world’s proven coal reserves, and there are even more geological reserves. If we evaluate the reserves of high-quality coking coal (fuel for ferrous metallurgy), then Australia, Germany, China and the USA come out on top.

Table 1 The first 8 countries by proved reserves of fuel resources in 2020

Country	Coal, billion tons	Country	Oil, billion barrels	Country	Natural gas, trillion m ³
USA	249	Venezuela	304	Russia	37
Russia	162	S. Arabia	298	Iran	32
Australia	150	Canada	168	Qatar	25
China	143	Iran	156	Turkmenistan	14
India	111	Iraq	145	USA	13
Germany	36	Russia	108	China	8
Indonesia	35	Kuwait	101	Venezuela	6
Ukraine	34	UAE	98	S. Arabia	6

Source (BP, 2021)

Table 2 Average annual growth in production and consumption of fuel resources for the period from 2009 to 2019, %

Countries	Oil		Gas		Coal	
	Production	Consumption	Production	Consumption	Production	Consumption
World	1.5	1.5	3.1	2.9	1.6	0.9
Member countries OECD	4.2	0.2	3.2	2.1	-1.7	-2.9
Including EU	-4.4	-0.7	-6.3	-0.1	-3.6	-3.0
Other countries	0.6	3.0	3.0	3.6	2.8	2.2

Source (BP, 2021)

About 3 billion tons of coal and about 1 billion tons of brown coal are produced in the world. Since the second half of the twentieth century, the coal industry of many developed countries has been hit by a structural crisis caused, on the one hand, by sharp competition from the oil and gas industry, and, on the other hand, by unfavourable and environmental conditions of production (in particular, production of coal with increased sulphur content has decreased; coal burning is accompanied by large amounts of greenhouse gas emissions; the resulting landfills contribute to degradation of the terrain). As a result, many developed economies have become more focused on imported coal from less-developed economies—South Africa, Indonesia, Colombia, Russia, etc.; moreover, this coal is also cheaper. That is why coal mining in France, Great Britain, Belgium has completely stopped, the mines of the Ruhr and Saar basins in Germany have closed, and the Appalachian Basin in the United States is experiencing a certain crisis.

The structural crisis in the coal industry has not affected developing countries, where the industry is booming and at the same time the cost of labour is low: here, on the contrary, the coal industry has continuously experienced a rapid rise (World Mining Data, 2020; World Mineral Production, 2021). It is thanks to these countries that, since the 2000s, the annual rates of coal consumption in the world have begun to grow somewhat, despite the reduction in consumption in developed economies.

China holds the record for coal consumption and production (3.9 billion tons in 2020): in recent years, its share in global consumption has been more than 50%. The United States also remained one of the largest coal producers in 2020 (485 million tons, although production volumes are falling: in 2007 the USA produced twice as much coal), followed by India (756 million tons), Indonesia (562 million tons), Australia (477 million tons), Russia (434 million tons in 2021), South Africa, etc.

Coal production in Indonesia and Colombia is also growing very rapidly. The world's largest coal exporters in recent years included Australia (1st in the world),

Indonesia, Russia (exports more than 50% of the coal produced), the USA, Colombia and South Africa.

The proven oil reserves are estimated at 236 billion tons and account for about 50% of the total geological ones (500 billion tons). The proven oil reserves are enough for 59 years. At the same time, it should be noted that since the beginning of the 1990s, the availability of oil and gas has increased by 60–65%, and the volume of production has increased by only 25%, which indicates the advanced development of geological exploration, as a result of which, part of the geological reserves passes into the category of proven. However, exploration, as well as production, are increasingly moving to areas with extreme natural conditions, where the cost of exploration and extraction of resources is much higher.

The vast majority of the proved oil reserves are located in Asia (75%), while about 65% of the world's oil reserves are concentrated in the Persian Gulf basin. For a long time, Saudi Arabia was the world leader in oil reserves, but then Venezuela slightly bypassed it. Next are Canada (largely due to the unique "oil sands" in the province of Alberta), Iran and Iraq. More than 30% of oil reserves are located in the offshore zones of the seas and oceans, and, therefore, in a number of countries, such as, for example, Great Britain, Norway and Gabon, oil is produced from the bottom of the sea only. According to forecasts, huge reserves of hydrocarbon raw materials are concentrated on the shelves of the seas of the Arctic and the Far East. The share of the Arctic in world oil reserves is 13% (in natural gas is 30%).

Until 1978, global oil production grew rapidly, but after the energy crisis, the cost of oil rose sharply, the geography of oil production changed, and it began to move to extreme, hard-to-reach places. As a result, oil production declined between 1979 and 1985. And it was only after 1985 that production began to grow, although after 2005 the growth rate of oil production was slow, which is primarily due to the transition of developed economies to a less energy-intensive path of development. The stabilisation of oil production is also explained by the policy of OPEC member countries aimed at curbing production growth rates in order to keep oil prices from falling. However, if there was a stabilisation or even decline in oil consumption (in the EU –0.7%) in the OECD countries during the same period, then in developing countries, on the contrary, the growth in oil consumption was 3%, including in China—14%, in India—5%.

From 1993 to 2010, Saudi Arabia was ahead of Russia in terms of oil production and the United States remained in 3rd place. However, since 2011, the United States has begun to sharply increase production due to shale oil and reached 1st place in oil production (713 million tons in 2020).

The role of OPEC member countries should be particularly noted: these countries concentrate 70% of oil reserves, but their share in production in 2020 decreased to 35%. The main world oil exporters are OPEC member countries, primarily Saudi Arabia, Russia, Norway and Mexico.

The proved reserves of natural gas are growing at a very high rate and a significant part of the geological reserves (about 400 trillion m³ in total) are annually transferred to the category of proved. The latter are estimated at 188 trillion m³, and they are enough for 49 years.

The USA occupies 1st place in gas production in the world—915 billion m³ (in 2020). Russia is 2nd place in gas production (639 billion m³ in 2020). Qatar, Norway, Canada, Saudi Arabia, China, Iran and other countries come next, with 62% of gas produced in non-OECD countries. The main world exporters of natural gas are Russia, Norway, Qatar, Canada, the USA and Australia.

Over the past 10 years, global gas consumption has grown at a faster rate than coal and oil—by 2.9% per year. However, in OECD countries, annual gas consumption grew slowly—by 2.1%, while in EU countries, it generally fell (−0.1%). At the same time, annual gas consumption grew by 3.6% in developing economies, especially in Asia, primarily in China.

2.2 *Ore and Other Mineral Resources*

Ore mineral raw materials, unlike sedimentary fuel, have, with rare exceptions, magmatic or metamorphic origin, therefore, they are confined to folded tectonic structures, shields and fractures of the Earth's crust.

Uranium ores are often referred to as fuel mineral resources since the main purpose of uranium is fuel for nuclear reactors installed at power plants. The deposits that contain at least 0.1% of the useful component are considered advantageous. Estimates of the total geological reserves of uranium ores vary greatly in different estimates and in reports of different organisations, ranging from 5 to 20 million tons, although the proved reserves are determined quite accurately—7.6 million tons—and are concentrated in more than 40 countries. The first place belongs entirely to Australia—31%, followed by Kazakhstan—12%, Canada and Russia—9% each, South Africa—6%, Niger and Namibia—5% each, etc. At the same time, ore mining and concentrate production have slightly different geography.

Uranium ore production in 2020 was carried out in 20 countries: Kazakhstan (41% of world production), Australia (13%), Namibia (11%), Canada (8%), Uzbekistan (7%), Niger (6%), Russia (6%), China, Ukraine, USA.

At the same time, the volumes of uranium ore extraction are characterised by significant fluctuations: the maximum volumes were reached in the late 70 s, during the energy crisis. Then there was a drop in production volumes, especially after the Chernobyl accident. However, later, only in four years (from 2005 to 2009), the volume of uranium production increased by more than 1.5 times, especially in Kazakhstan. The maximum volume of uranium production (63,207 tons) were reached in 2016, and then world uranium production decreased again. This was due to persistently low spot prices on the uranium market over the past seven years.

Iron ores are widely distributed in the earth's crust, having both magmatic and sedimentary origins. Their general geological reserves are estimated at 600 billion tons, of which the proved reserves are 170 billion tons. The iron content in them varies widely, from 20 to 68%. According to the proven reserves of iron ores in terms of iron content, Australia is the leader, with 28% of world reserves, then comes Brazil (18%), Russia (17%), followed by China, India, Canada, Ukraine, Sweden and Iran. However, the iron content in the ores does not correspond to the specified ranking. The richest ores are provided by Liberia, India, Australia, Brazil, Venezuela—ores in these countries contain more than 60% of the useful component.

The largest iron ore producers in 2020 in terms of iron content were Australia (37% of world production), Brazil (17%), China (14%), India (9%) and Russia (4%). According to other sources, China occupies the top line in this list.

In recent years, the primacy in the extraction of iron ores has been shifting from developed economies (in particular, Western Europe) to developing. Iron ore mining in France, Great Britain, Norway, Spain, Finland and Austria has practically stopped.

The most common metal in the earth's crust is aluminium and it is concentrated in sedimentary rocks. The geological reserves of bauxite are estimated at 65–70 billion tons, the proved reserves are about 30 billion tons. Ores of light non-ferrous metals, including bauxite, have a high content of a useful component—in bauxite its content is 30–60%. Guinea (25%), Australia (17%), Vietnam (12%), Brazil, Jamaica, Indonesia have the largest reserves of bauxite. The largest bauxite producer in 2020 were Australia (30%), Guinea (22%), China (16%), Brazil (9%), India, Vietnam and Jamaica—about 30 countries in total, and the vast majority of bauxite is mined in developing countries. Some developed countries, such as the USA, France, Greece and Hungary, have either stopped mining bauxite altogether, or have significantly reduced its extraction. Only Australia continued to increase production volumes.

Ores of heavy non-ferrous metals contain significantly less useful components. For example, the copper content in copper ores is less than 5%. The richest country in terms of proven reserves of copper ore is Chile (23%), followed by Australia and Peru (10% each), and Russia is in fourth place (7%). The largest producers of copper ores (2020) included Chile (28%), Peru (12%), China (8%), USA, DR Congo, Australia and Russia (4%)—a total of about 50 countries (United Nations Resource Management System, 2021).

There is an even greater concentration of countries in the reserves and production of other non-ferrous and especially rare earth metals. For example, 29% of manganese and 39% of chromium production is concentrated in South Africa, 30% of nickel production is in Indonesia, 70% of cobalt production is in Congo, and 27% of tin, 33% of zinc, 47% of lead and 82% of tungsten are produced in China.

Analysing the composition of the listed countries, we come to the conclusion that there are about 10 countries in which mining industry is especially important for the global economy. These are China, Australia, South Africa, Kazakhstan, India, Canada, Peru, Russia, the USA and Brazil.

Chemical raw materials should be singled out of non-iron mineral resources: phosphorites, apatites, salts, and sulphur. Phosphorites are mined in almost 30 countries, among which China (46%), Morocco, the USA, Russia, Jordan and Saudi Arabia are the leaders. The sodium salt is actively extracted in China (20%), the USA, India, Germany; potassium salt in Canada, Belarus, Germany, Russia, Israel. The leaders in sulphur production are China and the United States.

3 Land, Water, Forest and Recreation Resources

3.1 Land Resources

Land resources are the land fund of the world. Part of it has no soil cover (for example, glaciers) and therefore cannot be a base for producing agricultural raw materials and food. The total land fund of the world (land area minus the glaciers of the Arctic and Antarctic) is 13.2 billion hectares, or more than 26% of the total area of our planet.

The structure of the land fund does not look the best from the point of view of agricultural development. For example, cultivated land (arable land, orchards, plantations) accounts for 11%, meadows and pastures for another 26%. The rest is occupied by forests and shrubs (32%), land under settlements, industrial and transport enterprises (3%) and unproductive lands (swamps, deserts and territories with extreme climatic isotherms, 28%).

This means that agricultural land (arable land, orchards, plantations, meadows and pastures) account for only 36% of the land fund (4.8 billion hectares) and they are increasing, although slowly. The largest agricultural lands belong to China, Australia, the USA, Canada and Russia. If we take the structure of agricultural land, the area of arable land is 28% (1.3 billion hectares), pastures are 70% (3.3 billion hectares), and perennial plantations are 2%.

As the population grows, the availability of agricultural land per capita decreases: if in 1980 there were 0.3 hectares of arable land per capita, then in 2019 there were 0.2 hectares. Nowadays there are 0.60 hectares of arable land per capita in North America, 0.25 hectares in Western Europe, 0.13 hectares in Asia (without Russia), 0.35 hectares in South America, and 0.22 hectares in Africa. Although according to the Food and Agriculture Organisation, the total area of potentially suitable land for agriculture in

the world is about 3.2 billion hectares, one cannot include this reserve in agricultural production without a huge investment of labour and financial resources.

In developed economies, private land ownership prevails, and most of the land fund is in the hands of medium and large landowners (farmers and companies). Developing economies are characterised by a variety of forms of land relations, including archaic forms. In general, the private form of land ownership dominates in the world, but a significant proportion of farms in the world (27%) do not have their own land and have to rent it.

3.2 *Water Resources*

Water resources are reserves of fresh water suitable for all types of use. Although, fresh (sweet) water, which humanity needs, makes up 2.5% of the total volume of the hydrosphere (the water shell of the earth, which is a combination of seas, oceans, surface waters of land, groundwater, ice, snow of Antarctica and the Arctic, atmospheric waters), or about 35 million m³, thus exceeds the current needs of humanity by more than 10 thousand times.

But the vast majority of fresh water (69%) is located in polar and mountain ice and permafrost, which are practically not used. Therefore, the main source of fresh water is river water. The actual volume of available fresh water is 42 thousand km³. This is our “water ration”, although technologically only half of this amount can be used.

The volume of global water consumption is 25% of the planet’s water resources. It can be stated that humanity as a whole does not lack fresh water. Although the “water ration” of humanity remains unchanged, global water consumption has increased by 10% over the past decade. In addition, according to UN data for 2018, more than 2.8 billion people are experiencing a shortage of high-quality drinking water, as they either live in countries with a shortage of fresh water or near water sources contaminated with waste.

The distribution of fresh water around the globe is extremely uneven. More than 1.2 billion people suffer from a shortage of water. In Europe and Asia, where 70% of the world’s population lives, only 39% of river waters are located. Many countries are on the verge of a water crisis, for example, the countries in Africa and the Middle East, some areas of China and India, small island states. At the same time, there are countries with high availability of freshwater resources (per capita in descending order). They include Canada, Norway, New Zealand, Chile, Bolivia, Brazil and Russia.

Agriculture remains the main consumer of water (70%), followed by industry (20%), while only 10% of water is consumed in everyday life. Water resources also

play an important role in the development of global energy. The global hydropower potential is estimated at 10 trillion kWh. In total, six countries of the world have about half of this potential. They include Russia, China, the USA, DRC, Canada and Brazil.

3.3 Forest Resources

Forest resources are estimated by the size of the forest area, wood reserves, forest cover. The total forest area in the world is 4.1 billion hectares, i.e., 31% of the earth's land (FAO, 2020). However, only in the last 200 years, the forest area has halved and continues to decline at a rate of 25 million hectares, or 0.6% per year, with the most intensively declining tropical forests of the southern forest belt. Latin America and Asia have already lost 40% of evergreen rainforests, and Africa has lost 5%. At the same time, despite the intensive exploitation of the forests of the northern belt in the USA, Canada and the Scandinavian countries, the total area of forests there has not decreased in recent decades thanks to reforestation and afforestation.

The forest area per capita is 0.52 hectares and this figure is also constantly decreasing, mainly due to anthropogenic deforestation. The highest availability of forest (as well as water) resources can be seen in equatorial countries and northern countries: 36 hectares per capita in Suriname, 11 hectares in Venezuela, 2.9 hectares in Brazil, 6.7 hectares in Australia, 5.6 hectares in Russia, 5 hectares in Finland, 16 hectares in Canada. Vice versa, forest availability in tropical and southern countries is much lower and amounts to less than 0.1 hectares per person.

The reserves of standing wood in the world amount to over 500 billion m³. The annual growth of wood, which determines the economic exploitation of forests without undermining their reproduction, is estimated to be from 7 to 10 billion m³. In the past decade, the volume of wood harvesting was approaching 4 billion m³ per year (including illegal logging), i.e., the volume of harvesting remained below the annual growth of wood, which is partly due to the fact that only 30% of forests are used for production.

The indicator of the forest cover of the territory is the ratio of the area of forests to the total territory of the country. The most forested countries (forests make up more than 90% of their area) are French Guiana, Suriname and Micronesia.

3.4 *Recreational Resources*

These resources include natural components and anthropogenic objects with uniqueness, historical, artistic and aesthetic value, healing and health-improving significance, intended for organising various types of recreation, tourism and treatment. They are divided into natural and anthropogenic recreational resources. Geological and geomorphological, hydrological, climatic, energy, biological, landscape resources are distinguished among natural recreational resources.

The former include the East African Rift, Mount Vesuvius, the Himalayas, the Tibet Plateau, the Great Barrier Reef off the northeast coast of Australia, the fjords of Norway, the Grand Canyon in the USA and many others.

Hydrological recreational resources include all types of surface and underground waters with recreational properties. Examples may include the Iguazu Falls in Argentina and Brazil, Niagara Falls in the United States and Canada, the Dead Sea in Israel and Jordan, the cascade of hot mountain lakes Pamuk-Kale in Turkey, glaciers in the Pamirs, geyser valleys in Kamchatka, Chile, Iceland, Lake Baikal.

Climatic recreational resources include all resorts in the world (seaside, mountain, steppe, forest, desert, cave) and even some places with extreme climate and weather properties (the coldest place on Earth, the windiest, wettest, hottest).

Biological and landscape recreational resources combine elements of living and inanimate nature: soil, floral and faunal resources of scientific, cognitive, biomedical and aesthetic value. The unique biological resources and landscapes include the island of Madagascar with its ecosystem numbering 10,000 species of endemic plants and animals; the Amazon basin; the Ngorongoro caldera and the Serengeti National Park in Tanzania; the Altai Mountains; the regur of the Deccan Plateau and the oldest Corbett National Park in India; Yosemite and Yellowstone National Parks in the United States; Arctic polar bears and Antarctic penguins; kangaroos, koalas, dingo dog in Australia; seals of the Commander Islands; Galápagos Islands (Ecuador); nature reserves in Southern and Equatorial Africa.

Recreational resources of anthropogenic origin can be divided into material (embodied in architectural monuments, museums, palace and park ensembles, etc.) and spiritual, reflected in science, education, literature, folk life, etc. These are numerous museums of world importance, historical and cultural monuments. Of particular note are the World Heritage sites of mankind. In 2016, UNESCO adopted the Convention on the World Natural and Cultural Heritage and began to compile a list of World Heritage sites. Today, there are 1,154 heritage sites in the list compiled on its basis, including 897 objects of cultural heritage, 218 of natural heritage and 39 of mixed heritage.

4 Conclusions

1. Natural resources are all those components of the natural environment that a world community uses in the production process to meet its material and cultural needs.
2. Among the mineral resources, fuel resources play the most important role. The structure of world consumption of primary energy sources is as follows: coal accounts for about 27%, oil about 31%, gas 25%, nuclear fuel 4%, hydropower 7%, renewable energy sources 6%. Our planet has enough coal for at maximum 400–500 years. There is enough oil for 59 years and natural gas for about 49 years.
3. The United States occupies first place in the world in terms of proved coal reserves, Venezuela in terms of oil reserves and Russia in terms of natural gas reserves.
4. The metals contained in the ores are the main raw materials for ferrous and non-ferrous metallurgy. There are about ten countries where the mining industry plays a primary role in the global economy. These are China, Australia, South Africa, Kazakhstan, India, Canada, Peru, Russia, USA and Brazil.
5. Agricultural land (arable land, orchards, plantations, meadows and pastures) makes up only 36% of the world's land fund (4.8 billion hectares), and it has increased in recent years, although slowly. The largest agricultural lands are in China, Australia, the USA, Canada and Russia. If we analyse the structure of agricultural land, arable land comprises 28%, pastures 70% and perennial plantations 2%.
6. The distribution of fresh water around the globe is extremely uneven. In Europe and Asia, where 70% of the world's population lives, only 39% of river waters are concentrated. Many countries are on the verge of a crisis in terms of water availability, and at the same time, countries with a high degree of security are singled out.
7. The global average availability of forest resources is 0.52 hectares per capita and this figure is also constantly decreasing, mainly due to anthropogenic deforestation. The highest availability of forest resources (as well as water) is in the equatorial countries and the northern countries of the temperate zone.
8. Recreational resources include the natural components and anthropogenic objects that have uniqueness, historical, artistic and aesthetic value, healing and health-improving significance, intended for organising various types of recreation, tourism and treatment.

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Global Challenges: Environment



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Abstract Presently, environmental problems have become more of a global nature and the associated risks are defined as a major threat to mankind and are already an important factor adding up to global instability. World Community responds to the challenges by altering international, regional, and state policies. A major global economic trend is the shift of the world economy and international business to sustainable development and a green economy path. Business perception of sustainable development has significantly evolved over the recent decades and ESG factors have become indispensable to business strategies.

1 Introduction

Now environmental problems have become more of a global nature and the associated risks are defined as a major threat to mankind and are already an important factor adding up to global instability. The negative trends associated with economic development and globalization have resulted in efforts to switch from the growth paradigm to that of green economic development, to design new concepts of global development including a category of the environment in economic theories. Ecological components have become an integral part of new theories and strategies—sustainable development, green economy, circular economy, and others, suggesting that economic and social development should maintain the system of a self-supporting environment. providing for economic and social development while maintaining the system.

The environmental component is gaining an increasingly important role in the global economy, trade and investments, labor migration, R&D, scientific cooperation, and information exchange. The transformation of the world economy is largely fueled by the deep penetration of ESG approaches into business activities. Business perception of sustainable development has significantly evolved over the recent decades and ESG factors have become indispensable to business strategies. At the

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same time, despite significant progress, claims of the predominance of progressive trends in the practical activities of companies seem premature, although the situation is changing dynamically.

1.1 Theoretical Aspects of Environment, Sustainable Development, and Rational Nature Management

In the broad sense of the word the environment is around us, we live there, we interact with it on a daily basis, and it has a direct impact on our development and our future.

The concept of the environment emerged in biology in the mid-1800s. In 1866, E. Haeckel (1834–1919), a German zoologist, was the first to define ecology as the biological science exploring the relationship between organisms and the environment. At the same time, he perceived the environment as a combination of living and inanimate elements of nature. An invaluable contribution to the theory of interaction between a human being and the environment was made by the American geographer, who wrote that nature takes revenge on man for ill-considered actions. L. Mechnikov, the Swiss geographer and sociologist of Russian origin, claimed that the mechanism of interaction with the environment was viewed as the adaptation of society to this environment.

In 1972, in the Club of Rome, an international think tank, the American spouses D. and D. Meadows together with the Norwegian J. Randers created a model of the environment in its dynamic development and presented their report “The Limits to Growth”. According to the report in view of excessive anthropogenic pressure, the biosphere may go into a state incompatible with the survival of civilization. Together with further reports of the Club of Rome, it laid the foundation for the most modern approaches to the interpretation of the sustainable development concept. In 1987 the International Commission on Environment and Development released its report “Our Common Future”, thus taking another important step on this path. The report proved the necessity and likelihood of sustainable triune development, combining natural, social, and economic components, as the only real direction of the civilization’s further development.

The environment is usually viewed as nature surrounding us, although, in essence, it is the combination of three spheres—natural, anthropogenic, and social:

- natural sphere (natural environment), part of which remains untouched by human activity. As of today, it accounts for about 1/3 of the land and it has not lost its main properties—self-healing and self-regulation. However, these are mainly the areas with harsh conditions (wetlands in the north, high-altitude areas, glaciers, etc.) that don’t support human life. The other part of the natural sphere, mastered and changed by man as a result of active interaction, on the contrary, has consistently expanded and continues to do so. The sphere of nature is often viewed as identical to the entire environment, which is not entirely correct:

- anthropogenic sphere (anthropogenic environment) comprises populated areas and structures created by human: buildings, industrial facilities, labor sites, artificial coverings, railways, dams, etc. This is primarily the result of economic activity which is characterized by waste accumulation, contamination, and pollution. A type of anthropogenic sphere can be called the natural environment, consciously or unconsciously changed by human activity—“cultural landscapes” such as agroecosystems (pastures, arable land, vineyards), reservoirs, ponds, forest plantations, parks, reclamation systems, etc.:
- social sphere (social environment) includes the relations between people and their groups, as well as between people and material and cultural values created by them with an impact on a person. “Pollution” of the social environment, which is characterized by constant contact with a person, is also dangerous for people. For instance, the social environment can act as a limiting factor hindering the development of people’s abilities useful to society.

The natural sphere does not only serve as our cozy home, but it can also pose threats. The biggest danger lies in the global threats that are relevant to the entire natural environment or its significant part: global climate change, desertification, water problem, the problem of the oceans, deforestation, shortage of cultivated land, problems of poverty, hunger, and other equally dangerous problems.

The natural sphere can maintain stable living conditions. Therefore, life on Earth can be supported only given the stable self-sustaining state of the entire natural sphere. Hence, the main danger lies in the limiting capacity of the natural sphere. Today, it is not even the scarcity of natural resources or degradation of the natural sphere, that is undoubtedly critical, but the exponentially expanding impact of our civilization on this sphere. It should degrade until the cause of degradation vanishes—a civilization that does not know how to normalize its impact on the natural sphere.

Therefore, if we want to ensure sustainable development, i.e., to meet current needs without jeopardizing the future of generations to come, governments have not only to facilitate economic and social progress but preserve the natural sphere as a sustainable self-sustaining system. However, the modern world is characterized by ever-increasing burden on the natural sphere inflicted by rapid population and economic growth which ultimately leads to its degradation. This is the essence of the global problem associated with rational nature management (environmental management) and sustainable development.

A characteristic feature of modernity is the greening of economic development. If the major goal of the economy at the industrial stage is its rapid growth accompanied by increased consumption, which implies increased degradation of the environment, especially ecosystems, then the post-industrial economy is predominantly characterized by tertiary sector (services) growth, and the expansion of the secondary sector is led by knowledge-intensive, rather than material- and energy-intensive industries. It slows down (but does not prevent) the growth of post-industrial economy demand for raw materials and fuel and raises the chance of post-industrial countries for rational environmental management. General government expenditure in the EU on environmental protection amounted to 0.9 % of GDP in 2020 (Eurostat, 2022).

According to the IMF, the developed countries reduce natural resource consumption to their GDP (the coefficient of natural intensity) by 1.2% per annum. Although this figure lags behind their economic growth (about 2%), the result is a slowly growing demand for natural resources in this group of countries. Along with that, it should be noted that in the previous centuries developed countries drastically increased the consumption of natural resources and at the moment their share is still substantial. For example, the share of OECD member states in primary energy consumption was 39% in 2020 (BP, 2021).

Industrializing and pre-industrial countries particularly face the degradation of the natural sphere and in some cases intensified degradation. As a result, primary energy consumption in less developed countries rose by almost 28% from 2010 to 2019, while in developed countries it stayed flat (BP, 2021). Moreover, the environmental management in most states of this group is greatly determined by industrialization and rapidly growing population, both causing rise in natural resources consumption, which was first pointed out by T.Malthus in his model more than two centuries ago.

An important aspect of rational nature management is its adaptability in different parts of the world, where irrational nature management causes damage to local geo-ecosystems. It requires in-depth knowledge of geo-ecosystems development laws and significant investments, which in the contemporary context can be provided mainly by post-industrial states. As an example, we can trace the condition of the old industrial area of the Ruhr in Germany, which until recently was one of the most polluted areas of the world. The Rhine and Ruhr rivers, as many researchers noted, resembled gutters. However, today, with a reduction in coal mining, the Ruhr area has turned into a thriving post-industrial area, the rivers have been completely cleaned, and high-tech industries are actively developing. This is a vivid example of rational environmental management. At the stage of post-industrialization, the economy should become an eco-economy (“green economy”) and shift from a growth paradigm to a sustainable development one. Only in this case, one can ensure the rational use of natural resources within the sustainable development concept.

However, there are serious objections to this concept. In principle, the idea of sustainable development is humane and noble. But some scientists believe that this concept is more of a slogan rather than a scientific nature. The task of reducing resource consumption at the global level is appropriate, but it can be completed only in the long term upon industrialization of less developed countries. It should rather be about a more rational use of natural resources.

The indicators, characterizing the degree of environmental management rationality, are largely debatable and have not received unambiguous recognition in world practice. In particular, they include the Environmental Performance Index (EPI) and the Environmental Sustainability Index (ESI) developed by Yale and Columbia Universities, the system of indicators of sustainable development of the United Nations Commission on Sustainable Development, and the OECD system of environmental indicators. These indices evaluate countries by various indicators of the state of the environment. Another reading is the World Bank’s “genuine savings” indicator, which adjusts the amount of savings in GDP for losses from the depletion of natural resources and pollution (see Table 1).

Table 1 “Genuine savings” in some countries, % of GDP

	2000	2005	2010	2015	2017	2019
USA	9.3	3.0	0.9	5.1	6.0	2.9
Germany	10.2	10.1	–	12.1	14.4	13.3
Sweden	14.0	18.6	20.5	17.9	18.1	18.6
Japan	18.0	14.6	15.3	2.9	7.6	6.9
China	26.8	31.8	35.1	30.3	19.0	24.5
India	12.2	18.6	24.2	19.8	19.9	15.1
Brazil	6.3	8.0	5.2	3.2	5.6	7.4
South Africa	4.5	0.3	–3.4	2.3	1.3	–0.8
Russia	–13.4	1.5	4.5	10.9	7.9	8.0

Source World Bank: Little Green Data Book, 2001–2013, 2017; World Bank Open Data

Comparing this table with Table 3, we can conclude that in all the countries mentioned in these tables, the rate of “true savings” was noticeably lower than that of gross savings, and in some years several countries even experienced a negative rate of “true savings”.

1.2 Major Environmental Challenges

Nowadays the pace of world economic development surpasses the ability of the environment to cope with the impact caused by human activity. Researchers define the contemporary time as a new geological epoch—Anthropocene, when the impact of anthropogenic factors has become the main engine of environmental change.

Major interrelated groups of environmental problems are the depletion of resources, destruction of components, and pollution of the environment leading to climate change and waste problems.

1.3 Depletion of Resources

Overexploitation and extremely irrational consumption of natural resources lead to their depletion. The global production of raw materials more than doubled from 1990 to 2017 and it is projected to double again by 2060. The intensity of natural resource use, including freshwater, forests, surface soil, fisheries, fossil fuels, and minerals at the global level surpasses the natural recovery pace. The use of many of those resources has already reached all-time highs, which leads to price increase

and additional market volatility. Our today's economy is only 8.6% circular,¹ which means that the main share of used resources is not recycled (CGRI, 2021). The rise in consumption is partially offset by the higher efficiency of natural resources use. The average resource productivity of the G20 countries, which account for 75% of global material use, grew by some 40% from 2000 to 2017, but this will not be sufficient to make up for the global increase in the materials used. Achieving new targets of the clean energy transition will be very mineral intensive to meet the growing demand for clean energy technologies. It will require an increase in production of minerals, such as graphite, lithium, and cobalt by nearly 500% by 2050 (World Bank, 2020).

The main resource problem is freshwater scarcity. There is no global water shortage as such (see chapter “Resources of World Economy: Natural Resources”), but in most cases, its use is extremely irrational, or it is highly contaminated which is caused by population growth-inflicted pollution. Globally, approximately 80% of wastewater is released without adequate treatment. Some 1.2 billion people are suffering from severe water shortages or scarcity in agriculture. The water shortage problem mainly affects the population of developing countries, almost half of them live in Asia and Northern Africa (United Nations, 2019). Water problems are closely interlinked with food resources and food availability problems, as water is a key resource for food production.

1.4 Destruction of Components

The problem of resources is closely linked to the destruction of the natural environment: the spread of deserts on fertile lands, the salinization of soils, the death of coral reefs turning oceans into lifeless space, and the reduction in forest areas (see 10.2). Forests, in their turn, play an exceptional role in biodiversity, their reduction significantly adds up to the ongoing loss of biodiversity, since forests serve as habitats for most species. At the moment, the global rate of species extinction is at least tens to a hundred times higher than the average over the past 10 million years, when it was mostly caused by natural factors, and it is still growing. Some experts believe that the biodiversity shrinkage problem requires the most complicated solution among other environmental issues.

1.5 Pollution of the Environment

Pollution affects human health and has serious economic consequences. Air pollution by fine particulate matter alone caused about 6.4 million premature deaths in 2019.

¹ According to Eurostat, the circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products as long as possible.

The global cost of health damage by air pollution was USD 8.1 trillion in 2019 or 6.1% of the global GDP. Low- and middle-income countries are most affected (World Bank, 2022).

Pollution underlies the problems of global warming and ozone layer depletion. The ozone layer protects the Earth from ultraviolet radiation, its thinning could have a serious impact on human health and the environment. It is the only global environmental problem that has been successfully managed by humankind since the reason for the depletion of the ozone layer is only one kind of substance—chemicals, mostly chlorofluorocarbons. However, it will take several decades for the atmosphere to completely get rid of them.

The most ambitious, difficult to resolve, and potentially the most dangerous problem for humanity is global climate change. Climate change is driven by many factors, however, such changes over the last fifty years can't be explained by natural causes only. There is a scientific consensus as to the main cause of contemporary global warming, which is greenhouse gas (GHG) emissions generated by human activities. GHG emissions have raised the Earth's global average temperature by more than 1°C since the pre-industrial time. The main anthropogenic effect is the enhancement of the greenhouse effect by emissions of GHG, mainly carbon dioxide, methane, ozone, nitrous oxide, and chlorofluorocarbons. Carbon dioxide (CO₂) is the biggest contributor to climate change, accounting for about 80% of the warming effect, while methane contributes about 16%. Other GHGs caused by human activities are emitted in smaller quantities.

The key sectors generating emissions are energy consumption, including power and heating, transportation, buildings, manufacturing, and construction, which are responsible for 76% of human caused global GHG emissions. Other sources are agriculture (livestock farming and fertilizers usage), some industrial processes, deforestation, and land-use changes (WWF, 2022). The top ten emitting countries are China, the USA, the EU, India, and Russia.

It is most alarming that global warming affects almost all countries and is happening faster than scientists expected, which considerably complicates the adaptability of ecosystems. Close intercorrelation of the environmental components leads to changes in some parts while affecting the other parts. Global warming is already causing serious consequences and aggravating other global problems: reduction in resources, including freshwater, further destruction of other environmental components, including deforestation, desertification, and salinization of soils.

The environmental impacts of global warming are rising sea levels and acidity of oceans, threats to ecosystems and loss of biodiversity, extreme meteorological events, mass migrations and increased risks to water supplies. NASA data shows, that from 1901 to 2018 global mean sea level rose by about 20 cm, the fastest pace over the past 3,000 years, and it is mostly caused by melting polar ice caps and heat extension of the World Ocean's upper layer. The Arctic is warming twice faster than any other part of the earth, and its sea ice is shrinking by more than 10% every 10 years (WWF, 2022). By 2100, the sea level will rise by another 0.6–1.1 m if GHG emissions continue to increase at high rates (Forbes, 2021), which will have a serious impact on the coastal regions.

The problem is not just the warming, but the disruption in the climate balance, i.e., changes in the circulation of air and water. This leads to a bigger number of extreme weather events: hurricanes, typhoons, droughts, flooding, which may become more frequent and intense. In 2021 natural disasters alone caused economic losses of \$270 billion (Swiss Re Institute, 2022).

Another implication is a negative impact on lives and health, as global warming leads to the proliferation of the most dangerous human infections and the northward spread of insects causing crop damage. The emergence of new diseases, transmitted between animals and humans, including coronaviruses, is linked to habitat loss, environmental degradation, and climate change (UNEP, 2020). Climate change may become a leading cause of death around the world, about 40 mln people could die because of changes in temperatures until the end of the century even with moderate mitigation of emissions (UNDP, 2022).

In the worst case scenario of temperature rise of more than 3°C, the world economy may contract by 18% by 2050. The most vulnerable countries are in Asia: China may lose nearly 24% of its GDP in the worst-case scenario, whereas the US losses may be close to 10% of GDP, and Europe's almost 11% (Swiss Re Institute, 2022). In the twenty-first century, the anthropogenic impact will increase and further warming is expected. By the end of the century, the rise in temperature may reach 4°C, which might lead to even more severe consequences.

The complexity of the warming problem can also be explained by its long-term nature. The atmosphere retains GHG for many decades and centuries and the consequences will be felt for a long time given the interrelation of natural processes. For this reason, the international community faces the challenge of maintaining the global temperature rise this century below 2°C, thus mitigating the most negative consequences of global warming.

Waste, especially dangerous waste, has become an outstanding issue. Depletion of resources and waste generation are closely interlinked. In 2016 the global municipal solid waste only was estimated at more than 2 billion tons, while just 13,5% was recycled. Waste generation may grow by 70% by 2050. Plastic waste is another acute problem, some 50% of the plastic is used only once, while 90% is not recycled and a substantial share is dumped into seas and oceans affecting marine life. Electronic waste is the fastest-growing segment (World Bank, 2022).

1.6 “Ecomigration” and Conflicts

The problem of limited natural resources and others in combination with political and social problems have already led to increased migration and international conflict risks due to extreme weather events, reduction in available natural resources and other climate-induced effects, primarily in less developed countries.

This gave rise to the term “ecomigrants”, describing people leaving their countries due to environmental problems. Most researchers estimate the number of environmental migrants at 20–25 million people. The Intergovernmental Panel on Climate

Change (IPCC, 2014) estimates that 200 million people may migrate from their place of origin by 2050. The examples are the migration caused by the advance of deserts in China, Libya, Morocco, and Tunisia, soil erosion in Turkey, and migration of the Honduras, and Nicaragua citizens to the USA as the result of Mitch hurricane. The number of internally displaced citizens is far bigger.

Limited water resources, exacerbated by climate change, are already contributing to conflicts in many parts of the world. The UN Security Council highlights the relationship between water risks and conflict within and between countries. For example, a record drought in Syria pushed rural farming families into cities and ended in a civil war. Disputes about the lands and water between the rural citizens of Kazakhstan and Kyrgyzstan aggravated when in 2013 the citizens of Kyrgyzstan blocked the channel carrying water to the farmers on the Kazakh side of the border.

As a result, in the last decade, economic risks were overtaken by environmental threats. Environmental risks, including climate action failure, extreme weather, and biodiversity loss, were identified as the top three most severe global risks over the next 10 years by World Economic Forum in 2022. Climate change is still perceived as the most serious threat to humanity.

Environmental problems are closely connected with growing inequality in the distribution of economic growth benefits. In the last two to three decades, the main population increase and the fastest economic growth have been witnessed in developing countries which face the most serious problems associated with food supply, housing, employment, and medical care. The combination of these factors leads to extensive exploitation of the environment. Developed countries usually capitalize more on the benefits of the Earth's pressures and suffer less from their consequences (UNDP, 2022). Developed countries invest a lot in the environment, and last year the same trend was also seen in the fastest-growing developing economies. Less developed countries do not enjoy the same opportunity; therefore, the development issues are environmentally imperative and require joint efforts of the World community.

1.7 Responses of the World Community to Environmental Challenges

The acute and complex nature of global environmental problems contributed to the implementation by the World community of the growing responses to new challenges. The responses at the international level have been triggered by the failure to solve the global environmental problems at the national level; by the need to coordinate the interests of various states and necessary engagement of the developing countries; high costs to resolve problems; the stronger position of MNEs and bigger impact of the environmental risks on the international and national security.

As a response to the problem the World community extended research activity in this area, included and focused on the environmental component in the new strategy of mankind's development, put the environmental protection issues on the agenda

of the international negotiation process, and altered the strategies of international business, regional integration alliances, and states.

In the twentieth century, especially during its second half, several important research proved the gravity of the environment and its role in further development of mankind: reports to the Club of Rome and the concept of sustainable development (chapter “[Resources of World Economy: Real Capital](#)”). It was envisaged that the concept realization would gradually ensure adjustment of the uncontrolled industrial development of the countries. Later, the green economy concept, similar to the concept of sustainable development, was shaped, which, according to UNEP, “increases the living standards of people and social equality, while considerably lowering risks for the environment and its depletion” (UNEP, 2011).

The results of the first research shaped the agenda of international conferences to address the environment. The first UN World Conference on the environment in Stockholm in 1972, brought up the need to change the situation for the first time at the world level, and UN Conference on the environment and development (Rio de Janeiro, 1992 and subsequent conferences of 2002 and 2012), where the concept of sustainable development was approved and recommended for enacting by the states, were the most important.

Relevant international organizations were established, and many international treaties were concluded. It was followed by regional agreements, multiple laws in many states, and setting ministries and authorities responsible for the environment. Since the 1990s environmental issues have become the focus of practically all international multilateral associations—UN system organizations, OECD, G7 and G8, G20, regional economic agreements, states, business circles, and NGOs. Non-profit organizations such as World Wild Fund, Greenpeace, Global Green Growth Institute, and others play even more active roles.

Environmental issues have become an integral part of practically all major international treaties and agreements, from WTO negotiations to a whole system of international environmental agreements. It is accompanied by a growing number of agreements, expanding geography and scope of coverage, and implementation of new mechanisms.

Within the WTO framework environmental issues and their impact on trade currently play a growing role despite the lack of special agreements on the environment. Sustainable development and environmental protection have become one of WTO goals. At the moment some WTO agreements embody environmental clauses. Members are entitled to deviate from GATT rules to protect the environment subject to compliance with main WTO principles. Currently, 46 WTO members, which account for the bulk of the global trade in environmental goods, are engaged in negotiations over the agreement to liberalize trade in key environmental goods, such as clean and renewable energy sources. Under their commitments, most APEC economies have already reduced tariffs for environmental goods to 5% or even lower.

Signing and implementing special international environmental agreements (IEAs) with focus on acute environmental problems have become an important achievement of the global community. Currently, there is a network of over 1,300 multilateral environmental agreements, by far surpassing any other area of international law.

The most important agreements include agreements on greenhouse emissions (the UN Framework Climate Change Convention, 1992, the Kyoto Protocol, 1997, and the Paris agreement), on the protection of the ozone layer (the Vienna Convention for the Protection of the Ozone Layer, 1985, and the Montreal Protocol, 1987), on trade in endangered species (the Convention on International trade in Endangered Species of Wild Fauna and Flora CITES, 1975), on the trade in hazardous waste (The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1992), on preserving wild flora and fauna species (The Convention on Biological Diversity, 1993), on trade in hazardous chemicals and pesticides (the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 1998), on persistent organic pollutants (the Stockholm Convention on Persistent Organic Pollutants, 2001). The Minamata Convention on Mercury, 2013, the first to regulate the production and trade of heavy metals, is one of the latest important international environmental agreements. Negotiations over agreements to address other global environmental problems are in progress.

The Paris agreement, one of the major international agreements addressing the problem of climate change, was adopted by 196 countries in Paris in 2015. The ambitious goal is to limit global warming to well below 2°, preferably to 1.5°C, compared to pre-industrial levels. Countries submitted their national plans to achieve climate neutrality by 2050. For the first time, the developing countries undertook obligations to make voluntary contributions to reducing emissions. The developed countries pledged to provide financial aid to less endowed and more vulnerable countries.

Many states have changed their economic strategies and policies in line with the green agenda. Climate policy has received special attention at all levels. Its implementation is stimulating the energy transition—the transformation of the energy system through a shift from fossil fuels to alternatives, including not just renewable energy but nuclear power and hydrogen energy as well. In this respect, the solution to environmental, primarily climate issues, is increasingly intertwined with energy policy. In the past, it was mainly the specific feature of the EU policy, while now, other countries are also adopting corresponding policies. Over 170 countries have set targets to develop renewable energy sources (), and over 30 on hydrogen (Hydrogen Council, [2021](#)). Over 140 countries have announced or plan to achieve net-zero emissions targets by 2050 or 2060: those countries account for about 90% of global CO₂ emissions. More regions, cities, and companies are setting carbon neutrality targets. In some countries, COVID gave a new impetus to the implementation of environmental policy, including the climatic component.

Thus, the pressure of the environmental protection factor on the world community is growing. Recognizing the objectivity and the lack of alternatives to the green development path (given the survival of mankind, not self-destruction or military conflicts), the foundation for the advance of the green economy targets on the international level tends to be national and business interests and the economic potential of countries. Despite more efficient use of resources and other achievements, while promoting green economy agenda large developed and politically strong countries

continue their policies with aggressive consumption of global resources, causing further degradation of the environment. Such consumption standards are copied by rapidly developing countries, such as China, whose impressive economic achievements were attained at the cost of colossal environmental costs. Environmental reasons are often used as pressure factors against other countries, which are unable to quickly transform their economies and policies for economic reasons and due to the inertia of their development.

1.8 Impact on World Economy and International Business

Responses of the World community to environmental challenges accelerated the process of deep changes in the world economy and international business. At the core of this process is the energy transition accompanied by the transformation of all the elements of the world economy.

The positive impact of the economic transformation is ensured by the cost-cutting capacity of the so-called “brown economy”.² Research confirms that the costs to protect the environment are considerably lower than those associated with its deterioration. For example, the expenses to prevent deforestation and forest degradation amount to €1 billion, but they could save the EU economy at least €3.2 billion annually (European Commission, 2021). At the same time in case this process slows down future costs for the “greening” of the economy could become much higher due to the so-called lock-in effect.³

The share of the green sector in the economy is on the rise and amounts to 3–6%. The green sector now is roughly equivalent to the fossil fuel one. Although the market share is relatively small, over the last few years its pace has exceeded any other sector of the world economy. According to forecasts, the environmental markets will become the leaders in the twenty-first century.

One of the major fast-growing segments is the global alternative energy market, with real production growing 10–20 times faster than expected. Even though the share of renewable energy in the global energy mix in 2020 was estimated at 6% (see chapter “[Resources of World Economy: Real Capital](#)”), it accounted for 90% of generating a capacity increase in the world (IEA, 2021). The main growth region is the Asia Pacific market, its share in 2020 already amounted to 35% (Allied Market Research, 2021). A relatively new nascent market is the hydrogen energy market.

An important trend is the integration of the environmental component practically in all global industries: automobile, agriculture, tourism, and others. The global market share of electric cars reached in 2021 almost 9% of global car sales and the global electric car park stood at 16 million (IEA, 2022).

² “Brown economy”—a traditional economy with a high grade of environmental pollution.

³ A situation when the choice of one technology prevents a further switch to a different technology due to additional costs.

The share of the environmental sector in international trade is growing as well. Its estimates vary depending on the classification since there is no consensus over it. International trade in environmental goods and services increased almost fourfold from 2000 to 2020 (IMF, 2022). In 2020 international trade in environmental goods alone totaled \$1.33 trillion (UNCTAD, 2021), which accounted for some 8% of the international trade in goods and about 11% of manufactured goods trade. Top exporters of environmental goods in 2019 were the EU-27 (with a share of 39%), China (21), the US (8), Japan (7), Republic of Korea (4) (UNCTAD, 2021). However, the trend of growing share of environmental goods is accompanied by the rise in the trade of environmentally hazardous products, for example, dangerous waste, and rare species of animals and plants.

A special role in the implementation of the green economy strategy is attributed to investments, as they determine the future of the world economy. Over recent years, there has been a particular focus on the environmental component in world investment. The principal investment area is energy transition, which increased threefold since 2010 up to \$755 billion in 2021. Investors are actively reallocating their investments from fossil fuel production; companies are opting out of its use. Driven by active state policies and decreasing costs due to new technologies renewable energy has become the main investment area. In many countries renewable energy has become the cheapest source of energy (since 2010 the solar energy cost has fallen by 85%) (IRENA, 2021a).

The costing analysis estimates of the energy transition by 2050 vary considerably, from \$73 trillion (Stanford University) to \$125 trillion (UNFCCC) and up to \$131 trillion (IRENA, 2021a), i.e., they are comparable to the global GDP or even higher, which determines annual expenses of \$2.5–4.5 trillion. Therefore, the cost is high but feasible, especially given that price decline of renewable energy and other clean energy sources exceeds the forecast, which will allow us to save trillions of dollars (Piskulova, 2022). Most investments are needed for the decarbonization of the electricity supply as well as for transport and buildings (UNFCCC, 2021).

COVID gave a new impetus to green investments. Globally, the green stimulus to overcome the economic crisis in money terms is estimated at over \$1.8 trillion (to compare: to overcome the financial and economic crisis of 2008–2009 financial stimulus made up \$650 billion) (Finance for Biodiversity Initiative, 2021).

A special role in the realization of SDG is played by FDI. In 2015–2019 average announced capital expenditure on greenfield FDI projects in eight main sectors amounted to \$134 billion per annum, with a focus on renewable energy. Greenfield FDI in renewables exceeded flows into fossil fuels for the first time (FDI Intelligence, 2022). The progress in SDG investment is evident in transport infrastructure, telecommunication, food and agriculture, climate change mitigation, ecosystems, and biodiversity. At the same time, global investments in SDG remain far from the target to meet the \$2.5 trillion annual financing gap for developing countries (UNCTAD, 2020).

Public and private development banks, central banks, sovereign wealth funds, commercial and investment banks, pension funds, insurers rating agencies, and stock exchanges are allocating more and more funds to finance sustainable development

projects. Climate investment funds, such as Green Climate Fund and Global Environmental Facility, have become an important source of finance in the climate sphere, especially in developing economies. The global green bond market has seen substantial growth as well. In 2021 the market experienced its largest growth to just over half a trillion and could reach \$1 trillion by the end of 2022 to reach \$5 trillion by 2025 (Climate Bonds Initiative, 2022).

“Greening” is becoming an important part of the international innovation business, where the share of environmental activities in the twenty-first century alone increased from 7% to over 10%.

A big emphasis is laid on seeking a solution to the climate change problem, which requires major scientific and technological breakthroughs. Now there are many technologies to facilitate the energy transition (renewable energy, green hydrogen, modern bioenergy) and their combination can allow for realizing the ambitious plans (IRENA, 2021a, 2021b).

Increased financing is also stimulated by state policies. Green innovations are becoming an integral part of state innovation strategies (Brazil, Canada, China, Finland, Germany, Japan), energy strategies (Austria, Australia, Norway, Portugal, Switzerland), water and transport strategies (Israel), green growth strategies or plans (Belgium, Denmark, Hungary, Ireland, Republic of Korea, Luxemburg, South Africa, Sweden).

The environmental factor stimulates the research, scientific and information exchange between the countries. The depth and scale of environmental problems mean that even the most developed states for a variety of reasons are incapable of carrying out costly and diversified research requiring the concentration of all mankind’s efforts; thus, cooperation is the only feasible path. The following “couples” of countries and territories led by the number of joint inventions: USA-China, USA-India, USA-Canada, Taiwan-China, USA-UK.

However, international trade and FDI can play a negative role in the environment by increasing demand, expanding production, and generating more waste. For example, trade in wild animals and plants leads to the contraction of biodiversity. Estimates attribute global trade to nearly one-third of the species threatened with extinction on the global level (UNCTAD, 2021).

1.9 Business and ESG

The transformation of the world economy and international economic relations is largely driven by the deep penetration of environmental, social, and governance (ESG) approaches in business, primarily MNEs. ESG components are a set of standards for business operations, considering social and environmental factors. They may include the effectiveness of resources used, the discharge of waste, carbon emissions, labor relations, the relationships with people and institutions in the communities, the practices of legal and decision compliance, etc.

The role of businesses, primarily MNEs, in the transformation of the world economy and the realization of a sustainable development strategy is of a dual nature due to their economic and political power as well as their goals.

The international production of MNEs encompasses almost all countries and economic activities, stimulating globalization. The aim of businesses to maximize their profits encourages the unlimited expansion of operations and relocation of MNEs capacities to regions with better economic and political conditions to minimize environmental costs. MNEs are using more and more resources and polluting the environment, incurring bigger responsibility for planetary environmental problems and objectively contradicting the sustainability of development. In developing countries, big corporations are often in control of resources. As an example, the modern mega-mining activities of MNEs associated with commodification and seizure of land in the Global South cause large-scale pollution and water contamination. Inequalities and human rights violations are further exacerbated, in particular through the proliferation of advanced technologies of concern (e.g., the use of GMOs). The corporate monopoly in many spheres, including mass media, greatly influences national policy-shaping.

At the same time, the increasing role of major companies, primarily MNEs, in the world economy and in political arena makes it impossible to implement the sustainable development strategy without their involvement. MNEs control about half of the world's industrial production; they account for the biggest share of international trade and investments and are major generators and users of the newest technologies.

The global capital of MNEs in the world economy shapes and controls the organization, location, and distribution of resources, production, and consumption to a considerably larger extent compared to state and national companies. MNEs are the main global producers and exporters of environmental goods and services, objectively contributing to the realization of a sustainable strategy. At the core of MNEs activities are long-term production ties, and global value chains under their control account for 50–80% of global trade. Investment decisions by big companies can create global demand, impact employment and technological progress, enhance productivity and efficiency, and promote social and environmental standards along the value chain.

Over the recent decades, the attitude of businesses to sustainable development has significantly evolved, ESG factors have become increasingly predominant in business strategies. In 2021 at the World Economic Forum more than 60 corporations with a market capitalization of over \$4 trillion, pledged to adopt a new set of ESG reporting norms. As of the end of 2021, most of the 30 biggest companies in some sectors made net-zero pledges, including the largest US and European oil and gas firms, utilities, and banks. At Climate Action 100 +, an investors group of 500 companies with over \$47 trillion in assets under management, demanded that 160 world major companies, representing 80% of industrial emissions, should publish strategies to reduce emissions by 45% by 2030 and to reach net zero by 2050 (KPMG, 2021).

The attitude has changed mostly due to government regulation, lower environmental and social risks, increased competitive advantages resulting from the improved image, reducing costs, higher capitalization, and winning new markets.

An important factor in the greening of MNEs' activities is state regulations based on international agreements. The responsibility of the business for the environment is stipulated in many international documents, including the Declaration of the UN conference on the environment in Stockholm in 1972, the report "Our common future", principles of the Rio de Janeiro declaration on the environment and development, and other subsequent documents.

Embedding ESG in the business strategy is now essential to minimize regulatory and legal risks. McKinsey analysis shows that about 1/3 of corporate profits are at risk caused by state interventions. The risk can reach 60% in the automotive, aerospace and defense, and tech sectors, where government subsidies (among other forms of intervention) are prevalent. Risks may be reduced with companies' better involvement in ESG goals by lower loan and credit risks and higher credit ratings as well. Most companies carrying out the goals do not experience a drag on value creation but have higher equity returns.

An important factor contributing to the changes is the improved company's reputation in the eyes of the public, employees, consumers, and other companies including investors, insurance, auditor, and credit rating agencies. The impact of this factor is increasing due to the quick development of modern types of communication, including social networks. Setting environmental and social goals increases staff motivation. Studies show that positive social impact correlates with higher job satisfaction.

Improvement of the reputation contributes to higher capitalization of companies. Analysis revealed the increase in financial value on account of adopted corporate and social responsibility, which was noted by almost half of 250 major corporations (KPMG, 2013). The increase in capitalization depends on the scope of activity: in the traditionally "dirty" industries, the greening of production leads to higher equity prices.

ESG may increase the competitive advantages of businesses due to the changes in consumer preference, cost reduction, and shifts to more sustainable businesses. Since introducing its "pollution prevention pays" (3Ps) program in 1975 the company 3M has saved \$2.2 billion due to preventing pollution using improved manufacturing processes, redesigning equipment, and recycling and reusing waste from production (McKinsey, 2019). New digital technologies are used to reduce costs. For example, a leading European minerals company used a digitally enabled energy control tower with a cloud-enabled data platform and AI for an integrated energy management solution. As a result, it reduced energy consumption by 5–10% and is on track to save costs of €8–9 million a year (BCG, 2021).

Sustainable business may lead to winning new markets. Examples of new opportunities are hybrid and electric vehicles, currently produced by many automobile companies. Finnish company Neste, operating in petroleum refining for over 70 years, now generates more than 2/3 of profits from renewable fuels and sustainability-related products (McKinsey, 2019).

Company Total's investments in renewable energy projects

Total's plan for renewables is to invest \$500 m a year in clean energy technologies. That figure is about 3% of the French oil major's total capital expenditure, with plans in place to ramp that up to 20% over the next 20 years. Over the past 10 years, it has made several strategic investments, which included \$1.4bn being spent on acquiring a 60% stake in US solar firm SunPower in 2011.

Total is aiming to become a global integrated leader in solar power and has 1.6 gigawatts (GW) worth of capacity, and plans to increase that to 5GW over the next five years.

In 2016, it purchased French battery manufacturer Saft for \$1.1bn and bought Belgian green power utility Lampiris for \$224 m. Total acquired a 74% stake in the French electricity retailer Direct Energie for \$1.7bn in 2018, propelling the company forward into being one of the top utility providers in France.

BCG (2021). Climate Innovation: Diversification and Green Business. <https://medium.com/bcg-digital-ventures/climate-innovation-diversification-and-green-business-models-ec24d4bcb7f4>;

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MNEs themselves initiate the usage of voluntary environmental instruments (certifications, non-financial reporting, etc.) which can improve existing weaknesses of environmental regulation and the quality of environmental management institutions in developing economies (Shvarts et al., 2015). Several voluntary instruments have been developed in the areas still not covered by national and international regulations. Initially, some of them were voluntary, but later became compulsory instruments of state and international policies. Common principles are high environmental standards, the principle “from cradle to grave” (responsibility for the entire life cycle of a product) and “closed-loop” production, i.e., cyclical production, including waste recycling and their use in the new production, etc. For example, General Mills works to ensure that its ESG principles apply “from farm to fork to landfill” (McKinsey, 2019). Starting 1990s corporate codes on social and environmental issues are widely used.

Practically all MNEs have introduced changes to the management structure, they actively participate in international environmental initiatives, and set up organizations promoting the ideas of the green economy. An important role is played by initiatives within the UN framework, World Business Council for Sustainable Development, UN Global Compact, which developed rules of responsible business practices, Principles of responsible investments for the global investors' network, Coalition for an Environmentally Responsible Economy (CERES), The Task Force on Climate-Related Financial Disclosures (TCFD) and others (Tables 2 and 3).

MNEs are increasingly integrating sustainability into requirements across GVC. Investment decisions and supplier selection are now being weighed on ESG concerns. A Bank of America institutional investor survey confirms that climate change is a top concern for 72% of institutional investors. In the last years, global ESG-oriented

investing rose substantially, in 2016–2020 from \$23 trillion to \$35 trillion, reaching more than 1/3 of assets under management in major economies. In 2025 they may reach \$53 trillion (Global Sustainable Investment Alliance, 2021).

It is worth noting that only real environmental protection measures contribute to the improvement of corporate reputation. Some companies unreasonably positioned their products as environmentally clean, which later did not meet the expectations, with subsequent damage to the company's reputation and even the idea of greening production as such. A classic example is Volkswagen, which admitted to cheating on emissions tests by using software that reduced the level of emissions during the tests.

Despite the significant progress it seems premature to claim that those progressive trends have become prevailing in the business activities of the companies, although the situation is dynamically changing. Business operations, first those of MNEs, continue to cause enormous and increasing damage to the environment. This is caused by many factors, in particular the lack of appropriately formulated goals and insufficient support at the state level, lack of relevant information and education, the inertia of thinking at the company management level, and other reasons.

Table 2 Development of environment-related technologies (patents) share in all technologies, %

	1990	2000	2018
World	6.69	7.03	10.26
OECD countries	6.67	7.11	10.91
EU-27	7.61	7.75	12.90
USA	6.08	5.64	9.47
Non-OECD countries			
BRICS	9.95	5.92	8.41
China	9.86	3.67	8.35
India	4.62	4.49	8.50
Russia	9.26	12.46	8.86

Source OECD statistics (2022). https://stats.oecd.org/Index.aspx?DataSetCode=GREEN_GROWTH#

Table 3 Global sustainable assets under management, \$ billion

	2016	2018	2020	2025
Total assets under management	81,948	91,828	98,416	–
Total sustainable investments under management	22,872	30,683	35,301	53
Share of sustainable investments (%)	27.9	33.4	35.9	–
Increase in sustainable investments (compared to prior period)	–	5.5%	2.5%	–

Source Global Sustainable Investment Review 2020. Global Sustainable Investment Alliance, 2021. <http://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf>

2 Conclusions

1. This chapter examines global environmental problems, some of which are extremely difficult for humanity to solve. In recent years, the World community has undertaken concerted efforts to combat these problems at all levels. However, those efforts are not yet sufficient to solve the most complex and urgent problems—such as climate change and loss of biodiversity—for objective and subjective reasons, including the need for unprecedented investments and breakthrough technologies in several areas, difficulties faced by developing economies (especially resource-based economies) and social and cultural motives.
2. Presently, the global economy, international trade, investments, and scientific and technical cooperation are undergoing fundamental changes, and the environmental component is increasing its role and share in all the elements of the global economic system; according to forecasts, in the twenty-first century, it will be dominant in all those elements.
3. The deep changes are associated, among other things, with deep penetration of ESG approaches into business activities. The new approaches are mostly driven by government regulation, lower environmental and social risks, increase in competitive advantages due to improved image, reduced costs, higher capitalization, and winning new markets. At the present stage, the ESG strategy is increasingly consistent with the achievement of the main goal of any business—to maximize profits. However, this chapter cautions against an overly optimistic assessment of MNEs environmental orientation. Despite significant progress, claims of the dominance of progressive trends in the company's practice seem premature, business operations continue to cause increasing damage to the environment, although the situation is changing dynamically.
4. While environmental problems require deep awareness and more active urgent actions, it is necessary to carefully assess the potential of developing economies, which do not always have the investment and technological capacity to rapidly restructure their economies. To evaluate these opportunities more research is required.

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Global Challenges: Backwardness and Modernization



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Abstract The chapter considers the essence, causes and consequences of economic backwardness. It describes the main models of modernizing the backward economy, as well as the problems of modernization of developed economies.

1 Introduction

The backwardness is probably the main economic problem for developing countries, since it, in turn, generates other global problems—mass poverty, unobserved economy. The problem of economic backwardness is less relevant in developed countries, but many of them are striving to eliminate their lag behind the leaders in terms of level of development.

2 Backwardness as a Problem

2.1 *The Essence of Economic Backwardness*

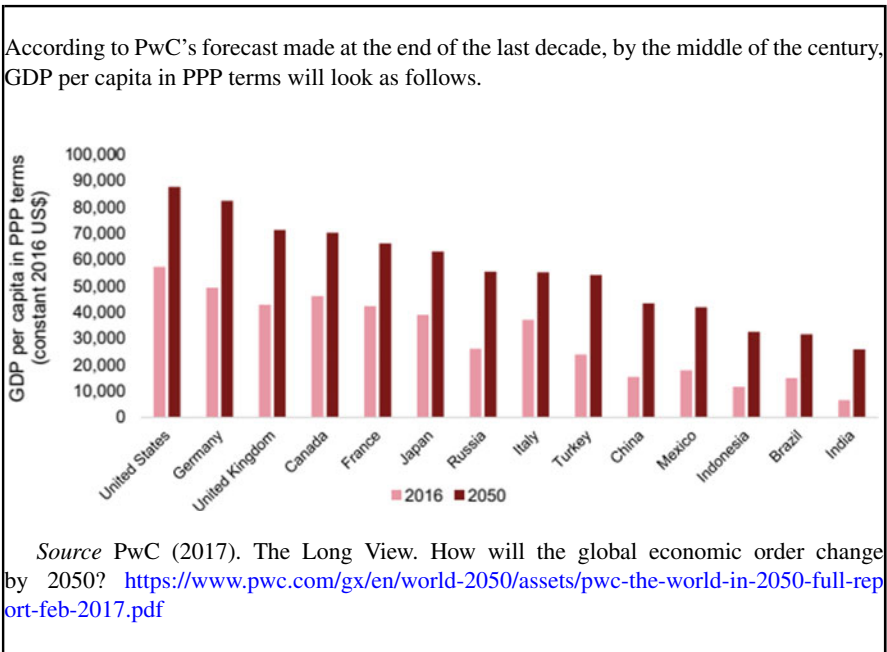
Economic backwardness means that a country is at a lower level or stage of economic development compared to other, more developed countries.

The problem of economic backwardness has existed for a very long time. Five thousand years ago, when Europeans were engaged mainly in hunting and fishing, irrigated agriculture existed in Sumer and Egypt, they manufactured a wide variety of tools and had already invented writing. In the Middle Ages, China, India and the civilizations of Western Asia surpassed the development level of Europe in terms of GDP per capita (Maddison, 2007). Finally, in our time, a group of developed countries numbering more than three dozen significantly exceeds the development level of the

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other 160-plus countries of the world (see chapter “World and Global Economy, Global Business Environment, and International Business: Nature, Formation, and Structure”).

The gap in the levels of economic development between countries and regions of the world will continue to exist in the future. If there is still a strong gap in the development levels between regions, states, and lands in medium-sized and large-sized countries (and it will continue to be maintained), then this gap will be seen between the countries of the world. Nevertheless, most countries are striving to reduce or eliminate their backlog by implementing modernization.



2.2 Causes of Economic Backwardness

What are the reasons for the economic backwardness of most countries? Economic history shows that in the countries now classified as less developed, the transition to a market economy (market system, capitalism) began later or was slower than in the currently developed countries. Institutional theory can explain that this happened because of the backwardness of their institutions (rights, traditions and customs). They are the ones that generate backward economic relations, and those generate a backward economy (e.g., Acemoglu & Robinson, 2012).

Economic systems differ from each other primarily by such institutions as ownership forms and independence of economic agents (see Sect. 5.1). Under capitalism, unlike the traditional system, private property dominates, and economic agents are highly independent. The latter can be explained as follows: under capitalism, there is consumer sovereignty (in which the range and volume of the production are ultimately set by the consumer, for whom producers compete) and freedom of entrepreneurship (firms use economic resources to produce and market products mainly of their own choice).

In less developed economies, the transition to the predominance of private property has been hindered and continues to be hindered by communal, landlord and state property, the sovereignty of the consumer is hindered by weak competition, and the freedom of entrepreneurship is constrained by law, traditions and customs. For example, according to statistical data (WEF, 2019), in Nigeria, the burden of government regulation is very high (122nd place in the world), protection of property rights is low (129th place), and the level of competition is low (84th place), although the level of entrepreneurial culture in the country is relatively high (31st place).

The references of the former colonies to the fact that their backwardness is primarily caused by colonialism are not fully convincing. Colonialism, on the contrary, destroyed their backward pre-capitalist institutions (albeit often in a crude way), introducing more advanced capitalist ones, although this led to dependent (peripheral) development. The experiment set up by the history of Africa (Ethiopia remained the only independent country there) and Latin America (Haiti achieved independence there before anyone else) demonstrated that the absence of colonialism or premature liberation from it rather slowed down the economic development of these countries. At the same time, the experiment in Asia, where not only now economically backward Nepal and Bhutan but also the more developed Japan, Thailand and Turkey remained independent, may testify against the absolute character of such a conclusion.

The economic sphere (and its economic institutions) is adjacent to the political, social and cultural spheres (and their institutions). They are all interconnected and have an impact on each other. As a result, the reform of economic institutions, if it is not accompanied by the progress of other institutions, does not bring the expected results. In addition, the strong interconnection of all public institutions generates inertia—even in the countries that have overcome their economic backwardness with record speed (Japan and other developed Asian economies), it took many decades. Therefore, a frequent reason for the persistent economic backwardness is the inability to accompany economic reforms with political, social and cultural ones. An example is India, where, along with the developed political sphere, the social sphere remains backward (at the end of the last decade, about 500 million people did not have access to medical facilities) as well as the cultural sphere (29% of the adult population are illiterate) (see chapter “[India](#)”).

2.3 Consequences of Economic Backwardness

Indicators of the level of economic development demonstrate the backwardness of the most countries in the world. The institutional theory explains their underlying causes. But what consequences of backwardness do economic agents face when carrying out their activities in these countries?

First, this is a shortage of capital and knowledge. In addition to fuel-exporting countries, as well as export-oriented economies (mainly East and Southeast Asian countries), other less developed countries usually have a low gross savings rate, which reduces their investment rate, although, as economic history shows, the latter should be high for industrialization (in China, it exceeds 40%). The lack of knowledge is evidenced by the low level of education in most less-developed countries, which hinders the launch of modern industries there.

Why does the backwardness of economic institutions lead to a low capital accumulation and a low educational level? As for capital, it is multiplied best where private property prevails—its owners use and accumulate their capital better than the state or the community. Regarding education, we can say that the independence of economic agents requires extensive knowledge. How else can producers, in conditions of consumer sovereignty, actively compete for a buyer, how can they successfully establish new manufacturing units in conditions of the freedom of entrepreneurship?

Other consequences of economic backwardness include low global competitiveness of the most products manufactured in backward economies, mass poverty of their population, high birth rate combined with high mortality, low social protection—lack of pensions, affordable education and health services. In a word, these are the problems that economic institutions have generated over the millennia of a traditional society. These institutions need to be modernized.

3 Modernization: Models of Less-Developed and Developed Economies

Economic modernization means the transition of the economy to a higher level of economic development. The institutional theory emphasizes that this requires, first, the evolution of economic institutions and, above all, the growth of private property and the freedom of economic agents. This idea is the basis of the theory of economic development (e.g., Todaro & Smith, 2020), aimed at addressing the problems of backwardness and modernization (although, it is not a theory, but a set of different theories and their elements analysing different problems of economic development).

We should add that modernization means updating not only the economic but also the political, social and cultural spheres. Severe delays in the modernization of one of these areas slow down the modernization of other areas. An example may be unsuccessful attempts at modernization in Russia in the eighteenth-nineteenth

century, Latin America in the nineteen-twenty centuries, and modern Sub-Saharan Africa.

Economic modernization as a fundamental problem consists of narrower problems. We should consider them first in the context of a less developed, and then developed economy.

3.1 Modernization Models of a Backward Economy

For less developed countries, economic modernization means overcoming their backwardness. In practice, this looks like an attempt to catch up with developed countries in terms of economic development. Hence, there is such a term as “catch-up development”. However, economic theory prefers to deal with the term “modernization” to emphasize that in the process of modernization, the country pursues not only an increase in GDP per capita but also other indicators of economic development. In addition, it is assumed that economic modernization covers both less developed and developed economies.

The first models of catch-up development appeared a long time ago. In the second half of the nineteenth century, Germany and the USA, lagging behind Great Britain in terms of the level of development, resorted to active protectionism to protect their infant industry, raising import duties on finished products to several tens of per cent, and Japan began to actively use state regulation of the economy, state support of large national companies and the undervalued yen to encourage exports and curb imports.

Since the mid-twentieth century, dozens of countries, mostly less developed, have already begun economic modernization. They used the experience of the mentioned countries, adapting it to their economic reality. Their modernization models were characterized by foreign trade protectionism and the promotion of import substitution; active state regulation of the entire economy, including large government expenditure and large public sector, as well as the support for national monopolies; limited convertibility and even non-convertibility of the currency to prevent the export of national capital and, most importantly, for the administrative establishment of the exchange rate at an undervalued level (e.g., see chapter “[Latin America](#)”).

Such a model of economic modernization (it can be called neo-Keynesian, although it contained large elements of mercantilism) brought both successes and failures to less developed countries. On the one hand, they were able to start industrializing their economy and increase the pace of economic growth. On the other hand, many of the protected industries turned out to be weakly competitive, and strong state interference gave rise to “government failures”. From the point of view of institutional theory, the main failure was the insufficient growth of private property (it was “wiped out” by the public sector) and the freedom of economic agents (it was hindered by the closeness of the economy, monopolies and red tape).

In less developed countries, incomplete economic modernization strengthened the modern sector but did not eliminate the traditional one. The modern sector is represented by capitalist enterprises (domestic and foreign firms, farms), and the

traditional sector is represented by pre-capitalist (handicrafts, communal and landlord entities). The coexistence of two large and different sectors in the economy is called dual economy (dual-sector economy).

Due to its shortcomings, the neo-Keynesian model of economic modernization began to be replaced by a neoliberal one. Protectionism began to decline, increasing competition from foreign competitors in previously closed and monopolized industries, the public sector began to be privatized, and the currency became increasingly free from restrictions on its convertibility. But this neoliberal (to be exact, mostly neoliberal) model of economic modernization at one time retained tangible elements of neo-Keynesianism and even mercantilism—a higher level of import duties than in developed countries, significant restrictions on foreign investment and incomplete currency convertibility.

The most successful of the modernization models turned out to be the Japanese one (Japan turned into a developed country for the period from the 1860s to the 1960s) and other East Asian countries used it (South Korea, Hong Kong, Taiwan, and Singapore also became developed economies during the modernization of the 1950s-1990s) (see chapter “[Developed Economies of Asia](#)”). The East Asian economic model owes its success to the combination of different theoretical approaches from the very beginning—the state actively regulated the economy (but not at the expense of large government expenditure and a large public sector), which contributed to the development of private property as well as low taxes and substantial freedom of economic agents. Another reason for the success of the model is the active promotion of exports, including undervaluation of the national currency, which provoked a steady increase in the global competitiveness of the national economy. Finally, all this was accompanied by huge attention to the dissemination of knowledge. It should be noted that, when solving the problem of capital accumulation, the East Asian model relied on national financial resources, which was mobilized from the population, and not on foreign capital. Instead of importing capital, those countries actively imported knowledge. Within the framework of our dichotomy (the neoliberal model or the neo-Keynesian model), it was primarily a neoliberal model of modernization, though with strong elements of neo-Keynesianism.

The success of the described model has made other less developed economies, primarily new industrial ones, adopt it with their own modifications. This model allows China, India, Brazil, Turkey, and Indonesia to become new world or regional economic centres. In the twenty-first century, these countries tend to modify the model, primarily to a greater orientation of the economy to the domestic market. The increased affluence of their population provides a capacious domestic market for their rapidly growing industry, offsetting the slowdown in international trade growth. Such a modification of the neoliberal modernization model does not mean a turn to the neo-Keynesian model with its high protectionism. The model modification leads to a decrease in the export orientation of these countries to the level that is inherent in large developed economies, for which the domestic market has been and remains the main one.

Russia: Attempts to Overcome Economic Backwardness

Models of economic modernization of less developed countries have evolved. This happened in many countries, but especially radically—in Russia, where modernization was carried out in waves, although not in all spheres.

The first wave of modernization in Russia was undertaken by Peter the Great, but it was not so much economic as cultural, and besides, it was not accompanied by active political and social modernization—absolutist tsarism and serfdom has become even stronger.

The second attempt was made after the abolition of serfdom in 1861; it lasted for several decades, but in the economic sphere it did not end with the complete transition from the traditional system to the capitalist one—communal and landlord property continued to dominate in agriculture, then the main branch of the economy. In the political sphere, the transition to a larger but limited democracy took place only after 1905. Nevertheless, the rapid (by those standards) economic growth that began in the mid-1880s amounted to 1.75% on average per person per year over the next 30 years (versus 1.6% in the West). As a result, Russia was slowly but steadily reducing its lag in terms of economic development.

The slow progress of modernization was one of the reasons to change the political regime in 1917. The third attempt at economic modernization was made within the framework of the socialist (centrally planned) system. It was partially successful since in 1928–1955 (excluding 1941–1950) the average annual rate of economic growth per capita was 4.1%. However, the gradual economic recession (in the 1970s and 1980s, per capita growth rates began to lag behind the rates of some developed countries) and the slow change in other development indicators demonstrated the limited possibilities of modernization within the socialist economic system with its weak private property, low consumer sovereignty and lack of freedom of entrepreneurship.

The transition to a market economy that began in the late 1980s could generate a new wave of modernization using market system opportunities. But it turned into an economic disaster in the 1990s (GDP declined by 44%), although good economic growth rates in the next decade (GDP grew by 60% mainly due to the good situation in the world markets for fuel, raw materials and semifinished products) helped to restore the economy after the disaster. In general, since end-1990s, private property began to prevail in the Russian economy and the freedom of economic agents increased dramatically.

However, subsequent years demonstrated that this wave of modernization was incomplete (see chapter “[Russia and Other Post-Soviet Economies](#)”). We should also add that the sluggish economic modernization that has been going on in the last 15 years has not been accompanied by political modernization. The country has sharply reduced the pace of economic growth (the average annual growth rate of GDP per capita was less than 1.5% in 2011–2021) and, according to institutionalists, has fallen into “the middle-income trap”. This term refers to a situation when a country with a middle level of economic development greatly reduces the pace of economic growth due to a decrease in investment rate as well as weak diversification of the economy. To overcome this situation, a country should switch to an innovative path of development (primarily through the development of human capital and infrastructure), as well as actively cultivate the internal and external markets. However, this transition was prevented by Russia’s military operation in Ukraine, which caused a flood of Western economic and political sanctions that sharply reduced the inflow of capital and knowledge from developed countries.

4 Conclusions

1. The key global problem for less developed countries is their economic backwardness. Economic backwardness means that a country is at a lower stage (or step) compared to other, more developed countries. This leads primarily to a shortage of capital and knowledge.
2. Economic modernization implies the transition to a higher stage of development or a higher step within the stage. For less developed countries, economic modernization means overcoming their backwardness, and in practice, it looks like an attempt to catch up with developed economies.
3. The most successful of the modernization models was the Japanese one and the models of the newly developed Asian economies that copied it. This model owes its success to the combination of neo-Keynesian and neoliberal elements—the state actively regulated the economy (it was not at the expense of large government expenditure and a large public sector), growth of private property, low taxes and substantial freedom of economic agents. Another reason for the success of the model is the full encouragement of exports, which led to a constant increase in the global competitiveness of the national economy. Finally, all this was accompanied by great attention to the dissemination of knowledge.
4. Economic modernization is also underway in developed countries. It means, first, solving the problems that are characteristic of the post-industrial stage of development—these are the problems of human capital, innovation, financial stability and global competitiveness.

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Global Challenges: Social Problems



Larissa Kapitsa and Maria Apanovich

Abstract The chapter focuses on such global social problems as mass poverty in less developed economies, social differentiation and demographic problem both in developed and less developed economies, and non-observed economy in both groups of countries.

1 Introduction

Economic life is based on the need to satisfy people's desire for a better life. The lack of basic goods and services and their uneven distribution give rise to the problems of poverty and social stratification, and the violation of the social justice norms pushes millions of people into a shadow and/or illegal economy. These problems are often compounded by demographic challenges.

2 Mass Poverty Problem

Poverty is usually understood as a condition characterised by a chronic deficit of monetary income to meet the basic needs of an individual or household. There are two main types of poverty.

Absolute poverty means the lack of income to meet a person's physiological needs. In turn, physiological needs are the needs for primary necessities, i.e., food, clothing, shelter, and, in some instances, basic services. To put it another way, this is a minimum set of food, non-food goods and services necessary to preserve human

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life and to ensure his or her vital activity necessary for survival, i.e. a minimum consumer basket.

It is obvious that the content and the size of such a basket depends on the climate (in a cold climate, you need more calories, clothing and fuel to keep yourself warm), cultural characteristics (for example, adherence to a particular diet), and the achieved standard of living. Therefore, the set of basic goods included in the minimum consumer basket will vary by country and region of the world.

As for cross-country comparisons, the World Bank does it easier - it establishes a single absolute poverty line at \$1.90 per day at purchasing power parity, which can be considered as the minimum amount required for food (in calories). On this basis, it is calculated which part of the population of a particular country and region of the world has an income below this subsistence minimum.

The main causes of absolute poverty include a low level of economic development, a significant gap between the rates of economic and demographic growth and, as a result, the inability of the national economy to employ a rapidly growing population and, finally, extremely unequal distribution of assets among the population.

Absolute poverty, covering a large or predominant part of the country's population, is often referred to as "mass poverty". It is characteristic of the most backward regions of the world, where the vast majority of the world's absolute poor are concentrated. Most of them are concentrated in sub-Saharan Africa, which accounts for almost 66%, or 458 million people, and in South Asia with 20% of the world absolute poor, or 140 million people. At the same time, the countries of East Asia and Oceania account for less than 3% of the world's absolute poor, or 19 million people, which indicates the impressive results achieved by the countries of this region (primarily China) in their fight against mass poverty there.

Compared to 2010, the total number of absolutely poor in the world has almost halved, primarily due to East Asia, and amounted to 698 million people in 2021. The exception was sub-Saharan Africa, as well as the countries of the Middle East and North Africa, mainly due to insufficient economic growth relative to demographic population growth. A significant decrease in the level of global absolute poverty was achieved at the expense of the three largest countries in terms of population—India, Brazil, and above all, China.

Relative poverty is a comparative category and means a condition in which, due to a lack of economic resources, an individual or a family is unable to achieve and maintain a socially acceptable lifestyle. To assess the level of relative poverty, the proportion of the population whose incomes are below 50% or 60% of the median income in the country is usually determined.

In recent decades, the understanding of the nature of absolute poverty has been significantly expanded. According to the Nobel Prize winner, Amartya Sen (b. 1933), absolutely poor people, in addition to a lack of material resources, often suffer from a lack of opportunities (knowledge, health, connections, etc.) *necessary* to generate their income. This approach to poverty is at the heart of the Multidimensional Poverty Index, which was developed by the UN Development Programme (UNDP). It is based on the consumption of goods, rather than the size of monetary income, as with the World Bank.

Table 1 Scope of multidimensional and absolute poverty in less developed economies, 2009–2020

Regions	Multidimensional Poverty Index	Population in severe multidimensional poverty, %	Population vulnerable to multidimensional poverty, %	Population living below income poverty line PPP \$1.90 a day
Arab States	0.071	6.5	8.9	4.5
East Asia and the Pacific	0.023	1.0	14.5	1.2
Europe and Central Asia	0.004	0.1	3.2	1.1
Latin America and the Caribbean	0.030	1.8	7.3	4.2
South Asia	0.131	10.2	18.3	19.2
Sub-Saharan Africa	0.286	30.8	18.8	43.7
Developing countries, total	0.105	9.5	15.2	14.8

Source UNDP (2021)

The multidimensional poverty index consists of ten indicators divided into three equally weighted dimensions: health care (nutrition, infant mortality), education (number of years at school, number of school-age children in the family going to school), and the standard of living (availability of electricity, clean drinking water, normal sewage, floor, technical means of transportation and communication, use of firewood and manure for cooking). A household is multidimensionally poor if it is subjected to the deprivation of at least two of the ten indicators, and the multidimensional poverty index itself represents the proportion of the population experiencing multidimensional poverty; adjusted for the intensity of deprivation (Table 1). According to the UNDP, in 2019, the total number of multidimensional poor persons in developing countries was approximately 1287.5 million people.

3 Problem of Social Differentiation

Social stratification, i.e. differentiation of the population by social status and income, is a universal phenomenon inherent in both developed and less developed countries. Economists are primarily interested in the differentiation of people's incomes.

According to the neoclassical theory, income distribution reflects the distribution of goods produced according to the contribution of each economic resource (or factor of production). But the majority of households in the market system owns only such factors as labour, knowledge, and small capital, while the main mass of capital, entrepreneurial abilities, and natural resources belong to a small fraction of the households.

There are numerous other reasons for income differentiation. Some of them lie in the individuals themselves—these are primarily differences in diligence, abilities, experience, health, entrepreneurship, and luck. In most cases, the employees endowed with such positive characteristics earn more than less endowed individuals. At the same time, some individuals and entire groups (the so-called vulnerable groups of the population) cannot provide for themselves at all—these are children and adolescents, students, the elderly, the sick and disabled, and single mothers.

Other causes of income inequality lie in the attitude of society towards individuals. This is primarily discrimination, i.e. inequality of individuals in society for social, political, gender, ethnic, religious, and other reasons. For example, discrimination against representatives of lower castes and outcastes, who make up tens of millions of people, continues in India (although castes have been banned since 1950).

The reasons for the income stratification may also be the policy of the state. In particular, regressive taxation often leads to an uneven distribution of the tax burden among social groups, and the lack of social protection of the population (which is typical for poor countries) aggravates inequality and increases social tension. Corruption among civil servants can also contribute to the growth of income inequality, as it is a tool for the informal redistribution of income from the bribe giver to the bribe recipient.

Social stratification becomes a problem when it is characterised by a growing polarisation of income. First, income polarisation is holding back economic growth. The poor population, as a rule, consumes local goods and services, while the elites prefer imported luxury goods. In the conditions of income polarisation, the demand for local goods decreases, which, in turn, curtails the domestic production of goods and services, and hence sources of labour income. Secondly, income polarisation can increase social tension and (or) provoke an open confrontation, especially when it is accompanied by social marginalisation, which manifests itself in an increase in social deviance (aggression, alcoholism, drug addiction, crime, etc.) and “social exclusion” in various forms, for example, homelessness.

To measure the income stratification (if there is no data on income, then on expenses, although in the latter case the stratification is usually lower), a Gini (index) and a decile (or quintile) coefficients are used. The maximum value of the Gini coefficient (index) equal to one (or 100%) means absolute inequality, and the minimum value equal to zero means absolute equality. The decile coefficient is the ratio of the income of 10% of the most affluent and the income of 10% of the least affluent households (individuals) (sometimes quintiles of 20% are used instead of deciles, i.e. households (individuals) are divided into five income groups), reflects the structure and depth of the stratification of the population by income based on the logic absolute equality, i.e. when 10% of the households (individuals) should account for 10% of the total income of the nation.

According to the World Bank and the OECD, income inequality is the highest in Latin America and Africa. In developed countries, except the USA, it is not so significant, and the most egalitarian countries are those of Northern Europe (Table 2).

Table 2 Stratification of the population by income in some countries of the world in 2015–2020

Country	Gini Index	Quintile Ratio	Decile Ratio
<i>Africa</i>			
Angola	51.30	8.94	15.5
Egypt	31.50	4.55	7.1
South Africa	63.00	7.07	26.5
<i>Asia</i>			
China	38.20	10.9	
India	35.70	6.65	10.8
Indonesia	37.00	7.71	12.1
Iran	40.90	7.61	13.0
Malaysia	41.10	8.12	13.7
Pakistan	29.60	4.85	7.0
Thailand	35.00	6.08	15.0
<i>Latin America</i>			
Brazil	48.90	17.6	43.0
Chile	44.90	10.5	19.7
Columbia	54.20	16.2	34.0
Mexico	45.40	11.2	22.0
<i>Eastern Europe</i>			
Hungary	30.00	4.35	7.2
Poland	30.20	4.57	6.7
Romania	34.80	7.25	14.0
Russia	35.30	...	15.4
Czechia	25.30	3.32	4.8
<i>Central Asia</i>			
Kazakhstan	27.80	3.82	3.1
Tajikistan	34.0	5.61	9
<i>Developed Economies</i>			
Canada	33.30	17.1	8.4
France	32.40	4.44	7.2
Germany	31.70	5.05	7.2
Italy	35.20	6.06	12.6
Japan	32.90	6.22	10.8
Sweden	29.30	4.13	6.4
UK	35.10	6.18	11.5
USA	41.50	16.7	17.5

Sources WIDER data-bank; The World Bank Open Data; OECD Statistical data base

According to the World Inequality Lab (2022), in 2021, the top decile of the world population possessed 76% of the world wealth and appropriated 52% of all income in the world. The next 40% of the population had 22% of wealth and received 39.5% of income, and the bottom 50% had 21% of the world's wealth at their disposal and received 8.5% of the world's income. The highest level of income stratification is observed in the Near and Middle East (where the top 10% of the population receive 58% of income) and Latin America (the top decile accounts for 55% of income), while the lowest is in Europe (36%).

The causes of inequality vary by country and region. Here are some of the main reasons for the growth of income differentiation in transition economies: the consequences of systemic reforms, which were accompanied by the redistribution of assets; the bankruptcy of many enterprises; the growing unemployment and wage differentiation (between and within industries); the reduction of social spending, etc. At the same time, in some countries of Eastern and Central Europe (for example, Poland, the Czech Republic, and Hungary), the distribution of income has not changed radically compared to the pre-reform period, whereas in post-Soviet countries the picture was the opposite. In the first group of countries, this is due to greater success in systemic reforms, a smaller economic downturn during the transition period, and a focus on EU social models.

In developed countries, inequality grew primarily since the change in proportions of income distribution between labour and capital in the production of GDP and national income. This remained virtually constant during the twentieth century and began to change in the 1980s. According to the ILO, the share of labour in the national income of developed countries fell from 75% in the mid-1970s to 65% on the eve of the 2008 economic crisis and continued to decline in subsequent years. In turn, this is a consequence of the deepening gap between labour productivity growth and compensation for labour (Fig. 1), on the one hand, and strengthening the difference in salary levels of different categories of employees (primarily between highly-skilled and low-skilled), on the other.

However, it should be noted that social stratification in most developed countries is restrained with the help of various public social security programs that have a

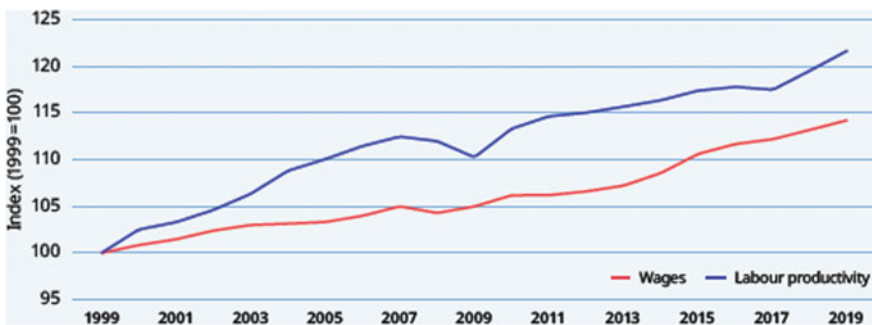


Fig. 1 Dynamics of growth of average wages and labour productivity in 52 high-income countries, 1999–2019 (Source ILO [2021])

redistributive effect, as well as tax policy instruments (see chapter “[Resources of World Economy: Human Capital](#)”).

4 Demographic Problem

The population has been changing quite slowly for most of the history of mankind. In addition, the growth of the world population was extremely heterogeneous in time and space.

The first significant milestone that can be identified in this process was the sharp acceleration of the population growth of the European continent in the eighteenth–nineteenth century, associated with the rapid growth of its economy and the improvement of living conditions (including those affecting life expectancy). For example, between 1700 and 1913, the population of European countries grew almost 4 times, and the population of other countries where Europeans actively emigrated grew even faster (first, these were the countries of the American continent). However, over the next hundred years, the growth rate of Europe’s population declined markedly, as the continent entered the next stage of demographic transition (Maddison, 2008).

The traditional society (including medieval Europe) was characterised by high fertility and mortality, which could fluctuate markedly under the influence of crisis factors (famine, epidemics, wars), but in general, both of these levels were close and hence slowed down the population growth. At the next phase of the demographic transition, under the influence of the modernisation process, an accelerating decrease in mortality began while maintaining or slowly decreasing the birth rate. As a result, the population growth rate increased sharply—up to 2% or more per year. This phenomenon was called a demographic explosion (as in Europe in the eighteenth–nineteenth century). The next stage is characterised by an accelerated decline in the birth rate and a continuing decline in mortality, as a result, population growth slowed down. At this stage, society is characterised by low mortality and fertility rates, and, as a result, low and even negative natural growth. According to this periodisation, economically developed countries have already completed the demographic transition, some less developed countries are finishing the second stage, and the other part is at the third stage, that is, they are coming out of the demographic explosion and finishing the demographic transition (Fig. 2).

The age composition of the population of any country is influenced by the age–sex structure, as well as natural growth due to migration. The figure in the form of a pyramid allows you to understand how the processes of fertility, mortality, and migration affect the age composition (Fig. 3). Traditionally, there are three types of reproduction: progressive (example of Angola), stationary (example of India), and regressive (example of the USA).

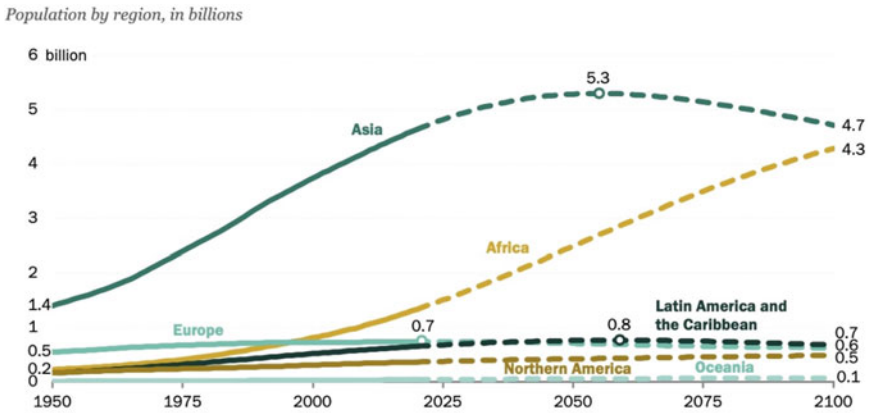
The main direction in the evolution of the age structure of the population in the modern world is demographic ageing, which is understood as an increase in the proportion of elderly people in the total population. To date, due to the increase in life expectancy and the retirement age, this limit is increasingly being pushed up to 65 years and beyond. In developed countries, the average life expectancy is

more than 75 years. Traditionally, this category of countries is facing the problem of ageing, which consists of an increasing number of the disabled population (and, consequently, the social and economic burden on the state) with relatively little or no growth in the working-age population.

In addition, families in developed countries strive for conscious reproduction, which reduces quantitative indicators. For an average European family, one or two children will be considered normal, considering all financial and other labour costs for their upbringing and education. According to the “second demographic transition” concept,¹ birth rate is declining worldwide due to the transformation within the family: women began to study, work outside the home, strive for self-realisation, and use modern contraceptives. There is no more need to give birth to more offspring with the development of medicine (i.e., with an increase in infant survival), and improved living conditions (i.e., longer life expectancy).

As a result, there is a problem of a shortage of the working-age population. For example, between 2000 and 2020, the population of Germany has changed little, and the share of the working-age population (15–64 years) has fallen from 67.9 to 64.4%, in Japan the population has even decreased, and the share of the working-age population has fallen even more radically—from 68.1 to 59.3%.²

Therefore, the second demographic transition can be followed by a “third demographic transition”³—this is, first of all, a change in the ethnic composition of the



Note: Data labels show projected peak population for each region: Europe (2021), Asia (2055) and Latin America and the Caribbean (2058). Regions follow United Nations definitions and may differ from other Pew Research Center reports. Source: United Nations Department of Economic and Social Affairs, Population Division, “World Population Prospects 2019.”

Fig. 2 World population growth and forecasts (Source Pew Research Centre)

¹ Lesthaeghe, R., & Van de Kaa, D. J. (1986). Two demographic transitions. *Population: Growth and decline*.

² OECD.Stat. <https://stats.oecd.org/Index.aspx?ThemeTreeId=9#>.

³ Coleman, D. (2006). Immigration and ethnic change in low-fertility countries: A third demographic transition. *Population and development review*.

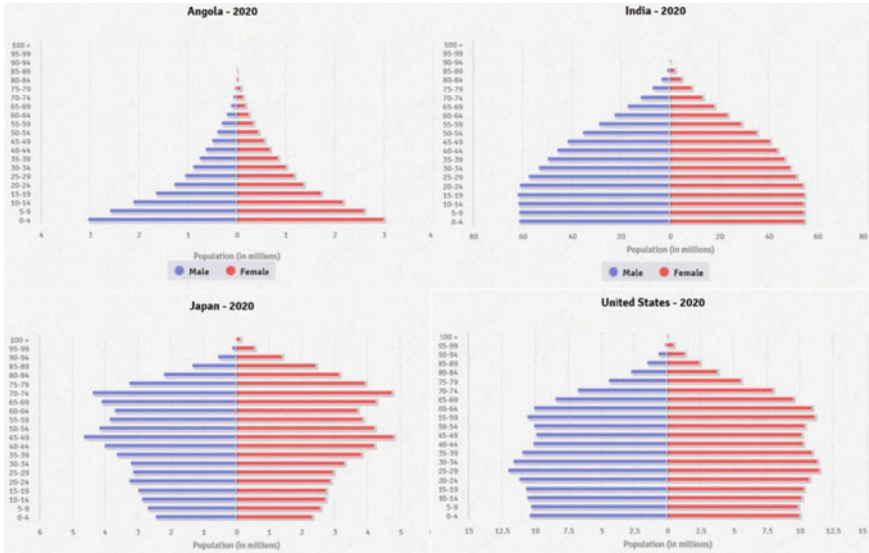


Fig. 3 Comparison of age-sex pyramids of 2020 (Source CIA Factbook, 2022)

population of the host countries as a result of immigration. The prerequisites for such immigration are created by the low birth rate in the host countries, whose population is not reproducible. They have to make up for the population decline by accepting numerous migrants. Unlike the “first”, the “third demographic transition” is not universal, it affects only developed countries with low fertility, and the changes caused by it are not symmetrical: the composition of the population of the developed world will become more like the population of the developing world, but not vice versa.

Important indicators of demographic ageing include the average and median age of the population. The average age of the population is defined as the arithmetic mean obtained after dividing the total number of person-years (the sum of the products of the values of age per population at this age) by the total population. The median age of the population is the median, which characterises the average age of the population in the population distribution series, and divides the entire population into two equal parts: one is younger than the median age, and the other is older than it. Over the past 30 years, this indicator has shifted from 26–27 years to 37–40 years worldwide, although the trends are not uniform—in Japan, for example, the median age is 48.4 years. Forecast trends suggest that it will continue to grow, especially in developed countries.⁴

The main factors that influence the change in fertility and mortality rates are as follows:

- Level of medical care;

⁴ DESA UN. (2019). World population prospects 2019. https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf.

- Quality of life;
- Religious factors and the cultural factor;
- Migration and re-emigration.

We should start with the level of medical services provided. It should be noted that the threshold of infant mortality has been lowered precisely thanks to the development of medicine, primarily in developed countries. However, the same factor affects the change in the number of births, since an increase in the survival rate of infants and children reduces the interest of individuals in a large number of births (high parity births), thereby plunging the society into a high birth rate. As soon as the spouses become almost completely confident that their offspring, especially their son, will outlive them, the probability of birth control increases. This may explain the trend towards fewer children in average families in developed countries.

The second critical indicator for the preservation or even growth of the population is the mortality rate caused by typical diseases (covid, AIDS, cancer, etc.). The development of treatment technology, as well as a higher life expectancy even after diseases, allows developed countries to maintain a relatively low level of adult mortality, and, consequently, the number of able-bodied people.

An equally important indicator is the quality of life, which is connected not only with medical care but also with access and opportunities in the labour market, life safety, the level of ecology in the place of residence and housing conditions. The whole complex of factors together forms a positive dynamic for life expectancy and reduces the number of births to minimum values.

Religious and other cultural traditions that are present in society can act as an additional factor in restraining or stimulating fertility.

Population indicators in the country can also be equalised due to migration. For developed countries, this is migration primarily from less developed countries with their high birth rates, which creates an excess of labour (Table 3).

Table 3 Upcoming life expectancy and fertility in some of the world’s leading economies in 2020

	Indicator	
	upcoming life expectancy, years	birth rate per one thousand people
USA	7.9	11.9
Germany	81.4	9.5
Japan	84.7	7.2
China	77.1	11.3
India	69.9	17.4
Brazil	76.1	13.5
South Africa	64.4	19.8
Russia	72.5	12.1

Sources World Bank Open Data

Table 4 Indicators of international population migration

	Indicator						
	1995	2000	2005	2010	2015	2019	2021
The absolute number of international migrants, million people	174	192	221	249	258	272	281
The share of international migrants in the global population, %	2.8	2.9	3.2	3.4	3.4	3.5	3.6

Source IOM (2022)

International migration is also accelerated by other factors, primarily military conflicts, epidemics, and climate change. According to the Displaced Persons Monitoring Centre, out of the total number of migrants who settled abroad by 2019, there were more than 45 million internally displaced persons and 25 million refugees, as well as more than 24 million people who had to change their place of residence due to climatic reasons.

In total, there were 281 million migrants in the world in 2021, if we include those living outside their country of birth (Table 4). This is almost 3.6% of the total population of the Earth. Labour migration traditionally prevails among migrants, which will be discussed in chapter “International Trade in Goods and Services”. The gender proportion of 2021 remains in favour of men (52 and 48% of women, respectively).

As of 2021, India (18 million people) occupies the leading position among the countries of origin of these 281 million international migrants, followed by Mexico (11 million). The most attractive country for migration traditionally is the United States (more than 50 million), followed by Germany and Saudi Arabia. An important position in this list is occupied by Russia with its large number of Russians and other people from CIS countries who have moved to it (about 10 million) and its residents who move abroad (also about 10 million), mainly to the West.

In conclusion, we present the forecast of the UN Department of Economic and Social Affairs (UN DESA) (Table 5).

5 Problem of Non-Observed Economy

When calculating the country’s GDP, it includes a part of the economy that is called the non-observed economy in SNA 2008 (in previous versions of the SNA, it was called shadow economy). The unobserved economy covers economic activity in the country that is not officially registered by authorised bodies, and includes the following components (sectors):

1. The informal economy, which works not so much for the market as for itself (mainly agricultural products of households and construction using its resources), and does not keep accounting, because it is carried out by households, not firms;

Table 5 Forecast of the world population size in the twenty-first century

	Population, million people		
	Low scenario	Medium scenario	High scenario
World			
2035	8421.6	8892.7	9364.5
2050	8752.8	9771.8	10,849.1
2100	7275.5	11,184.4	16,521.2
Developed regions			
2035	1232.2	1295.0	1357.9
2050	1173.1	1298.1	1428.7
2100	848.2	1285.0	1877.9
Developing regions			
2035	7189.4	7597.7	8006.6
2050	7579.7	8473.7	9420.4
2100	6427.3	9899.4	14,643.2

Source UN DESA

2. The hidden (underground, shadow) economy that produces legally permitted goods and services, but is hidden or downplayed to evade taxes, social contributions, labour protection regulations, compliance with sanitary standards, and obtaining licences. Examples may be unregistered shipments of goods at legally operating enterprises, renting or repairing housing without a contract, work without a contract;
3. The illegal economic activity (illegal economy), which is illegal because it covers the production and sale of those types of goods and services that are prohibited by the legislation of the country or require special permission. First, this includes the production and sale of drugs, prostitution, smuggling, weapons production, and sale (bypassing the established rules). Illegal economic activities often include redistributive operations prohibited by law—embezzlement, robbery, racketeering (extortion), fraud and, of course, bribery (corruption).

The first two of the three elements (sectors) of the unobserved economy are included in the SNA and, accordingly, in the country's GDP. To determine the size of these sectors, estimates are used, which are based on:

- The intersectoral balance sheet (for example, to identify the number of hidden wages);
- The sample surveys (for example, through anonymous questioning of some students and schoolchildren about tuition fees);
- The analogies (the revealed sizes of the informal and hidden economy in one region can be applied with amendments to similar regions);
- The indirect indicators (for example, data on the area of household and suburban plots in combination with data on average yields allow us to identify the approximate size of informal agricultural production on these plots combined);
- The expert assessments.

The third element of the unobserved economy—illegal economic activity, is not included in the GDP. Calculations of its size are of an estimated nature, especially since illegal redistributive operations cannot be attributed to the production of GDP at all. However, these estimates are used for international comparisons, but mainly for certain types of redistributive operations. When assessing the degree of corruption, an index calculated by the international non-governmental organisation Transparency International based on a survey of experts is used—this is the corruption perception index (how entrepreneurs and experts assess the extent of corruption in the country). The analysis of the unobserved economy is different for all its three elements (sectors).

For example, the informal sector is most often viewed as remnants of the traditional economy in the market economy. Indeed, there is a high correlation between the level of development of a country and the size of its existing non-financial sector. Therefore, a still large share of the informal economy in most developing countries indicates a low level of economic development and the existence of non-market structures there.

The hidden (underground, shadow) economy as a whole undermines the financial base of the state and narrows its possibilities of financing the development and regulation of economic activity and maintaining social peace. The neo-institutional theory considers the hidden economy as a consequence of the imperfection of institutions, which generates high transaction costs for businesses to conduct operations openly—it is difficult to start a business; taxes are high, economic legislation is complicated, and many institutions are corrupt. According to Peruvian economist Hernando de Soto (b. 1941), many of these costs of doing business are generated by an inherent bureaucracy, primarily in less developed countries with their inefficient state apparatus. Therefore, some researchers believe that shadow economic activity in some cases has a positive effect, in particular by providing an opportunity for additional earnings, especially in conditions of recession and (or) stagnation of the formal economy and depreciation of social benefits. In many developing countries, informal economic employment is the only real source of income for the mass of low-skilled labour. They are also noticeable in developed economies (Table 6).

When studying illegal economic activity, the neoclassical theory finds that it (like hidden economic activity) is generated by the rationality of the economic agents' behaviour. G. Becker stated that “the premise of rationality assumes that some individuals become criminals because, taking into account the likelihood of capture and conviction, as well as the severity of punishment, the financial and other benefits from crimes turn out to be comparable for them with the income from legal activities”.⁵ We should also add that the propensity to conduct criminal activity is generated by social (primarily income differentiation) and psychological (some people have criminal tendencies from birth) reasons.

Traditionally, special attention in the research of the illegal economy is paid to corruption, i.e. abuse of power in personal interests. The neoclassical theory also considers corruption as a product of rational behaviour of economic agents

⁵ Becker, G. S. (1976). *The economic approach to human behaviour* (Vol. 803). University of Chicago Press.

Table 6 The main reasons for the growth of the shadow economy in developed countries

A factor contributing to the growth of the shadow economy	Degree of impact	
	(a) (%)	(b) (%)
The growth of the tax burden and the size of the social security contribution	35–38	45–52
Quality of public institutions	10–12	12–17
Social transfers	5–7	7–9
Labour market regulation	7–9	7–9
Public services	5–7	7–9
Taxpayer Morals	22–25	–
The influence of all factors	84–98	78–96

Source Schneider, F. (2012, March). *The Shadow Economy and Work in the Shadow: What Do We (Not) Know?* IZA DP No. 6423. Institute for the Study of Labor

Notes (a)—the average values obtained in studies for 12 countries; (b)—the average values obtained in studies for 22 countries

in conditions of limited resources: households and firms may dominate access to economic resources, but bureaucracy often dominates access to political (administrative) resources, especially in conditions of weak civil society. One of the analysis tools based on this theoretical scheme can be the “principal-agent” model, in which the state acting as the principal appoints agents, i.e. officials who can use their position in their interests in a poorly developed civil society.

The neo-institutional theory considers corruption as opportunistic behaviour of officials, which occurs for two reasons: because of the strong asymmetry of information between officials and other economic agents (due to the excessive presence of the state in the economy) and the seizure of the state apparatus by interest groups (when the state is seized, the state apparatus dominates over business and society, for which a bribe is one of the forms of charging them a political rent from business and society). Neo-institutionalists point out that corruption generates a lot of negative consequences—rent-oriented behaviour increases among firms, bribes become a noticeable element of the cost of goods and services (firms include bribes paid to officials in the price of goods), bureaucrats support state orders and state projects that are ineffective for the country (but not for them), the effectiveness of the macroeconomic policy decreases (state funds are plundered and the instructions of the country’s leadership are ignored by the bureaucracy), part of the bribes leaves the country in the form of capital flight (as a result, gross accumulation decreases), social injustice and distrust of the state apparatus increases.

At the same time, corruption can partly act as a way to mitigate the negative impact of inefficient institutions, and the survival of businesses, especially small ones, in abnormal conditions (“give a bribe and live normally”), although the inefficiency of these institutions is often explained by the desire to receive bribes through artificial inefficiency. But in general, corruption is a brake on economic development, and in modern Russia, with its seizure of the state by bureaucracy and oligarchs, it is probably one of the main ones. Such a “government fail” cannot but affect the

Table 7 Size and structure of the global “criminal economy”

Type of transnational criminal activity	Annual turnover estimate, \$
Counterfeiting and piracy	0.92–1.13 trillion
Drug distribution	426–652 billion
Illegal logging	52–157 billion
Human trafficking	150.2 billion
Illegal mining	12–48 billion
Illegal fishing	15.5–36.4 billion
Illegal trade in wild animals and rare plants	5–23 billion
Crude oil theft	5.2–11.9 billion
Illicit trade in small arms and light weapons	1.7–3.5 billion
Human organ trafficking	840 million–1.7 billion
Generally	1.6–2.2 trillion

Source May, S. (2017, March). Transnational Crime and the Developing World, *Global Financial Integrity*

prospects to build a developed economy, one of the characteristics of which is low corruption.

In international economic relations, different elements of the unobserved economy participate in different ways. The informal economy is the least actively involved in them because it works for itself, not for the market.

The hidden economy is particularly active in the international export of capital and labour. For example, the unregistered export of capital in the world amounts to hundreds of billions of dollars annually (as a result, the registered export of capital in the whole world is much less than the registered import).

If we consider international labour migration, the number of illegal immigrants living in the United States alone is estimated at several million people.

The illegal economy is especially noticeable in world trade. Illegal export and import are mainly carried out by criminal groups with international connections, therefore operations involving them are called the global “criminal economy”. Table 7 shows its scale (excluding redistributive operations and with the inclusion of a partially hidden economy).

6 Conclusions

1. Poverty is a major global problem. Absolute poverty means a lack of income to meet the primary human needs, i.e. the need for necessities. Relative poverty is a comparative category and means a condition in which, due to a lack

of economic resources, an individual or a family cannot maintain a socially acceptable lifestyle.

2. Social stratification, i.e. differentiation of the population by social status and income, is a problem inherent in both developed and less developed countries. Economists are primarily interested in the differentiation of people's incomes. The distribution of income reflects the distribution of goods produced following the contribution of each economic resource. Another reason for income differentiation lies in the individuals themselves. An important cause of income inequality is discrimination, i.e. inequality of individuals in society for various reasons.
3. The problems of demography and international migration are connected—the shortage of labour in some countries pushes the labour migration to them from those countries where there is an excess of it. International migration is also accelerated by other factors, primarily military conflicts, epidemics, and climate change.
4. When calculating the volume of a country's GDP, we should consider that it includes a part of the economy that is called the unobservable. The system of national accounts of the 2008 version (in previous versions of the SNA it was called the shadow economy), includes the following components: the informal economy, which does not keep accounting, because it is carried out mainly by households, and not by firms; a hidden (shadow) economy that produces goods and services permitted by law, but is hidden or downplayed for tax evasion, etc.; the illegal economic activity (illegal economy) is illegal because it covers the production and sale of those types of goods and services that are prohibited by law. The first two of the three elements (sectors) of the unobserved economy are included in the SNA and, accordingly, in the country's GDP. Their value usually correlates with the country's development.

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Global Business Environment: Countries and Regions

Developed Economies as a Group



Alexander Bulatov

Abstract Based on three centres of developed economies—USMCA, EU, and developed Asia—the major trends, problems, and challenges of developed countries are analysed. The chapter also gives an analysis of the real, financial, external, and social sectors of the developed economies as a group.

1 Introduction

Developed countries are still the core of the world economy, although only 1/7 of mankind lives there. About 42% of the world GDP is produced here and a level of economic, political, social and cultural development has been achieved that is a benchmark for most other countries. The role of developed countries in the global economy is even more significant; they account for more than 60% of world trade, about half of world capital exports, and the vast majority of knowledge exports, they are the place of attraction for the bulk of migrants in the world.

2 Three Centres of Developed Economies

Within the group of developed countries, three centres can be distinguished; the so-called triad—the USMCA, the EU, and the developed countries of Asia. At the beginning of 2021, these centres, according to our estimate, accounted for the following shares of the world GDP by PPP—17% for the USMCA (excluding Mexico), 14% for the EU, and 7% for developed Asian countries. The countries included in the triad demonstrate different models (systems) of modern capitalism and different approaches to globalisation (especially to regional economic integration).

The USMCA and the EU unite countries within the framework of these integration associations. They also have their economic periphery, consisting of countries that

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are economically and politically closely related to them: for the USMCA, this is primarily part of Latin American countries, and for the EU, this is part of the countries of the Near and Middle East (primarily the Mediterranean ones) and most of African countries.

The situation is different with the third centre of the triad—the developed countries here are not united into a single regional integration association (see chapter “[World Economy Major Trends: International Economic Integration](#)”) and lack an economic periphery. They have not created a single integration grouping because mutual ties do not prevail in their external economic relations, since in this region it is not the developed countries (as in North America and Western and Central Eastern Europe) but the less developed ones that dominate in terms of economic weight, particularly China. For example, in 2021, Japan, the largest developed economy in this region, had 23% of its merchandise exports going to China (13.5% in 2005), 16%—to the USA (23% in 2005), 12%—to the EU (15% in 2005), and the rest of the developed countries of Asia, as well as Australia and New Zealand, accounted for only 18% (27% in 2005). If China turns into a developed economy in the future, then it will lead this triad centre, attracting flows of goods, capital and knowledge from other economies of the region.

3 Major Trends, Problems, and Challenges in Developed Economies

The Fourth Industrial Revolution is one of the leading trends in developed economies. Their expenditures on science, innovation, and education are growing (see chapter “[World Economy and International Business](#)”), but the effectiveness of all these expenditures is insufficient. This is confirmed by the fact that labour productivity in developed economies, even new industrial ones (Republic of Korea), grew more slowly in the last decade than in the preceding one, and in the best case (Germany)—at the same pace (Table 1).

Table 1 Index of GDP growth per hour worked, constant prices, 2015 = 100

	1995	2000	2005	2010	2015	2020	2021
USA	70.2	78.9	89.5	98.2	100.0	106.3	n/a
EU-27	76.2	84.4	91.1	94.9	100.0	104.6	104.8
Germany	78.8	87.1	93.0	94.9	100.0	104.0	104.9
France	79.8	87.5	94.1	95.7	100.0	103.6	102.8
Japan	75.7	84.5	92.1	94.1	100.0	103.9	n/a
Korea, Rep. of	46.7	59.1	73.8	86.8	100.0	109.1	n/a

Source OECD.Stat. <https://stats.oecd.org/#>

But over the 1995–2020 period in the USA, expenditure on R&D has increased from 2.41 to 3.45% of GDP, from 1.56 to 2.20% in the EU, from 2.56 to 3.27% in Japan, from 2.16 to record 4.81% in the Republic of Korea. It can be cautiously concluded that the effectiveness of these expenditures if they are measured with the growth of labour productivity, decreases and does not justify the hopes of developed countries to accelerate their economic growth through R&D and subsequent innovations on this basis. As a result, the share of firms engaged in innovation activities decreased between 2010 and 2019 in the USA, Germany, and Japan and only slightly increased in France and Korea. So far, the emphasis of developed countries on R&D and innovation as the main engine of their economic growth allows them only to maintain this growth, rather than accelerate it.

Globalisation continues to be the leading trend in the economy of developed countries, but after the 2007/2008 crisis, its pace became lower than before the crisis following the export quota of developed countries. This, in turn, slows down the GDP growth in developed countries which are the main beneficiaries of the global economy (Arestis, Sawyer 2022).

As can be seen from Table 2, in the last decade, especially in its second half, the growth of the export quota in developed countries slowed down, and even stopped in some countries (USA) or became negative (Korea). It is worth noting that this has nothing to do with the COVID-19 pandemic, which mainly affected the 2020/2021 results. We are talking about the growing orientation of developed countries to their internal markets or the markets of their integration associations. This is confirmed by statistics for the EU, in which the export quota doubled during the period under review. However, a large majority of EU countries traded more within the EU internal market than with countries outside the EU. For example, in 2020 Germany traded 52% of its merchandise exports and 44% of service exports inside the EU. As to France, the correspondent figures were 53 and 45%.

Developed countries were the initiators of the global campaign for the preservation of the environment (which is not surprising for countries that have passed the stage of industrialisation with its high burden on the environment) (Barbier, Burgess

Table 2 Exports of goods and services, % of GDP

	1990	1995	2000	2005	2010	2015	2018	2020
USA	9.3	10.6	10.7	10.0	12.4	12.4	12.3	10.1
EU-27	25.3	28.3	35.7	37.4	40.3	47.1	49.2	46.6
Germany	22.8	22.0	30.8	38.1	42.6	46.9	47.3	43.4
France	21.0	22.6	28.6	27.0	26.8	30.9	31.7	27.9
Japan	10.2	8.8	10.5	13.8	14.9	17.4	18.3	15.5
Korea, Rep. of SDG	25.0	25.7	33.9	35.5	47.1	43.3	41.7	36.4

Source World Bank Open Data. <https://databank.worldbank.org/reports.aspx?source=2&series=NE.EXP>

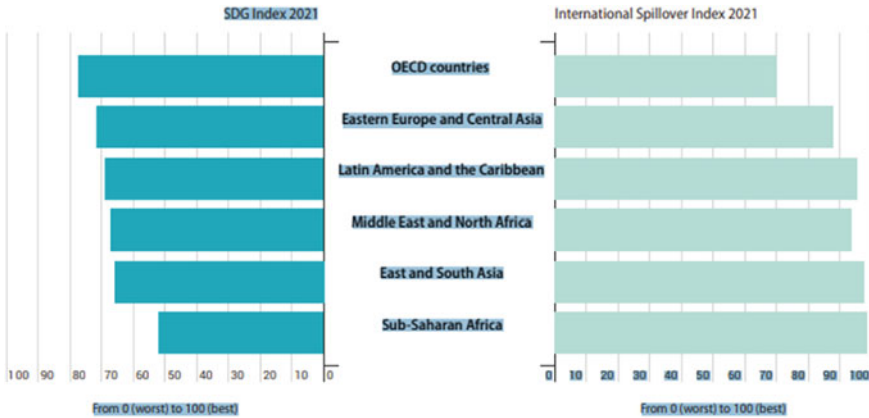


Fig. 1 Regional average SDG Index score against International Spillover Index score (Source Sustainable Development Report 2021. Cambridge: Cambridge University Press <https://s3.amazonaws.com/sustainabledevelopment.report/2021/2021-sustainable-development-report.pdf>)

2021). They actively participated in the development of the Agenda 2030 plan (see chapter “World Economy Major Trends: New Normal, The Forth Industrial Revolution, Globalization, Sustainable Development”) and companies from these countries are most actively using environmental, social, and governance (ESG) approaches in their activities. As a result, developed countries are leading in the SDG Index.

Nevertheless, it should be borne in mind that it is this group of countries that may have the most negative impact on the environment in other countries. This is evidenced by the Spillover Index, which reflects the impact on the ESG of other countries through excessive consumption of their resources, cross-border pollution, organised crime and corruption, arms trade, etc. Comparing these indices, we will see the following picture (Fig. 1).

The new normality opens up new horizons for the economies of developed countries, but also new risks. The COVID-19 crisis particularly caused a stronger reduction in GDP here than in most less developed economies. A more recent example may be the warfare in Ukraine, which has become a geopolitical challenge for a group of developed countries and to which it has responded with sanctions against Russia. However, these numerous sanctions have entailed economic risks not only for Russia but also for the developed countries themselves, primarily the European ones (risks from the loss of a large traditional foreign market, reorientation to other energy suppliers, increasing their military expenditure, etc.).

Finally, the GDP rates of developed countries are also affected by the ageing of their population, which limits the inflow of labour and savings into the economy (older people not only do not work but also spend their savings, without turning them into investment).

As a result, the IMF forecasts lower rates of economic growth in developed countries than in the previous two decades (Table 3).

Table 3 Developed countries: GDP growth rates, %

Economies	Average 2004–2013	2015	2017	2019	2020	2021	2023 ^a	2027 ^a
World	4.1	3.4	3.7	2.9	−3.1	6.0	2.7	3.2
Advanced economies	1.6	2.3	2.5	1.7	−4.5	5.2	1.1	1.7
USA	1.8	2.7	2.3	2.3	−3.4	5.7	1.0	1.9
Euro Area	0.9	2.0	2.6	1.6	−6.4	5.2	0.5	1.5
Japan	0.7	1.6	1.7	−0.2	−4.5	1.7	1.6	0.4

Source IMF (2022). World Economic Outlook. October

^aProjection

The situation is aggravated by the fact that several less developed countries, thanks to their high economic growth, are turning into increasingly strong economies, and as a result, the share of developed countries in world GDP continues to decline. However, the group of developed countries may be replenished in the future at the expense of some CEE countries, Latin America and Asia, and then the weight of the group should not decrease so much.

Thus, insufficiently high rates of economic growth (and hence modernisation) are probably the main challenge for the entire group of developed economies.

3.1 The Real Sector

Post-industrialisation has shifted the industry structure of developed countries towards services (Mason 2015). At the beginning of our decade, this sector accounted for 70% of their GDP. Such a shift has occurred not so much at the expense of the primary sector, which has long weighed little in the developed economy, as at the expense of the secondary sector, especially manufacturing. While this was offset in some European countries, Japan and almost all other Asian developed countries by an increase in the share of machinery, equipment and vehicle production (i.e., the most knowledge-intensive industries) in final products, this share was rather shrinking in the US. The problem of deindustrialisation is particularly relevant there. Nevertheless, the United States has so far compensated for this with the active development of modern services (and oil and gas industry in the last years), as a result of which they continue to outpace the EU and Japan in terms of economic growth. This is partly because in modern services—financial, business, consulting—the output per employee is very large and continues to grow. But first, this is a consequence of more active innovations in the United States than in other developed countries (even if it brings less return than in the previous decades). As such, according to the OECD forecast, the US should maintain the highest labour productivity among major economies.

The level of liberalisation of the real sector in various areas is well reflected by the indicators of product market regulation (PMR indicators) developed by the OECD.

There are 18 of them, and are calculated by statisticians and experts in the range from 0 to 6 according to the burden of state interference in the production of goods and services and have different weights. Measurements of these indicators in 1998, 2008 and 2018 indicated a further shift towards liberalisation—the average integrated PMR index in the OECD as a whole decreased from 2.2 to 1.8 and then to 1.4. This index is below average (i.e., it is moving in a better direction) in Italy, Germany and especially in the UK. It is higher in Japan, France, South Korea and especially in Turkey (2.28). For comparison, we point out that in the two BRICS countries covered by the last measurement, the integral index is even higher—2.53 in South Africa and 2.58 in Brazil.

3.2 *Financial Sector*

The accumulated financial capital in developed countries is large everywhere (Matsubayashi 2021). However, its structure differs in different countries. The structure of the US financial market is dominated by the stock market, and banks with their assets are of lesser importance (despite their large assets, they account for only 17% of the financial market—chapter “[Resources of World Economy: Financial Capital](#)”). The situation is different in Europe and Japan—here, the value of bank assets is much greater (more than 50% of assets of financial institutions).

It can be assumed that the higher level of economic development causes a shift in its financial structure from banks to securities, especially stocks, as the main channel for financing the economy. This is done through a more advanced ownership structure: US firms with their strong dilution of equity capital, actively issue stocks, not being afraid to further dilute their capital, while European and Japanese firms with their higher intra-company concentration of capital, actively use bank loans in order not to dilute the controlling stakes of their stocks, and in addition, banks own a significant part of their capital. Debt securities, which do not entail a redistribution of ownership, are readily issued by firms of all these countries, and not only by their governments, as a result of which their accumulated value is enormous.

In turn, a large amount of government debt securities (they account for 1/2 of debt securities in the USA and the EU, and about 4/5 in Japan) reflects an important problem for these countries—the large national debt. The problem of public debt, which had been growing steadily in previous decades, worsened in the last one and in the conditions of the coronavirus (in Japan, the rapid growth of public debt began at the end of the twentieth century after the crisis began there) (Table 4).

The state debt arises from the state budget deficit, for the repayment of which the state issues debt securities of various types, primarily bonds. The state budget deficit is characteristic of the vast majority of developed countries in recent decades, which was not typical of the former capitalism, where the state budget deficit arose mainly during wars and crises. The probable reason for the transition of developed countries to a predominantly deficient state budget can be considered by greatly increased public spending, primarily in the socio-cultural sphere, i.e. on the development of

Table 4 Developed countries: public debt relative to GDP, %

	Average 1997–2006	2007	2013	2022 ^a
USA	60.1	64.4	104.0	125.6
Euro area	79.1	66.5	95.7	95.2
Japan	153.6	183.0	243.5	262.5

Sources IMF. World Economic Outlook. October 2014; June 2020; April 2022

^aProjections

human capital. But there were also economic and theoretical reasons for the long existence of this deficit.

According to the neoclassical and neoliberal approach to public debt, the latter's impact on the economy as a whole is negative—the state, by increasing debt servicing costs, stimulates inflation, increases the cost of capital and crowded out private borrowers from the financial market, thereby inhibiting their investments and economic growth in general. However, the neo-Keynesian theory considers the resulting small inflation as a positive thing, as it stimulates the entry of accumulated capital into the economy to prevent its depreciation. Besides, the negative impact of the national debt begins to be felt only after it reaches a large size, more precisely, large payments on it. The new neo-Keynesian and neo-constitutional concept—the modern monetary theory—proves that the state should ensure economic activity and employment by increasing budget expenditures and providing banks with more money from the central bank, and the state budget deficit, servicing and repayment of public debt should be covered by monetary emission (rather than by the growth of tax revenues). Such recommendations resonate with the governments of leading developed countries, especially during crises, including COVID-19 crisis.

3.3 External Sector

The global economy consists primarily of flows of goods and services, capital and knowledge between the developed countries themselves. Developed countries account for about half of American foreign trade in goods and services. Therefore, these countries are trying to solve the problem of slowing down the pace of globalisation by strengthening mutual ties. For the EU, this is primarily the deepening of European integration; and for the USMCA and developed Asian countries, it entails the expansion of integration ties with other triad centres. The transatlantic free trade zone between the EU and the USMCA could accelerate the economic growth of its participants. However, high protective duties in the EU on the import of agricultural products and insufficient protection of American intellectual property here, as well as various standards remain controversial. The idea of trans-Pacific integration has not yet been fully realised (see chapter “[World Economy Major Trends: International Economic Integration](#)”).

Another significant foreign economic problem for developed countries is global imbalances. For example, in Germany and Japan, with their consistently positive current account balances, this increases official reserves and thus, a large capital outflow. This problem is more difficult for countries with a stable current account deficit, primarily because they are overly dependent on foreign capital inflows, which should compensate for the current account deficit through the financial account of the balance of payments. This is especially true for the United States, where the current account deficit, mainly due to the trade deficit, ranged from 2 to 3% of its GDP in the last decade. It was offset by the inflow of foreign capital into the American economy, but this is a potentially dangerous situation. After all, the main part of the capital inflow consists of purchases of American securities by non-residents, and a severe crisis in the American economy can stop this inflow. Of course, the reserve status of the US dollar should allow the US to pay in dollars, rather than by goods and services for imported foreign products. Meanwhile, this is a medium-term and not a long-term solution.

3.4 Social Sector

The population of developed countries as a whole is growing slowly. According to the UN forecast, by 2050 it should increase by only a few tens of millions of people (largely due to immigration—see below). The birth rate is low here (1.7 children per woman), and although the UN predicts its small growth, it should not reach the coefficient necessary for preserving the population, i.e. 2.1 children per woman. Moreover, in some countries, the situation is even worse. By 2050, the population should decrease in Japan, Germany, Italy, and most of the CEE countries. At the same time, the population of the USA, Canada, France, and the UK should grow at a good pace for developed countries. Nevertheless, it's worth keeping in mind that the dynamics of labour force growth largely determine the growth rate of GDP.

One of the ways to solve this problem is large-scale immigration to developed countries. But if the countries of migrant capitalism with their extensive experience of immigration policy (the USA, Canada and Australia) were able to adapt through controlled immigration to the fact that, unlike the past centuries, migrants came mainly from developing countries, then migration to Europe, which was not previously observed and therefore poorly controlled, creates a problem of insufficient adaptation of many migrants (especially from Muslim countries) to the local economic, cultural and psychological requirements. The great importance of immigration for developed countries is indicated by the proportion of their population born abroad—at the end of the last decade, it was 23–30% in Canada, Australia and New Zealand, 16% in the USA, 12–16% in leading European countries and only 1–2% in South Korea and Japan.

Another problem is the ageing of the population of developed countries. The increase in life expectancy has led to the fact that the proportion of people over 65 is constantly growing and in 2020 was already 18%, and is expected to increase to 21%

by 2030. As a result, the increase in the labour force is slowing down. If between 2000 and 2007, employment in the OECD countries grew at an average annual rate of 0.9%, then by 0.6% between 2012 and 2017, the tendency between 2018 and 2030 will be an average growth of 0.4% per year (this growth will be especially small in the eurozone, in Japan the number of employees will continue to shrink).

Besides, the majority of elderly people no longer work and receive substantial social transfers from the state. For example, in the USA, approximately 2/3 of the federal budget is spent on the pension system and medical care for the elderly. Therefore, the growth in the number of elderly citizens turns into an even greater strain on the budget in conditions when the national debt has already reached critical proportions. But if people live longer, they can probably retire later. Therefore, the main way to solve this problem is to gradually increase the retirement age. There is a gradual increase in the retirement age to 66 years (against 64.5 in 2020) in France, 67 years in Germany (against 65.7 years), 67 years in the USA (against 66 years), etc.

Unemployment is a significant problem, but mainly for European countries with their low economic growth rates and a rigid system of hiring and firing. If at the end of 2019 in the United States unemployment was less than 4% of the economically active population, then in the eurozone it was 7.6%. Japan, on the other hand, with its declining economically active population and a system of lifelong employment, kept unemployment at 2.4% in many companies. The COVID-19 crisis affected these indicators, but then they began to improve and in February 2022 amounted to 3.8, 6.8 and 2.7%, respectively.

4 Conclusions

1. Within the group of developed countries, three centres can be distinguished, the so-called triad—these are the USMCA, the EU, and the developed countries of Asia. The member countries of the triad demonstrate different models of modern capitalism and different approaches to globalisation (especially to regional economic integration).
2. Insufficiently high rates of economic growth are probably the main challenge for the entire group of developed economies. The slowdown in their economic dynamics is caused by some reasons—a decrease in the pace of globalisation, a change in the structure of their economy, an ageing population, and the exhaustion of opportunities for further active liberalisation.
3. Post-industrialisation continues to shift the industrial structure of developed countries towards services. Such a shift is happening not so much at the expense of the primary sector, which has long weighed little in a developed economy, as at the expense of the secondary sector, especially manufacturing.
4. Developed countries were the initiators of the global campaign for the preservation of the environment (which is not surprising for countries that have passed the stage of industrialisation with its high burden on the environment). Nevertheless,

it should be borne in mind that it is this group of countries that probably has the most negative impact on the environment.

5. A higher level of economic development in the country causes a shift in its financial structure from banks to securities as the main channel for financing the economy. This is done through a more advanced ownership structure.
6. A large amount of government debt securities (in the USA and the EU they account for half of all debt securities, in Japan—more than 4/5) reflects an important problem for these countries—the large public debt. Gradually growing in the previous decades, the problem of public debt sharply worsened during the years of the last crisis (in Japan, the rapid growth of public debt began 20 years ago, after the crisis began there).
7. The global economy consists primarily of flows of products, capital and knowledge between the developed countries themselves. Therefore, these countries are trying to solve the problem of slowing down the pace of globalisation by strengthening mutual ties, although not always successful because of the United States.
8. The population of developed countries as a whole is growing slowly, mainly due to immigration. But if the countries of migrant capitalism with their extensive experience of immigration policy (the USA, Canada and Australia) were able to adapt through controlled immigration to the fact that, unlike the past centuries, migrants came mainly from less developed countries, then migration to Europe, which was not previously observed and therefore poorly controlled, creates a problem of insufficient adaptation of many migrants (especially from Muslim countries) to the local economic, cultural and psychological requirements.
9. Another social problem is the noticeable ageing of the population of developed countries. As a result, the share of working people in the entire population decreases and, accordingly, the increase in the labour force slows down. Besides, the majority of elderly people no longer work and receive substantial social transfers from the state. The main way to solve this problem is to gradually increase the retirement age.

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Victor Supyan

Abstract This chapter examines the US economic system, the dynamics, proportions, and efficiency of economic development, and the state of business forms, human capital, and the country's innovation potential. It analyzes the state and structure of the real sector of the economy, the state of the leading branches of the real sector, and the main components of the financial sector. The subject of the analysis is also the state of the country's foreign economic sector. The US social sector is also considered, including the problem of living standards and income differentiation, the pension system, and the health insurance system.

1 Introduction

The US economy in the 2020s is going through a period of serious transformation, affecting both the foundations of the socio-economic model of the country and all elements of the economic system itself. First of all, there are changes in the dynamics and proportions of the American economy, its cyclical dynamics, and the dynamics of labor productivity. The most important factors of the socio-economic development of the country are investments in human capital and scientific, technical, and innovative potential, where the United States manages to keep a leading position in the global economy.

2 The US Economic System

Compared with other leading developed countries, the American economic system has the following characteristic features:

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- A highly competitive economic mechanism based on a high degree of freedom of entrepreneurship: there are more than 32 million economic entities in the USA, and the country ranked 20th in the index of economic freedom in 2021 (although it is second after the UK among large countries);
- Highly developed entrepreneurship, enjoying the most active support of society and the state;
- A relatively low share of state ownership in the economy. The state is present only in the socio-cultural sphere and industrial infrastructure, the state's contribution to the creation of GDP does not usually exceed 10–12%, and the share of GDP redistributed through the federal budget traditionally ranges around 18–20% (35–36% for the consolidated budget), which is significantly less than in most other developed economies;
- The high work ethic of the US population, the absence of a tradition of state paternalism, and the belief of citizens in individual success based on their efforts (in terms of the number of hours worked per year, the American employee is ahead of workers in most European countries);
- A post-industrial economy that is already in existence, with the predominance of the service sector and high-tech industries, and with one of the highest indicators of economic efficiency;
- A new technological order, based on highly developed science and education, flexible diversified production, innovative technologies actively introduced into production, new information infrastructure, and digitalization processes, as a result of which human capital has become the main economic resource.

2.1 The Role of the State in the Economy and Priorities of Economic Policy

Today, from the point of view of the sectoral structure, the public sector of the United States is concentrated mainly in socio-cultural and infrastructural sectors (science, education, healthcare, social security, part of cultural and art objects, roads and bridges, pipelines, individual energy facilities).

In general, there are several areas of intervention of the American state in the economy, which, with certain reservations, are supported by representatives of all major US economic schools. According to the majority, the absolute prerogatives of the state are issuing and managing money; creating and maintaining the legal framework of market relations (including legislative protection of private property and consumer rights); maintaining a competitive environment and measures aimed at preventing monopolization of the economy, producing public goods, including education, basic science, implementing the tasks for defense and law enforcement, etc.; minimizing the negative side effects of market activities (in particular, environmental protection); overcoming excessive social differentiation in society; and supporting disadvantaged groups of the population.

The definition and implementation of national priorities, including in the social and economic spheres, is becoming an increasingly important function of the state. Among the priorities of the state at the end of the 2020s, the following can be distinguished:

1. Stabilizing economic growth, developing a balanced macroeconomic policy to achieve sustainable development, taking into account environmental and social requirements;
2. Promoting labor productivity growth through the implementation of innovation policy, accelerating the development of scientific and technological progress and fundamental science, supporting information and communication technologies and economy digitalization;
3. Supporting education and advanced training of the workforce, strengthening the impact of education on economic growth and the standard of living of Americans;
4. Ensuring the social function of the state through the optimization of programs in the field of pension and health insurance and welfare, supporting family values;
5. Realizing the positive effect of the globalization of the American economy;
6. Improving the natural environment, as well as environmental regulators, developing appropriate policies in response to the global climate changes.

Apart from strategic priorities, there are also some tactical ones that the American government sets in economic and social policy—in particular, the budget policy. For example, among the budget priorities are reducing public debt, introducing tax reform, fighting crime and drug addiction, developing a new energy strategy, etc.

The US state plays an extremely important role in other areas of economic and social life, such as ecology and foreign economic relations, but the main aspect seems to be the macroeconomic regulatory role of the state, carried out both through constantly developing legislation and through mechanisms of indirect regulation of economic processes worked out over many years of practice. These include monetary policy (mandatory reserve rules, discount rates, securities transactions, etc.), and tax and budget regulation (from the point of view of the economy, the main aspect here is more tax policy than budget expenditures).

It is the manipulation of the money supply, the discount rate, and taxes that in many ways either enables stimulated business activity, economic growth, and reduced unemployment, or which reduces the overheating of the economy and the rate of inflation. An important regulator of the state's economic activity is also the federal contract system, through which the public sector is provided with goods and services.

The massive influence of the US government on economic life can also be noticed at the regional level. Large-scale support for entrepreneurship is provided, and favorable conditions are created for attracting enterprises to a particular state, city, or county. In the USA, there are 19 thousand economic commissions under regional and local executive authorities that are engaged in this kind of activity. It also includes the creation and work of so-called entrepreneurial incubators, the number of which exceeded 1,200 by the end of the 2020s.

In general, it can be said that the role of the state in the American economy is extremely important and diverse. The state, in no way replacing private companies,

assumes those socially significant functions that either do not bring quick income or without which the general conditions of society and reproduction will not be optimal. This includes fundamental science, environmental protection, and the maintenance of the socio-cultural sphere and infrastructure, without the development of which society cannot progress.

3 Dynamics, Proportions, and Efficiency of Economic Development

3.1 Dynamics of Economic Development

Although the average annual growth rates of US GDP in recent decades have been higher than the average for the group of developed countries, they also tend to decrease (Table 1).

The average annual growth of real GDP as a whole for the specified period amounted to 2.75%. The economy has gone through six cyclical downturns during this period, including the so-called great recession of 2008–2009, when GDP fell by 2.6%. The new crisis that occurred in 2020 was exacerbated by the coronavirus pandemic. The fall in GDP in the 2nd quarter amounted to more than 30% of GDP.

According to American experts, the unstable trend toward a decline in US GDP growth is primarily due to the influence of cyclical downturns, as well as a slowdown in employment and labor productivity growth. In addition, specific factors related to the peculiarities of recent cycles—the role of mortgage and financial markets, the nature of public procurement, etc.—have become important factors of economic growth.

At the same time, several key long-term factors will contribute to maintaining acceptable rates of economic growth in the United States, especially given its qualitative component. This is primarily scientific and technological progress, which in the United States is given priority attention both at the state level and at the level of private business. The United States is the leader in terms of scientific and technical potential, as evidenced by all existing indicators (see paragraph 15.4).

Table 1 The average annual growth rate of US GDP for 1970–2019

Period, years	Average annual growth rate, %
1970–1979	3.18
1980–1989	3.15
1990–1999	3.22
2000–2009	1.99
2010–2019	2.24

Source US GDP Growth Rate 1960–2020. <https://www.macrotrends.net/countries/usa/united-states/gdp-growth-rate>

Another key long-term development factor is investments in human capital. Total expenditures on formal and non-formal education in the United States have exceeded \$1.5 trillion (6% of GDP in 2020), which is several times higher than the expenditures of any other country (see paragraph 15.4).

In addition to the above, investment in infrastructure is an important long-term factor of economic development and the acceleration of economic growth. The law on reinvestment and economic recovery (adopted in 2009) presupposes massive public investments in communication and transport infrastructure, electric networks, and energy. President Trump's economic policy has become a serious factor in the economic dynamics of the United States, the results of which are quite contradictory. On the other hand, the coronavirus pandemic has become an extremely negative factor, the consequences of which have yet to be assessed, but which in 2020 had already become a powerful trigger for a new economic crisis in the United States. According to the estimates of the US Bureau of Economic Analysis, the decline in GDP in the first quarter of 2020 amounted to 4.8% of GDP in annual terms, while in the second quarter of 2020 it was almost 32%.

3.2 Macroeconomic Proportions

The US economy is characterized by the following macroeconomic proportions: the share of consumption in GDP in 2021 (3rd quarter) was 68.5% (with an average for the period from 1970 to 2018 of 64%), and the share of investments in GDP (accumulation rate) was 20.5% (with an average annual rate for the post-war period of 21.2%). The industry proportions will be discussed in Paragraph 15.2.

The scale of the shadow economy in the United States is estimated at 7.8% of GDP with a tendency to decrease to 6.9% by 2025. This is noticeably less than the global average of the shadow economy, estimated at 14% of GDP.

3.3 The Efficiency of Economic Development

The key indicator reflecting the economic position of the United States in the world is the efficiency of social production, primarily labor productivity. The most authoritative sources give similar estimates of the leading countries' position on this indicator. According to the calculations of the World Bank for 2020, the United States was in third place in terms of labor productivity (calculated as GDP per person-hour worked), after Norway and Luxembourg. At the same time, the United States consistently ranks first among large countries, with an indicator of 67 thousand dollars for one hour worked. The second and third places among the major countries are traditionally occupied by France and Germany. Japan lags behind the United States in this indicator by about 1.5 times, while China's lag, according to various estimates, is about 4 times.

At the same time, while maintaining a leading position in terms of labor productivity, the United States lags in terms of growth rates of this indicator in several countries, including developed ones. The average annual rate of labor productivity growth in the United States for the period from 1949 to 2020 was 1.5%. The maximum growth was achieved in 2015 (9.7%), and in 1974 there was an absolute drop in the level of labor productivity (by 2.7%). In 1979–2019, the United States was inferior in terms of the average annual rate of labor productivity growth to such countries as South Korea, Singapore, Ireland, Norway, and Sweden. This is due, on the one hand, to a faster increase in the stock and knowledge intensity of production in these countries, and, on the other, to the increasingly difficult task of increasing labor productivity from the high level already achieved. The dynamics of productivity are influenced by both conjunctural factors, in particular, the phase of the economic cycle, the stock of labor, sectoral shifts in the economy, the level of education and qualifications of the workforce, and much more.

Apart from labor productivity as the most frequently used indicator of the efficiency of social production, such an indicator as aggregate factor productivity is also used, taking into account the contribution of individual factors—labor, capital, and scientific and technological progress. The USA is among the leaders in this indicator—the annual increase in aggregate factor productivity in the USA was 0.6–0.8% in the 2010s.

4 Business Structure

4.1 *The Main Forms of Business*

According to organizational and legal forms, all US firms are divided into three main groups: corporations (joint-stock companies), of which there were 5.8 million in 2020 (about 18% of the total number of firms), partnerships, of which there were about 10% of the total number of firms, and sole entrepreneurs, making up the remaining 72%. While the number of firms in the country has more than doubled since 1980 (from 13 to 32.5 million units), the proportions between the number of corporations, partnerships, and individual enterprises have changed little during this time.

The role of various organizational and legal forms in the volume of their sales looks completely different: corporations accounted for 81%, partnerships for 15%, and individual enterprises for about 4%. Forty years ago, in 1980, corporations accounted for 89% of sales, but partnerships and individual enterprises reversed places: the share of partnerships was lower (4.5%), and individual enterprises were higher (6.5%).

Of course, the importance of a particular organizational and legal form of ownership is primarily indicated by the volume of sales, not by the quantitative distribution of certain enterprises. Consequently, it can be concluded that the dominant form of private property in the United States is corporate private property.

The entire equity capital of the United States belongs to institutional investors (70%) and households (30%). Among the former, the largest holders of shares are mutual investment funds, pension funds, and insurance companies. As for households, the number of individual shareholders grew rapidly: 8.6 million people in 1956; 30.8 million in 1970; and up to 51.4 million (21% of the country's population) in 1990. According to estimates, in 2021, about 56% of households owned shares of various corporations, and the shares themselves have become a very important element of liquid financial assets of households, accounting for about 35% of assets.

At the same time, the share of individual shareholders in the total share capital has significantly decreased in recent decades—from 84% in 1965 to 30% by the beginning of the 2020s—which is due to the strengthening of positions in the market of large institutional investors. Up to 40% of the shares of the largest 25 American companies are controlled by the 25 largest institutional investors.

4.2 Business Classification Based on Ownership

Of particular interest is the classification of private property according to its predominant ownership (based on ownership), since the ownership of the capital of firms to certain groups of owners provides the key to understanding the deep processes in the evolution of all private property, as well as the advantages and disadvantages of its varieties. Today, at least three major categories of firms can be distinguished, depending on whom they belong to.

The first category, which prevails, should include the companies owned by manufacturers. In turn, this category can be divided into three groups:

- Firms that are mostly owned by investors. It is this group that ensures the dominance of the first category. It is dominated by the so-called investment form of ownership, i.e., companies that are mostly owned by external investors. These are both open and closed corporations, the ownership of which is extremely diffuse among many third-party shareholders. In these companies (with some exceptions), the controlling stake in the hands of one owner rarely exceeds 5%. This group accounts for at least 80% of all manufacturing property in the United States;
- Firms owned by employees (more than 6.2 thousand companies in 2019). According to the National Center for Employee Ownership, the joint-stock ownership of employees accounted for approximately 8% of all US corporate property worth \$1.6 trillion by 2019. The growth of this form of ownership goes through ESOP, pension savings plans 401 K, and plans for the distribution of options for the purchase of shares by the employees of corporations. It is estimated that by the beginning of 2019, 28 million people, or 22% of the country's workforce, were covered by such plans, both in industry and in medical, legal, accounting, advisory, and other services. It means that all those who are called "independent employees" can also be rightfully attributed to the owners working at their (small) enterprises;

- Production cooperatives, mainly agricultural. In 2020, there were more than 2,100 agricultural cooperatives in the country, uniting about 1.9 million farmers and engaged mainly in marketing and selling farm products. They employed 185 thousand people, and annual sales amounted to 6.5 billion dollars.

The second major category includes the companies that are largely owned by consumers, which include:

1. Various wholesale companies. They predominate mainly in the trade of consumer products;
2. Supplier firms. Among these, a prominent place is occupied by consumer cooperatives, which mainly unite farmers and are engaged in the supply of products for agriculture. There were more than 1,700 such cooperatives at the beginning of the twenty-first century;
3. Companies owned by consumers of utilities—electricity, water, and gas. These include, foremost, the firms that produce and consume electricity, although this market is certainly dominated by the investment form of ownership. For example, about 900 energy cooperatives generated 5% of all electricity for 20 million people, owned 42% of distribution networks in the country, and provided electricity to almost 42 million people in 2019;
4. Clubs and other associations. as a rule, country recreation clubs, golf clubs, sports clubs, etc. belong to their members or are controlled by them as non-profit organizations;
5. Housing cooperatives and other organizations of homeowners. In 2020, about 60% of all US residents (74 million people) lived in housing associations, about 40% of residents lived in communal condominiums, and about 4% lived in cooperatives. In 2020, over 1.2 million people lived in more than 6 thousand housing cooperatives located in the largest cities of the country.

The third category may include non-profit firms, as well as some banks and insurance companies, where ownership is mutual, since it is extremely intertwined. At the same time:

- The term “non-profit organizations” does not mean that they do not have the right to make a profit. On the contrary, many of them (as evidenced by their accounting statements) generate income annually. However, the principal characteristic of such organizations is that they do not have the right to distribute profits among those who founded this organization, or who are its head, trustee, or employee. Non-profit organizations occupy an important niche in the private services market. For example, in 2019, 1.5 million non-profit organizations were operating in various sectors of the economy (hospital services, preschool institutions, educational institutions, etc.) in the United States;
- Another group in this category includes banks and insurance companies. Although most of these financial organizations currently belong to private investment property, there are many so-called mutual savings banks, credit unions, and mutual insurance companies organized by the contributions of participants and being non-profit organizations by status. For example, almost 126.6 million people

were members of 5.1 thousand credit unions in 2021. A significant role in the US economy is played by “mutual” insurance companies. For example, there were 109 mutual life insurance companies in 2018.

An important characteristic of American business is the ratio between large and small and medium-sized companies. According to American statistics, small and medium-sized businesses include companies with 500 or fewer employees. Their share in the creation of the US GDP was 46% in 2018.

5 Human Capital and Innovative Development

5.1 Human Capital

By the beginning of the twenty-first century, an extremely mobile and well-trained workforce was formed in the USA, which is at a high level in almost any qualitative indicator. As for the economically active population in the United States, in 2022 it amounted to 163 million people, including 159 million employed people. As a result of the crisis of 2008–2009, the unemployment rate increased sharply, reaching a maximum of 10% in October 2010, but at the end of 2014, unemployment fell to 5.6%. In March 2020, before the start of a new economic crisis in the country stimulated by the coronavirus pandemic, unemployment was at an unprecedented low level—3.5%. The crisis caused a sharp increase in unemployment, which reached a level of 13% in mid-2020.

A distinctive feature of using the US labor potential in the 2010s is the relatively low level of economic activity of the able-bodied population. After the maximum level was reached in 2001 (67%), this indicator has been declining for all subsequent years—to 62.7% in 2015, stabilizing at the level of 62% by 2021. The decline in economic activity, especially among men of working age, can be explained by the transfer of traditional industries abroad and the unwillingness of representatives of many highly paid professionals who have lost their jobs (metallurgists, automobile manufacturers, textile workers) to switch to lower paid work in the service sector. Another explanation may be an increased number of people undergoing vocational retraining and thus dropping out of the statistically accounted workforce.

Shifts continue and intensify in the sectoral structure of the American labor force, which are expressed, firstly, in shifting from the branches of material production to the service sector, and, secondly, in shifting within both spheres of the economy in favor of knowledge-intensive industries. This means that employment in material production (industry, construction, agriculture) is declining in absolute terms (from 35 million in the early 1970s to 28.3 million in 2020), including employment in manufacturing (from 19–20 million people in the 1970s and 1980s to 14.5 million people in 2020), and the only exception is the growth of employment in construction (from 4.8 million in 1970 to 10.8 million people in 2020). At the same time, from 1970 to 2020, employment in the service sector increased from 47.3 to 108.6 million

people, which is about 80% of the economically active population. In no other country anywhere in the world is employment distributed with such a huge advantage in favor of the service sector. This mainly reflects the overall high level of labor productivity in the economy, especially in the manufacturing industry, and the new and fundamental importance of the service sector in the development of the country.

Shifts in the professional and qualification structure of the workforce are also very noticeable. At the beginning of 2020, the share of people engaged mainly in intellectual work (“white-collar employees”, which include specialists with higher education, administrators and managers, administrative and support staff, sales workers, etc.) reached almost 70%. The share of the persons mainly engaged in physical labor, which includes workers of all skill levels and so-called service workers (cooks, waiters, medical attendants, security guards, servants, etc.), is slowly but steadily declining.

The most impressive changes can be seen in the educational level of the American workforce. In 2020, more than 93% of the total adult US population aged 25 years and older had completed secondary education, including more than 83 million people (37.5%) who had completed higher education. This is a significant qualitative shift compared to 1970, when less than 54% of the population had secondary education and only 10% had graduated from universities and colleges. The average number of years of study of the able-bodied population in 2020 was 12.5 years.

The composition of the labor force, as well as the entire US population, is becoming increasingly gender-inclusive, multinational, and multiracial. In 2020, women made up slightly less than half the workforce (47% compared to 40% in the mid-1960s), about 63% of the workforce were white, more than 13% were African-American, about 16% were Hispanic, slightly more than 5% were Asian, and 1.8% were Native Americans (Indians, Aleuts, Eskimos). According to forecasts, these ratios will change significantly in 2060. The share of white workers will decrease to 43%, Hispanics will increase to 30%, African Americans to 18%, Asian Americans to more than 8%, and Native Americans will make up less than 1%. Such shifts are primarily associated with the declining birth rate among the white population, as well as with the scale of immigration to the United States from Latin America and Asia, which provides the main increase in the country’s population.

In this regard, it should be noted that after the adoption in 1964 of the law “On Civil Rights”, which prohibits discrimination in hiring on racial or national grounds (Article 7), the situation of ethnic minorities in the labor market has improved. This is particularly evident in the continuing reduction of the wage gap between white Americans and representatives of national minorities. If the average salary of African Americans was only 43% of the average salary of whites in 1939, then it rose to 73% in men and 90% in women by 1980. In subsequent years, no further significant progress has been made in bridging the wage gap, since the concentration of whites in high-income professions still prevails—in 2018, the corresponding figures for African-American men were 78 and 85% for women. At the same time, it should be noted that Asian immigrants have the highest salary in the United States, since they tend to have the highest level of education and strong work morale. Hispanic Americans, by contrast, are at the opposite end of the salary scale.

According to most indicators characterizing the level of education and qualifications of the workforce, the United States is one of the world leaders. This is largely due to the presence of a highly developed system of vocational education. The best American universities traditionally occupy leading positions in all world university rankings, and no country can compete with the United States in terms of total education costs, including their main European competitors, China, and Japan. For example, in 2020, the total expenditure on all types of formal education (private and public) amounted to more than \$1.5 trillion, and including so-called adult education (i.e. retraining of the workforce) amounted to more than \$1.8 trillion. The expenditures of other developed countries on education are still not comparable with the American ones (Japan spends 160.5 billion dollars, Germany \$129.6, Great Britain \$122.6, and France \$121 billion dollars). An extensive diversified system of higher education has been created in the country, numbering more than 4.4 thousand institutions of higher education (1,671 state universities and 2,803 private ones). The USA was in fourth place internationally (after Norway, New Zealand, and the UK) by the share of education expenditures in GDP (6.0%) in 2018.

However, the problem of lagging the level of education of Americans from other world leaders was identified at the beginning of the twenty-first century. UN experts say that, according to such an important indicator as to the share of university graduates in the country's population, in 2019, the US was in sixth place internationally (45.7%) after Canada, Japan, South Korea, and the UK. There are also notable disparities in US education related to the racial, ethnic, or social status of the population. Whereas among white Americans the share of people aged 25–34 with higher education is 49%, and among Asians it is more than 50%, then among African Americans the same indicator is 29%, and it is even lower among Hispanic Americans.

The desire to maintain the human potential of the country at the highest educational and qualification level in the world has led to several administrative measures in this area. In particular, the task has been set to ensure that 60% of the entire workforce of the country has higher education. This is an ambitious task not only for higher education but above all for the weakest link of the education system—for secondary schools. Following the “Way Forward” program initiated by the law “On Economic Recovery and Reinvestment”, most states have already raised school standards for preparing young people for college, mainly in the field of languages and mathematics.

In the field of higher education, which remains by far the strongest in the world, efforts are focused on increasing the availability of education. In particular, under the law “On Healthcare and Education” adopted in 2010, more than 8 million students received Pell grants (amounting to slightly less than 6 thousand dollars per year per student). In order to stimulate higher education among national minorities, the law allocated \$2.6 billion over ten years to support colleges that traditionally focus on these groups of the population.

Another important area of professional training of the workforce is the regular professional development of Americans already working. More than 40 million people participate in professional development programs every year.

5.2 *Innovative Potential*

The United States occupies a leading position in the world in almost all indicators of scientific and technical potential. In 2019, the scale of R&D allocations in the United States reached \$609 billion (more than 25% of global spending), ahead of all other leading countries (China reached \$564 billion, Japan \$191 billion, Germany \$130 billion, India \$96 billion, South Korea \$92 billion, France \$69 billion, Russia \$53 billion, Great Britain \$53 billion, and Brazil—\$40 billion). However, in terms of the share of R&D expenditures in GDP, the United States is inferior to five countries, sharing the sixth-seventh place with Germany and Denmark (3.0%).

Nevertheless, the most important feature is the unconditional leadership of the United States in the presence of scientific schools, in the ability to generate new ideas and produce a new scientific product. This is particularly convincingly evidenced by the number of Nobel Prizes received by the United States and other countries—an indicator reflecting the most outstanding scientific achievements. The number of American scientists who have received prizes for the entire time of their award totals 383 people out of the 900 laureates in total—40% of the awardees and about 50% of the prizes (since the number of awardees significantly exceeds the number of prizes). The closest competitors to the US in terms of Nobel Prize winners are the UK, Germany, and France, with 138, 108, and 68 laureates respectively, while in Russia, there are 31 laureates (including Soviet and pre-revolutionary Russia), 22 in Japan, and 8 in China. The United States is in third place on the so-called global innovation index, behind Sweden and Switzerland. The United States is the undisputed leader among the major countries in this indicator.

The USA is also the undisputed leader in the knowledge and technology-intensive industries. In American statistics, there are five service industries related to the high-tech sector (business services, financial services, communications services, education, and healthcare) and five high-tech manufacturing industries (pharmaceutical industry, semiconductor manufacturing, scientific and measuring equipment manufacturing, communications equipment manufacturing, and the aerospace industry). In general, the share of the high-tech sector in the US GDP was 40% in 2019, which is higher than in the EU and Japan (32 and 30%, respectively).

The USA is the leader in both the production of knowledge-intensive services and the knowledge-intensive manufacturing industry. As for the US foreign trade positions on these goods and services, the situation here is contradictory. The USA is the second-largest exporter of high-tech services after the EU with a share of 22% (the EU with 30%, and China with 8%), having a positive balance for this type of operation of almost \$100 billion. The situation is worse in the trade of knowledge-intensive goods; the US share in this area has significantly decreased, going from 22% in 1998 to 15% in 2019—this is significantly inferior to China, which more than tripled its share in this market from 1995 to 2019, going from 6 to 22%. However, it should be borne in mind that a significant part of the goods exported by China is high-tech goods of the second and third echelon, which have already become quite massive, and, moreover, are assembled from components manufactured in other Asian countries at branches of American TNCs.

6 Real Sector

The ratio of the service sector and the branches of material production in 2000, 2010 and 2020 changed slightly (Table 2).

The share of the extractive industry in the US GDP was only 0.9% in 2020, although its importance in the economy is great. Over the first 18 years of the twenty-first century, the share of the extractive industry increased by 0.6 percentage points and continues to grow due to a sharp increase in shale gas production. At its expense, the country's energy needs have increased significantly, although the United States continues to be a net importer of fuel, primarily oil (30% of its consumption in the country is met by imports). Also, a significant part of the domestic consumption of other mineral resources is met by imports: 17% of iron ore is imported, 63% of nickel, and 100% of both bauxite and manganese ore.

In 2020, the United States generated about 4.4 trillion kWh of electricity (second in the world after China, representing 17% of global electricity production). In the structure of electricity production, 60% comes from thermal power plants, 6.6% from hydroelectric power plants, 14% from other renewable energy sources, and 20% from nuclear power plants. The United States remains a country that does not curtail nuclear power, although it does not build new nuclear power plants.

The share of the manufacturing industry accounts for a consistently small share of GDP and employment—10.8% of GDP and 14.8% of employment in 2020, against 14.1% and 12% respectively in 2000. Nevertheless, the United States ranks second in the world (after China) in terms of manufacturing output (more than 18% of world production), accounting for 14% of world exports of mechanical engineering and 14.5% of chemical industry products. The main direction of the development of the US manufacturing industry is the transition from basic industries (capital-, material-, and energy-intensive) to knowledge-intensive ones. The share of traditional industries—metallurgy, textile industry, transport engineering, etc.—is declining. The leading branches of the manufacturing industry are both high-tech (electronic and chemical industries, general mechanical engineering), and traditional (food industry, automotive, and metalworking).

The USA is a country of highly developed and highly productive agriculture. It produces about 1% of GDP, and 0.9% of the country's workforce (1.9 million people) was employed there in 2020. In that year, the gross grain harvest amounted to 449 million tons, and beef production to 12.7 million tons. There are 2.1 million farms in the USA; farms with annual sales of more than 100 thousand dollars (46.6% of farms) produce over 98% of products, including 42% of products coming from those farms with sales of more than 1 million dollars (1.4% of farms). All in all, there is an obvious tendency to increase the concentration of agricultural production in the largest farms. The number of small and family farms in the USA is gradually decreasing. Moreover, agriculture is only a small part of the US agro-industrial complex, which accounts for about 15% of the country's GDP.

Table 2 Sectoral structure of the US GDP economy (in current prices) in 2000, 2010, and 2020

Branch	2000		2010		2020	
	Trillion dollars	%	Trillion dollars	%	Trillion dollars	%
Total	9.95	100	14.66	100	20.90	100
Agriculture and forestry	0.10	1.0	0.15	1.0	0.17	0.8
Extractive industry	0.11	1.1	0.28	1.9	0.18	0.8
including oil and gas production	0.07	0.7	...	...	n.a	n.a
Energy, gas, and water supply	0.17	1.7	0.28	1.9	n.a	n.a
Construction	0.47	4.7	0.50	3.4	0.90	4.3
Manufacturing industry	1.41	14.2	1.72	11.7	2.30	11.0
including durable goods	0.84	8.4	0.96	6.5	1.30	6.2
short-term goods	0.58	5.8	0.76	5.2	1.00	4.8
Wholesale trade	0.62	6.2	0.80	5.4	1.20	5.7
Retail trade	0.69	6.9	0.86	5.9	1.20	5.7
Transport	0.30	3.0	0.41	2.8	0.57	2.7
Information services	0.42	4.2	0.67	4.6	1.17	5.6
Finance and insurance	0.76	7.6	1.23	8.4	1.78	8.5
Real estate transactions	1.24	12.4	1.86	12.7	2.80	13.4
Professional, scientific, and technical services	0.66	6.6	1.10	7.5	2.69	12.8
Entrepreneurial services	0.45	4.5	0.66	4.5	0.40	1.9
Education	0.09	0.9	0.16	1.1	1.80	8.6
Healthcare	0.59	5.9	1.11	7.6	1.50	7.2
Art and recreation	0.10	1.0	0.13	0.9	1.16	0.7
Hotels and catering	0.28	2.8	0.40	2.7	0.50	2.4
Other services	0.28	2.8	0.34	2.3	0.40	1.9
Public services	1.21	12.2	1.96	13.4	2.67	12.7

Sources Statistical Abstract of the U.S., 2012; Bureau of Economic Analysis, 2020, December 22, Table 14, https://www.bea.gov/sites/default/files/2021-12/gdp3q21_3rd.pdf

The United States has a highly developed transport complex, which employed 6.2 million people and produced 3.1% of GDP in 2017. The cost of transport infrastructure was estimated at \$8.3 trillion in 2018. The volume of freight traffic amounted to over 7 trillion t-km in 2018, including rail transport (accounting for 40% of all traffic), automobile (28%), inland water (13%), and pipeline (17%). Passenger transportation is dominated by personal motor transport (77.5% of all traffic), but air transportation also plays an important role (19.5%). More than 274 million cars and buses were registered in the country in 2018.

Communications and computer sciences are an important component of the US' economic potential and the country's economic infrastructure. There were more than 298 million Internet users and more than 260 million cellular users in 2021.

For many decades, the United States has traditionally had the most developed transport and information infrastructure in the world. It has the world's longest network of roads (6.5 million km) and railways (230 thousand km), and more than 617 thousand bridges. 75 of the 250 largest information and telecommunications companies in the world operate in the United States. At the same time, serious problems were revealed in the country's infrastructure by the middle of the 2010s: in particular, many highways and railways, bridges, ports, airports, and other infrastructure facilities require serious renovation and repair. One cannot increase the efficiency of all other sectors of the economy without investments in these facilities. Both President Barack Obama in 2010 and then President Donald Trump in 2017 unveiled large-scale plans to upgrade and expand America's transport infrastructure. They included programs for the next ten years for financing land transport systems (\$1.5 trillion), including the creation of high-speed railways and a new generation of air transport management systems, the modernization of the country's electrical networks, and improving their efficiency. The Biden administration has even more ambitious plans to upgrade the country's infrastructure—the scale of planned investments reaches \$2 trillion.

Such service industries as science, education (see above), and healthcare (see paragraph 15.8) play a decisive role in the socio-economic development of the United States at the beginning of the twenty-first century.

7 Financial Sector

The financial sector occupies an important place in the structure of the US economy. The share of finance and insurance in the country's GDP in 2020 was 8.5%, while its share in total employment was 4.7% (6.6 million people). This means that finance is the fourth-largest value-added sector of the US economy—after manufacturing, trade, and government agencies.

7.1 *Monetary System*

The functions of the central bank of the United States are performed by the Federal Reserve System (FRS), which consists of the board of governors, 12 Federal Reserve banks, and about 2 thousand private member banks of the Fed (38% of private commercial banks). All key decisions on the regulation of the monetary system and the economy as a whole (setting the key rate, decisions on open market operations, etc.) are made by the Board of Governors of the Federal Reserve, which since February 2018 has been chaired by Jerome Powell. The structure of the Federal Reserve also includes the Federal Committee on Open Market Operations and the Federal Advisory Council. The main function of the Fed, unlike the European Central Bank and the Central Bank of the Russian Federation (which are designed to control and regulate only the monetary system of their countries), is macroeconomic regulation. Commercial banks registered with federal authorities acquire the title of “national” banks, and are required to be members of the Federal Reserve and the Federal Deposit Insurance Corporation (FDIC).

In total, more than 4.9 thousand commercial banks (with 74.9 thousand branches), more than 6 thousand investment companies, about 5.9 thousand insurance companies, and more than 5.1 thousand credit unions operated in the country in 2021—the number of credit and financial institutions, in general, is huge, unlike in the EU and Japan. Among them, the leaders in 2021 were JP Morgan Chase (\$3.0 trillion assets in 2021), the Bank of America (\$2.3 trillion assets), Citigroup (\$1.7 trillion), and Wells Fargo (\$1.7 trillion).

In addition, a more important source of investment and capital overflow than in Europe is the stock exchange (the most important one being the New York Stock Exchange), as a result of which the US accounts for 40% of the global stock market.

The volume of money supply (M2) in 2021 amounted to \$21.5 trillion (100% of GDP). The US was characterized by low inflation rates in the late 1990s and early 2000s—this is the result of the Fed’s monetary policy, which primarily uses such instruments as securities transactions on the open market, the impact on the scale of credit through the discount rate mechanism, and the regulation of reserves of commercial banks. An important role in the US recovery from the financial crisis of 2008–2009 was played by the Fed’s policy of so-called quantitative easing, which consisted in the Fed buying US Treasury bonds primarily from commercial banks and thus providing them with monetary resources for subsequent lending to the economy.

As a result of massive financial injections into the economy (about \$6 trillion) to help businesses and the population in 2020–2021, inflation in the United States rose sharply, reaching a level of 6% in 2021.

7.2 *Fiscal System*

In the United States, there is a three-tier budget system that includes the federal budget, state budgets, and local government budgets. About 18–19% of the country's GDP is redistributed through the federal budget; its expenditures amounted to \$4.5 trillion in 2019. In 2021, 30% was redistributed through the budget due to the growth of government spending. Almost 67% of all federal budget expenditures were spent on the development of human resources (education, healthcare, social security, etc.) and more than 16% were spent on national defense. Another 14–15% of GDP is redistributed through state and local government budgets, and most of their expenditures are also social.

The main source of tax revenue is personal income tax (about 44% of all revenues in 2020), levied at progressive rates. The tax reform of 2017 retained seven individual taxation rates, keeping the minimum at 10%, but lowering the maximum rate from 39.6 to 37%. At the same time, corporate taxes have been radically reduced—a single corporate tax rate of 21% has been introduced instead of the previously progressive scale with a maximum rate of 35%.

After a short period of surpluses (1998–2001), the federal budget has been reduced to a deficit since 2002. After the crisis of 2008–2009, the US Federal budget deficit tended to decrease from 10% of GDP in 2009 to 4% in 2019. However, the crisis of 2020, with sharply increased government spending, radically changed the situation with the budget deficit to its sharp increase. In 2021, the budget deficit amounted to \$2.8 trillion (\$3.1 trillion in 2020), which is more than 12% of GDP.

The financial crisis of 2008–2009 had a great impact on the US financial sector. It led to the bankruptcy of several country's largest financial institutions (for example, the largest investment bank Lehman Brothers). According to many experts, the reason for this was the deregulation of the financial system, carried out under the leadership of the Fed at the end of the twentieth century. This provoked the uncontrolled spread of the derivatives of financial instruments, their overproduction and, ultimately, separation from those real assets for which they were issued. The Wall Street Reform and Consumer Protection Act (Wall Street Report and Consumer Protection Act) was adopted as a reaction to the consequences of the financial crisis in the United States, on July 21, 2010. It is often called by the name of its developers: the Dodd-Frank Act. The law provides for measures to reduce the risks for the functioning of the financial system, protect the consumers of financial services, and regulate financial institutions. Under the new law, a new financial regulatory body—the Financial Stability Oversight Council—was created in the United States. At the initiative of President Trump, who was elected to the White House in 2016, new legislation was passed in 2018. It abolished many restrictions for commercial banks adopted under the Dodd-Frank Act.

7.3 *Public and National Debt*

One of the important indicators of the country's financial sector is the size of its public debt, as well as the total national debt.

The total amount of public debt owned by both internal and external holders (relative to the federal government) exceeded \$28.4 trillion at the end of 2021, which is \$5.5 trillion more than the country's GDP (127% of GDP). The state debt is dominated by the debt obligations of the state to the holders of government bonds outside state institutions (the so-called public debt)—the size of such debt in 2020 amounted to 74% of GDP. The rest of the national debt (26%) belongs to the Social Insurance Fund and other federal agencies. At the same time, there is a significant difference between the US government debt and the debts of many other countries—if the debts of most countries are formed as a result of direct borrowing from international financial organizations and commercial banks, then the US debt is the result of private investors and foreign states buying securities of the US Federal Treasury, i.e., the US Treasury Department. It is not only the United States who benefits by expanding the possibilities of financing government programs and the federal budget deficit in general, but also the holders of US Treasury bonds, including foreigners, since there is no more reliable way to preserve free financial resources in the modern world economy.

The formation of the American public debt does not change its essence—one has to pay off debts, as well as to service them by paying interest on the placed bonds. The amount of the so-called interest expenses of the federal budget amounted to \$562 billion in 2021. At the same time, it seems that the dangers (especially faced by foreign bondholders) associated with large US government debt are often exaggerated. One cannot present all or most of the US debt obligations for payment at the same time. This does not meet the interests of bondholders at all, as it will undermine not only the US financial system but also the entire global economy, since one of the cornerstones of its stability is the reliability of the US financial system and confidence in the US Treasury securities.

In addition to the actual public debt, the problem is the country's total debt (national debt), which includes not only government obligations but also corporate debt (\$10 trillion), as well as consumer debts (mortgage and other household debts). In mid-2021, the total debt exceeded \$86 trillion, including consumer debt at \$21.3 trillion (mortgage debt at \$17.6 trillion, short-term consumer debt at \$1.1 trillion, and student debt at \$1.8 trillion). Besides the federal debt, there is also the debt of state and local governments (\$2.4 trillion), as well as unsecured obligations under the Medicare program (state medical care for older Americans)—which amounted to \$33.7 trillion—and unsecured obligations under social insurance programs (including pension)—which amounted to \$21.7 trillion.

As the situation of the 2000s, as well as the analysis of socio-economic forecasts, has shown, mortgage debts, as well as a shortage of funds in the social and medical insurance system, can pose a special threat to economic stability. A serious

problem is also the public debt, which requires more and more expenses for its maintenance. Theoretically, a large public debt poses a threat to the financial stability of the economy, strengthening the potential dependence of the country's budget on holders of US Treasury bonds, especially foreigners. Such threats increase during crises when it is necessary to expand government spending and the associated increase in borrowing, including abroad. This was fully confirmed by the crisis of 2008–2009, as well as the new crisis that began in 2020.

8 External Sector

8.1 *The International Investment Position of the USA*

In 2021, the value of American assets abroad amounted to \$34.8 trillion compared to \$6.2 trillion in 2000. In the same year, foreign assets in the United States reached \$49.6 trillion compared to \$7.6 trillion in 2000 (Table 3).

This means that US foreign assets exceeded US assets abroad by \$15.4 trillion.

Of particular interest is the balance between US direct investments abroad and foreign investments in the United States. Here the situation is different from the one with the balance of all tangible and financial assets. US direct investments abroad amounted to \$10.5 trillion in 2021 compared to \$1.5 trillion in 2000. In turn, the accumulated foreign direct investment in the United States amounted to \$13.5 trillion in 2021, an increase of \$12.1 trillion since 2000. This means that American direct investments abroad are only worth \$3.0 trillion less than the direct investments of other countries in the United States.

The above data on the dynamics of the international investment position of the United States indicate that the United States remains the most attractive place in the world for locating foreign assets. Their scale significantly exceeds the number of funds flowing from abroad to any other country. At the same time, the scale of American direct investments abroad, directed primarily by American TNCs, testifies to their importance for other countries and their role in the global economy. For example, there were 54 American TNCs among the 100 largest companies in the world by market capitalization in 2020. The top four places in this indicator among

Table 3 The international investment position of the United States in 2000 and 2021, trillion dollars

Type of investment	2000	2021
American assets abroad	6.2	34.2
Incl. American direct investments abroad	1.5	10.5
Foreign assets in the USA	7.6	49.6
Incl. foreign direct investment in the United States	1.4	13.5

Source Bureau of Economic Analysis. International Data. 2021. <http://www.bea.gov/>

non-financial corporations belonged to American digital TNCs—Amazon, Apple, Google, and Microsoft (the Chinese investment holding Tencent held fifth place). The first two positions in terms of revenue in the top five largest TNCs were also occupied by American corporations ExxonMobil and General Electric. At the same time, the degree of involvement in foreign activities of large American TNCs is extremely high. For example, the engineering company “General Electric” had branches in 130 countries around the world in 2020. It has more assets abroad than any non-financial corporation in the world, its foreign assets exceed 70% of the company’s total assets (\$331 billion), and more than 50% of the company’s 200,000-strong workforce also works abroad. In the size of foreign assets, the top ten TNCs in 2020 included two more American TNCs—Exxon Mobil and Chevron.

8.2 The Dollar as a Reserve Currency

In terms of the impact on world economic relations and the global economic situation, the role of the dollar as a reserve currency, which it plays in the global economy, is of great importance. Although since the beginning of the 2000s there has been a gradual decline in the share of the dollar in the overall structure of international foreign exchange reserves (in previous decades we could see growth), the share of the dollar, of course, remains dominant in the total volume of international reserves. In 2020, it amounted to more than 59%, with a much smaller share of the euro (24%), not to mention other reserve currencies: the pound sterling (4.1%), the Japanese yen (4.1%), the Swiss franc (0.3%), and all other currencies (5.5% in total).

The dollar also plays a great role in international economic relations. The share of the dollar in international settlements, although also gradually decreasing, amounted to more than 38% in 2021. At the same time, the share of the euro was 36.6%, the British pound was 6.8%, the Japanese yen was 3.5%, the Canadian dollar was 1.8%, and the Chinese yuan was 2.4%.

The main factor is the confidence of international economic agents in the dollar as the most reliable currency, which is backed by the most powerful economy in the world. It can be assumed, however, that as the positions of the main competitors of the United States, primarily China, strengthen, the role of the dollar in international economic relations will gradually decrease. Nevertheless, this will not happen very soon, since the main potentially competitive currency—the yuan—is not even freely convertible.

8.3 Foreign Trade

As for the US position in world trade, their total volume of exports of goods in 2020 was inferior to China (the corresponding figures are \$1.6 trillion, or 9% of world exports, and \$2.5 trillion, or 13.4% of world exports, respectively). In terms

of imports, the United States is ahead of all other countries, including China (the corresponding figures are 2.6 trillion dollars, or almost 14% of world imports, and 2.2 trillion dollars, or 11.3% of world imports, respectively). The total volume of US foreign trade (including services) in 2020 amounted to \$4.9 trillion, including exports amounted to \$2.1 trillion and imports to \$2.8 trillion; in other words, the US had a significant trade deficit of \$678.7 billion. At the same time, 25% of the US foreign trade turnover consists of services, the trade balance of which, unlike trade in goods, is positive—the corresponding figures in 2020 were equal to \$237 billion and \$915 billion.

It follows from the above figures that the United States has a huge trade deficit, as a result of which it also has a considerable deficit in the current account balance, which includes not only the balance of foreign trade operations but also the balance of payments and receipts from the production factors. On the one hand, a large balance of payment deficits is a factor increasing the national debt and is considered in economic theory as a negative indicator of the country's foreign economic positions. However, in the case of the United States, the situation is much more complicated. Firstly, the current account deficit of the United States is largely offset by the surplus of the financial account, reflecting the movement of capital from and to the country. In addition, the United States has the opportunity to eventually pay for the deficit of the entire balance of payments with the reserve currency—the dollar.

Huge imports, largely creating a negative trade balance, have many positive consequences for the United States. The influx of inexpensive imported goods from less developed countries (primarily from China) has a restraining effect on inflation in the United States. The ability to meet domestic demand at the expense of relatively cheap goods from abroad allows the United States itself to concentrate on producing more complex—mainly knowledge-intensive—products and services.

The foreign economic strategy of the Trump administration was aimed at preserving the real leadership and dominance of the United States in the global economy. This strategy uses both protectionist tools and tough methods of competition, including tariff and non-tariff restrictions and economic sanctions against other countries. A striking example of such methods was the trade war unleashed by the United States against China at the end of the 2010s.

The key US trading partners include China, Canada, Mexico, Japan, and Germany. Canada accounted for 17.6% of American exports and 12.6% of American imports in 2020; China accounted for 8.6% of American exports, but almost 18% of all imports; an Mexico accounted for 15.8% of American exports and 13.6% of all imports to the United States.

9 Social Sector

9.1 *Income Differentiation*

The high level of the US economic development determines the corresponding standard of living—one of the highest in the world. The median annual household income in 2021 was \$79.9 thousand (third in the world), and the average amount of accumulated non-financial assets of a household (house, cars, etc.) was \$780 thousand. 13 million households have assets worth more than \$1 million. The total amount of US national wealth amounted to \$126.3 trillion in 2021 or 30% of the world's national wealth. The average hourly wage in the US is over \$25, and the minimum wage is \$7.25.

At the same time, according to such an indicator as to the Human Development Index (which assesses not only the level of income and consumption of goods and services per capita but also life expectancy and education level), the United States ranked only 16th in the world in 2020 (after Norway, Switzerland, Ireland, Germany, Hong Kong, Australia, Iceland, Sweden, Singapore, the Netherlands, Denmark, Finland, Canada, New Zealand, and Belgium).

Income polarization is high in the US: 1% of the highest-income Americans have more income than the other 90% of the population. In 2021, 5% of households with the highest incomes (\$320 thousand) accounted for 23% of all incomes, which was 6 times higher than the average income in the country, and the top 20% of households accounted for \$130 thousand a year or more—49% of all incomes and 63% of national wealth. 4.7 thousand billionaires had more incomes than 50% of the population.

One of the key indicators of this income distribution—the Gini coefficient—was 0.484 in the USA in 2020. This is significantly higher than in other developed countries (in Western Europe, for example, it ranges from 0.25 to 0.35). Besides, the significant income differentiation in the United States continued to grow in previous years. For example, in 2020, 10% of the wealthiest Americans owned 70% of the US national wealth, compared with 60% in 1989. Such a high and growing social differentiation in the country is due to the characteristics of the US socio-economic model, in which the emphasis is on achieving economic efficiency at the expense of social justice (paragraph 14.1).

The crisis of 2008–2009 worsened the problem of poverty—from 2007 to 2013, the share of Americans living below the poverty line increased by 1.9 percentage points (by 6.3 million people) and amounted to 14.3% (43.6 million people). In the following years, the scale of poverty decreased under the influence of the economic recovery to 11.8% in 2018. The scale of poverty in the United States has increased again under the influence of the economic crisis of 2020. The poverty line in the United States in 2021 for one American is \$12.4 thousand per year, for two it is \$15.6 thousand, and for four it is \$26.2 thousand.

9.2 *Social Insurance and Welfare*

In 2020, \$2.9 trillion (about 14% of GDP and 66% of all federal government expenditures) was spent on state social insurance programs (including pension insurance, health insurance, unemployment and accident insurance, survivor's loss insurance, and a number of other types of insurance) and welfare (these include cash assistance programs, medical assistance, food aid, housing assistance programs, education and retraining programs for low-income Americans, veterans, Indians, and needy families with children). The number of households that received financial and non-financial assistance from the state at the beginning of the 2020s amounted to almost 74 million, including more than 42 million people who received state assistance in the form of food coupons in 2021.

The employment of the unemployed and their assistance in retraining and vocational guidance is carried out by state labor exchanges (recruitment assistance services), as well as numerous private recruitment agencies. The amount of the average weekly unemployment benefit in 2021 was \$350; the maximum period of payment of the benefit is six months.

The American pension system is distinguished by a variety of forms, conditions of financing, and benefit payment. Along with the state pension system at the federal level, there are savings schemes in the United States, which are created mainly in the private sector, as well as at the state and local government levels.

The basis of the pension system is still the General Federal State Pension Insurance Program adopted in 1935. It was a source of retirement income for more than 49 million Americans in 2020. 9.6 million disabled people and almost 5.9 million dependents who remained after the death of pensioners also received income under this program. The expenses under this program in 2020 amounted to more than \$1 trillion, and the average monthly pension under this program was \$1.4 thousand. As part of state and local government pension programs, 7.7 million people received pensions. Private pension insurance is voluntary and represents a kind of superstructure over the mandatory state pension system. The right to a private pension is acquired after working in the company and paying contributions for five years. A growing number of working Americans voluntarily participate in private workplace insurance plans: as of 2020, there were over 750,000 private pension plans in the United States, covering about 50% of the total number of employees.

Demographic changes in the composition of the country's population, primarily due to the aging of the population, is one of the most serious socio-economic problems of the US. In particular, there is the need to reform the social insurance system, primarily pension provision, as well as the social assistance system. These systems, which perform important tasks in ensuring the normal standard of living of many Americans, have proved to be highly effective. Only thanks to the social insurance system, the share of older Americans over the age of 65 living below the poverty line decreased from 35 to 9.2% between 1959 and 2017. However, the level of pension burden (i.e., the ratio between the number of people aged 65 and older and Americans aged 16–64) in the United States is constantly growing and is expected to reach almost

40% by 2050 compared to 20% in 2010—if the current pension system remains the same, it will become almost impossible to provide a level of acceptable income for older Americans.

One way to solve the problem is to expand the private pension insurance system (currently, 49% of Americans aged 65 and older take part in it). However, the main direction is the reform of the state pension system. In particular, there will be a gradual increase in the retirement age from 65 to 67 years by the mid-2020s, as well as an increase in the length of service required to calculate a full pension from 35 to 37 years. Budget expenditures on social security are also gradually increasing—from \$731 billion in 2011 to \$1.1 trillion in 2020.

All types of health insurance in the United States in 2020 covered 297 million people, i.e., 92% of the population. Almost 67% of the insured (159 million people) had private insurance, mainly provided by their employer (54.4%). At the same time, 31 million people (about 9.6% of the population) did not have any insurance in 2021. The law initiated by the Obama administration has expanded the opportunities of many uninsured Americans to obtain private insurance, since it obliges citizens to purchase such insurance and insurance companies to remove all age and morbidity restrictions for purchasing the insurance.

In recent years, several new programs have been adopted that expand Americans' access to health services, which is part of the overall strategy of increasing investment in human capital. First, this applies to children and people who have lost their jobs at the age of 55–61, as well as those Americans who are not covered by health insurance at the age of 62–65.

39.5% of the US population has government health insurance. There are three main government programs in the field of medical services in the United States: Medicare (a program to help older Americans (over 65 years old)), Medicaid (a program to help poor Americans), and a program to help military veterans. In 2020, the Medicare program provided medical care to 44 million people, or 18.4% of the country's population, the Medicaid program provided care to 74 million people, or 17.8% of the population, and the veterans' assistance program covered 11.7 million veterans, or 3.7% of the population.

In addition to the developed social insurance system, the United States also has a system of social assistance, in other words, assistance to the poor. By the end of the 2020s, federal spending on state social assistance exceeded \$670 billion. The main assistance programs include:

- Cash assistance programs;
- Medical care programs;
- Housing assistance programs;
- Educational and retraining assistance programs.

About 60% of American households with incomes below the subsistence minimum in 2018 received at least one type of monetary or non-monetary assistance.

The American state is pursuing a purposeful course to reform the social welfare system at the beginning of the twenty-first century. Assistance programs for various categories of people are being reoriented from social benefits to stimulating their

labor activity. An important tool for achieving this goal was the law “On Personal Responsibility and Employment Opportunities” adopted in 1996 and entered into force on July 1, 1997, which obliged the recipients of social assistance to work or undergo professional retraining. Under this law, various social benefits can be paid in five years only. This is an important social innovation designed to increase social responsibility and strengthen labor morale.

10 Conclusions

1. Compared with other leading developed countries, the American economic model has the following characteristic features: a highly competitive economic mechanism based on a high degree of freedom of entrepreneurship; highly developed entrepreneurship, which enjoys the most active support of society and the state; a relatively low share of state ownership in the economy; the high work ethic of the population, a lack of a tradition of state paternalism, and people’s faith in individual success based on their efforts; a post-industrial economy with a predominance of services and high-tech industries, with one of the highest indicators of economic efficiency; a new technological approach formed in the US economy.
2. Over the past few decades, and especially by the beginning of the twenty-first century, the importance of the public sector was becoming less significant for the economy. Today, the public sector in the United States, from the point of view of its sectoral structure, is concentrated exclusively in socio-cultural and infrastructural sectors (science, education, healthcare, social security, part of cultural and art objects, roads and bridges, pipelines, and individual energy facilities).
3. Among the priorities of the state at the turn of 2020s, the following can be distinguished: further stabilizing economic growth, developing a balanced macroeconomic policy; promoting productivity growth through the implementation of innovation policy, accelerating the development of scientific and technological development and fundamental science, support for information technology and digitalization of the economy; supporting education and advanced training of the workforce, strengthening the impact of education on economic growth and the standard of living of Americans; ensuring the social function of the state through the optimization of programs in the field of pension and health insurance and assistance; striving to maintain economic leadership in the world economy and world economic relations.
4. The average annual growth of the US GDP from 1960 to 2020 was 3.0%. The long-term downward trend in US GDP growth is primarily associated with a slowdown in employment growth and labor productivity. At the same time, several key long-term factors will contribute to maintaining acceptable economic growth rates in the United States. This is primarily scientific and technological progress, which is given priority in the United States, especially

given its qualitative component. Another key long-term development factor is investments in human capital.

5. The dominant form of private property in the United States is corporate private property. Its owners are private individuals and institutional investors. At the same time, there are many other forms of private property in the country with diverse owners.
6. By the beginning of the twenty-first century, an extremely mobile and well-trained workforce was formed in the USA, which is at a high level in almost any qualitative indicator. The most impressive changes can be seen in the educational level of the American workforce. The composition of the labor force, as well as the entire US population, is becoming increasingly gender-neutral, multinational, and multiracial.
7. The USA occupies a leading position in the world in almost all indicators of scientific and technical potential. The scale of allocations for R&D reached \$609 billion in the United States in 2019 (25% of global expenditures). However, the most important thing is the unconditional leadership of the United States in the presence of scientific schools, in the ability to generate new ideas and produce a new scientific product.
8. The US real sector is dominated by services, and the share of the manufacturing industry continues to decline, although in terms of its absolute size and level of development it remains the global leader. The financial sector occupies an increasingly important place in the structure of the US economy. The functions of the US central bank are performed by the Federal Reserve System (FRS). The main function of the Fed is monetary and macroeconomic regulation. A significant difference between the US government debt and the debts of most other countries is the result of the purchase of Federal Treasury securities by private investors and foreign states.
9. The growth of foreign assets in the United States is faster than the growth of American assets abroad, although this is not observed in the field of direct investment. This is a consequence of the systematic excess of the capital import into the United States over its export. Such a situation allows for mitigating the systematically deficient current balance of payments of the United States. This is also facilitated by the fact that the dollar is a reserve currency. Nevertheless, the problem of the balance of payments deficit is one of the acute problems of the United States.
10. The United States is a country with a large differentiation in the incomes of the rich and poor. The active social policy of the government helps to mitigate this problem, both through social insurance (pensions, unemployment benefits, etc.) and through social assistance (food stamps, municipal housing, etc.).

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European Union



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Abstract This chapter deals with a comprehensive analysis of the development of the European Union economy. Both country aspects of economic activity and mechanisms of regulation and coordination of economic policy in the EU at the supranational level are considered.

1 Introduction

The European Union is the most advanced integration association in the world, accounting for about 15% of world GDP by PPP (the third indicator in the world after China and the United States). The EU has managed to ensure the functioning of the internal market, build an economic and monetary union, and implement several rounds of expansion (See: Pomfret 2021). At the same time, the EU is not a single state that is why there are not only difficulties in regulating the economy and coordinating policies between member states, but also problems in the systematic study of the EU.

2 European Economic Systems

One of the problems of European integration is that EU members have different economic systems (models). On the one hand, this enriches the EU's economic policy by having different approaches to economic policy, but on the other hand, it hinders the development of a unified policy on many issues (See: Bukowski et al. 2021).

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2.1 German Model

The economic (more precisely, socio-economic) system of post-war Germany was formed under the influence of several directions of scientific thought: ordoliberal of the Freiburg School (W. Eucken, F. Boem), social liberalism (A. Meller-Armack) and neoliberalism (W. Ropke, A. Rustow). The result of this synthesis was the concept of a social market economy (Erhard 1958), to the practical implementation of which, L. Erhard, Minister of Economy and later Chancellor of Germany, made a decisive contribution (Bofinger 2016).

In contrast to the supporters of classical liberalism, L. Erhard did not consider it possible for the state to withdraw itself from the influence on economic life. Left to itself, the *laissez-faire* system inevitably leads to the concentration of capital and production, the fusion of business and power. The very logic of the development of free, disordered competition generates attempts by some subjects of market relations to restrict the freedom of others (for example, by creating cartels) and, consequently, ultimately destroys competition and freedom. L. Erhard agreed with the position of the ordoliberals, who insisted on the responsibility of the state for observing the following principles of the *Wirtschaftsordnung* (economic constitution):

1. Inviolability of the institution of private property (provides the possibility of decentralised decision-making directly by the entrepreneur);
2. Stability of monetary circulation (determined by an independent central bank);
3. Free access to the market for all economic entities and freedom to conclude contracts between them (except for those restricting the freedom of other economic entities, for example, cartel agreements);
4. Full property responsibility of economic entities for the results of their activities;
5. Constant economic policy (stable conditions reduce the risks and favour competition).

These principles formed the basis of the *Wirtschaftsordnung* in Germany, ensuring the functioning of a system of free, competitive prices.

It was the most difficult period of the post-war transformation of the economic system of Germany when L. Erhard managed not only to fully implement the basic principles of the *Wirtschaftsordnung*, but also convincingly proved that the concentration of state efforts on the formation and maintenance of a competitive environment has a more effective effect on economic development than direct intervention in economic processes.

As for the volume of social services provided by the state to its citizens, L. Erhard was convinced that social problems in society are solved not by redistribution, but by increasing economic efficiency. He believed that social policy should be focused on ensuring conditions under which long-term individual solutions in the social sphere can be implemented. He also said that as well-being and living standards increase, the need for state social care disappears, and its objects should be only those who need support and are unable to provide themselves with a living wage for objective reasons. Assistance to these groups of people should be provided in such forms as to encourage their return to active work.

This is what the basic principles of the concept of a “social market economy” look like. As for political practice, things are much more complicated here. After L. Erhard’s departure from the post of Federal Chancellor in 1966, new, often alien elements were repeatedly introduced into the concept of social market economy, its principles were deformed, which provoked inflated public spending, chronic budget deficit, growth of public debt and unemployment in the last decades of the twentieth century, which were partially overcome only in recent years.

The following main features are characteristic of the German economic system in its current form:

- The indicators of state activity in the economy are quite moderate by European standards. The total expenditures of the federal, land and local budgets in relation to GDP in recent years have fluctuated in the range of 45–46% of GDP. About 15% of the labour active population is employed in the public sector, and the total tax burden (taxes, fees and social contributions) is at the average European level and amounts to about 40% of GDP;
- A special place in the economy is occupied by small and medium-sized businesses, whose contribution to the country’s GDP is about 54%, and they employ 58% of the working people. At the same time, large companies account for over 80% of export volumes and R&D expenses;
- The country has achieved an R&D expenditure rate of 3% of GDP, while 65% of financing is provided by private companies;
- Germany is one of the few developed countries that has retained a significant industrial sector in the economy. Its share in the GDP structure is 25–26% (without construction). Key industries: machine-building complex (primarily automotive, machinery and equipment manufacturing, electrical engineering), chemical complex (including pharmaceuticals);
- Germany belongs to the “bank-based system” in contrast to the Anglo-Saxon countries focused on the financial market. A bank loan, not the issue of securities, is the main external source of business financing in Germany. The ratio of bank assets to GDP in Germany is about 260%, while the assets of US banks are less than 70% of GDP;
- The social system is financed in approximately equal shares from the budget, contributions from employees and employers. Employees and employers pay contributions to social insurance funds on a parity basis. Participation in the social insurance system is mainly mandatory;
- The country has developed a system of social partnership, which is reflected in the concept of “employee participation and co-determination (Mitbestimmung)”. In practice, this means that the work councils at enterprises are endowed with broad rights to defend their interests in negotiations with employers on wages and the whole range of issues related to working conditions. As a result, in terms of the intensity of the strike movement over the past ten years, Germany ranked ninth from the bottom among OECD countries;
- The German economy has a pronounced export-oriented character. The export quota for goods is 39% of GDP, and together with the export of services is 47.5%

of GDP. In several key industries, the share of export supplies reaches 70% or higher.

With all the existing problems, the German economic model demonstrates a solid margin of safety and relative resistance to external shocks. The country remains the leading economy of the EU: the share of Germany in the total GDP of the European Union (even before the UK's exit) is 21%, and in the eurozone—28%.

One of the main challenges for the socio-economic system of Germany is the unfavourable demographic situation. With a fertility rate of 1.57, the country does not provide simple reproduction of the population. Low fertility combined with an increase in life expectancy changes the age structure of the population, which increases the burden on the social system and creates a physical shortage of workers. If in 2017 the shortage of qualified specialists was recorded in 25 professional groups, then in 2020 it was already in 69 of them. The Federal Employment Agency believes that without the annual influx of 400,000 migrants, the German economy should not function normally.

The energy transition initiated by the government of G. Schroeder (1998–2005) and continued by the government of A. Merkel (2005–2021), aimed at abandoning nuclear and coal power and switching to the use of renewable energy sources, has a significant impact on the evolution of the German model. The coalition government which came to power in Germany after the parliamentary elections of 2021 intends to radically accelerate this process: close the last three operating nuclear power plants, completely abandon the use of coal by 2030, increase the share of renewable energy in electricity generation to 80% and reduce emissions of harmful gases by 65% compared to 1990. The coalition agreement featured a new formula to characterise the German model—“socio-ecological market economy” instead of the well-established formula “social market economy”. No one can give a clear answer to the question of what consequences all this should have for the competitiveness of the German industry.

2.2 French Model

The specificity of the French economic system is the traditionally high role of the state in the economy and social sphere. In post-war France, indicative planning and a broad system of social protection were organised, and as a result of three waves of large-scale nationalisation (1936, 1945 and 1982) by the mid-1980s, the largest nationalised sector of the economy among developed countries, including leading companies and banks, was formed. However, as a result of privatisation, which began in 1986, the state lost its dominant position in the country's industry and banking sector. Today, state-owned enterprises account for only 3% of the number of employees, about 20% of the value of fixed assets and 6% of value added (in 1985, 19, 47 and 25%, respectively).

Nevertheless, the size of government intervention in the economy is still large, which is associated with large amounts of government expenditure. They accounted for 56–57% of GDP in the pre-pandemic five years (64.4% in 2020, 59.2 in 2021), which significantly exceeded the average level of the euro area countries (about 47% of GDP), as well as the indicators of Germany, Belgium and the Netherlands (44–45, 52–53 and 42–43% of GDP, respectively) and traditionally close ties of the state with big business. On the one hand, France is characterised by a high level of state support for leading companies and banks, which is largely due to the traditional orientation of the country's policy to create “world champions” and maintain national control over them. On the other hand, the state still participates in the capital of many large national companies. Examples are EDF (the leading electricity producer in France, the world leader in the production of carbon dioxide-neutral electricity), ENGIE (a global energy company operating in the low-carbon energy and energy infrastructure sector, the main operator of gas infrastructure in Europe), Thales (a world leader in the production of military and civil electronic equipment for aviation and space, ground transport, defence and security), Safran (one of the world leaders in the development of innovative technologies, goods and services in the field of aviation, space, defence and security, the world's main manufacturer of helicopter engines), Renault (one of the world's leading carmakers), etc. The main objectives of state property management at the present stage include ensuring a sufficient level of control over strategically important enterprises with state participation (primarily the defence and nuclear industries) and promoting the development and strengthening of enterprises that play an important role in the growth of the national and European economy.

An analysis of France's economic mechanism using the indicators of the World Economic Forum shows that against the background of countries of a similar level of development, France stands out with high indicators of infrastructure (ninth place in the world), public health (seventh place), maturity of the financial system (14th place), market size (ninth place), innovation capability (ninth place). At the same time, the weaknesses of the French economic model include relatively low sub-indices of skills of workforce (35th place in the world), the efficiency of product markets (28th place) and the labour market (50th place), as well as the low value of some individual indicators, such as the burden of government regulation (65th place), conflict of interest regulation (68th place), digital skills among active population (54th place), high labour tax rates (141 place). In general, the global competitiveness index of France is 78.8 (out of a possible 100). According to this indicator, the country ranks 15th in the world and sixth in the EU after the Netherlands, Germany, Sweden, Denmark and Finland.

France is inside the group of countries with a very high level of human development, occupying, based on the data of the UNDP Human Development Report, the 26th place in the world (HDI is 0.901). It stands out among countries of a similar level of development for its high life expectancy at birth (82.7 years) and relatively low indicators of mean years of schooling and GNI per capita.

The key problems of France's economic development remain the chronic state budget deficit (since 1975, the budget has never been reduced to a positive balance and in 2021 reached –6.4% of GDP) and the build-up of public debt (59% and 113%

of GDP in 2000 and 2021, respectively); high tax burden (45.4% of GDP in 2020 relative to 33.5% of GDP on average in the OECD) and complex tax policy.

One of the main problems in the social sphere is the ageing of the population (by the end of 2021, the share of people over 65 in the total number of residents reached 20.7%), which cannot but affect the demographic burden of the older generation (33.6 in 2021 compared with 24.3 and 25.6 in 2000 and 2010, respectively) and create certain difficulties in the conditions of the social policy crisis (first, we are talking about the extensive social obligations of the state in conditions of permanent shortages of the social protection system). Another social problem is the significant unemployment rate (7.9% in 2021, one of the highest rates in the EU), while the consistently high unemployment rate among people under 25 (18.9% in 2021) attracts attention.

2.3 Italian Model

The Italian economic system is characterised not only by economic pluralism, i.e. the combination of private and public ownership but also by active state regulation, mainly through indicative planning.

The process of privatisation, which began in Italy later (1992) than in other European countries, is still ongoing, but although the state still arranges “sales”, it is still a leading player in various sectors, including the energy and gas industry (Enel, Eni), telecom (Rai), logistics and transport (Poste Italiane, ANAS, ENAV, FS, ITA Airways), mechanical engineering (Leonardo). For indicative planning, the Italian government annually adopts the so-called economic and financial planning document, which sets economic and social goals for the coming year (for example, reducing unemployment, reducing public debt and curbing inflation). The state budget is used as the main tool for implementing these goals, and for its implementation, a financial law (on changing tax rates, introducing tax benefits, etc.) is passed annually through parliament. Such a set of annual documents in Italy is called an “economic manoeuvre of the state”. The implementation of these documents is constantly hindered by the fact that Italy’s public debt does not cease to update historical highs—by the end of 2020, it amounted to a record 156% of GDP with a budget deficit of 9.5% of GDP.

Private property in Italy is characterised by the dominance of small and medium-sized enterprises, largely based on family and group ownership (cooperatives, associations of small enterprises). Moreover, the share of small enterprises (less than 100 employed) in GDP and the number of employed has been growing since the Second World War, while the share of large enterprises has been declining (their share in the number of employed is less than 10%). At the same time, many small enterprises are innovative companies that often work more successfully than large ones.

The active development of small and medium-sized businesses helps to change another important feature of the Italian model—the dominance of the Milan-Turin-Genoa industrial triangle. Small and medium-sized enterprises have become an integral characteristic of regions and regions considered peripheral (Triveneto, Emilia-Romagna, Tuscany, Marche and Umbria, in recent years also Campania and Sicily). Branched territorial economic systems in these regions (industrial districts, for example, Sassuolo) based on small and medium-sized enterprises and connected by mutual supplies and specialising in one industrial sector, have developed on the territory of these regions, mainly outside of large urban centres. These are mainly industries with frequently changing demand (textiles, clothing, shoes, etc.) or that are differentiated (car components, micromechanics, machine tools).

Italy is still characterised by regional disparities between the rich North and the catching up South (Mezzogiorno) and, as a result, by acute social contradictions and problems. For every euro of GNI in the South, 2 euros are produced in the North and Centre. About a third of the labour force is concentrated in the South, but unemployment there is more than 20% (among young people—more than 50%).

As in other EU countries, the Italian economy is largely export-oriented, and Italian exports are characterised by a large proportion of high-quality consumer goods produced by traditional sectors of the economy (clothing and footwear, food, furniture and household goods, other manufactured goods), as well as automotive and mechanical engineering products. As a measure to protect this and other Italian products from counterfeiting, back in the 1980s, the “Made in Italy” trademark was created, which is promoted by various associations and institutions, as well as government agencies.

2.4 Spanish Model

Spain is a country where the state plays a relatively low role compared to other European countries (budget expenditure in 2020 amounted to 42% of GDP). In 1985–1991, the government began large-scale privatisation, as well as restructuring of state-owned enterprises to increase their efficiency. After joining the EEC (the predecessor of the EU) in 1991, privatisation accelerated; it was second only to Great Britain in Western Europe in scale.

A characteristic feature of the Spanish economic system can also be called the predominance of micro-, small- and medium-sized enterprises, which employ almost 72% of the workforce (including 41% in microenterprises), which is noticeably higher than the EU average. However, they face some difficulties: they do not receive sufficient state support, have problems entering the markets of other EU countries, and lag behind companies from other EU member states in export orientation.

However, the level of transnationalisation of large Spanish companies is high. First of all, there is the Inditex group (which includes the brands Zara, Massimo Dutti, Oysho, Uterqüe, etc.), the banks Santander and BBVA, the energy corporation Iberdrola, the oil and gas concern Repsol, as well as the telecommunications giant

Telefonica. As a result, Spain's export quota showed rapid growth. Moreover, since 2011, in Spain there has been a predominance of exports over imports, but this overall surplus is achieved by a positive balance in trade in services, and if we take goods, imports still outnumber exports, which is explained by high energy costs, as well as a relatively small share in exports of goods with a high added value. The main exports of Spain are machinery and equipment, mineral products, pharmaceutical products, as well as products of the agro-industrial complex.

Spain is seriously lagging behind European leaders in the field of high technology, which may be because R&D spending is insufficient, amounting to 1.4% of GDP, while the EU average is 2.3%. As a result, Spain traditionally lags behind the EU as a whole in terms of such an indicator as the share of high-tech exports in all industrial exports—8% versus 16% (23% in France) in 2020.

Among the features of the economic model, one can highlight the great importance of the construction sector and real estate trade due to the high demand from foreigners, as well as the automotive industry due to the large presence of foreign MNCs in this industry (2.3 million cars were produced in 2020, this is second place in the EU after Germany).

There are also serious difficulties in the existing economic system, such as the traditional Spanish “disease”—unemployment (13.6% in the first trimester of 2022, more than 26% in 2013) and high public debt (in 2020 the public debt reached 148% of GDP). One cannot but mention territorial differentiation: economic life in the developed northern regions is comparable to the standard of living in the most developed regions of the EU, but the southern regions are noticeably lagging. Regional imbalances lead to the growth of centrifugal forces, which provokes political crises, such as the Catalan one in 2017.

2.5 Scandinavian Model

The term “Scandinavian model” refers more to the social than the economic sphere since the Nordic countries are very close primarily in the field of social policy.

Sweden was the social and economic leader of the region, and therefore the equivalent of the term “Scandinavian model” became the term “Swedish model”. It appeared in the 1960s, during the period of the most successful combination of rapid economic growth in Sweden with the policy of reforms, against the background of relative social conflict in society. The Swedish model became a symbol of the most developed form of the welfare state. The political basis for the Swedish model was the “historical compromise” between the government led by the Social Democrats (who were in power from 1932 to the present with interruptions in 1976–1982, 1991–1994 and 2006–2014) and big private capital. The model did not remain frozen and changed in the following decades. But the invariable goal of the model was to try to combine high economic growth and private ownership with high employment and fair distribution.

The term “Scandinavian (Swedish) model” was used in different meanings depending on what was put into it. This model is characterised by the specific relationship between labour and capital. The Swedish model was based on compromise and mutual restraint between the labour movement (trade unions and Social Democrats) on the one hand and big Swedish companies on the other. It all was based on the pragmatic realisation that small Sweden can survive in a big world with fierce competition only with the combined efforts of all parties. In this regard, for decades there has been a centralised system of collective bargaining in the field of wages with the participation of powerful trade union organisations and entrepreneurs as the main actors, and the policy of trade unions was based on the principles of solidarity between different groups of workers.

Another specific feature of the Swedish model was that two goals were actively highlighted in economic policy: full employment and income equalisation. To solve them, the state pursued an active policy on the labour market and maintained a very large number of employees (but not the size of assets) in the public sector to provide social services and redistribute income.

Since the early 1990s, the situation in Sweden has changed dramatically. As a result of strengthening the position of capital, the relationship between labour and capital has become different. Full employment and income equalisation are a thing of the past. The monopoly on power of the Social Democrats has also disappeared, the positions of trade unions and their policy of solidarity in the field of wages have weakened. The economic turmoil of the early 1990s in Sweden hurt the social insurance system. There has been a change in the goals of economic policy. The fight against inflation and the improvement of public finances have come to the fore. Tax, financial and pension reforms were carried out. The legacy of the Swedish model is a large public sector, a developed social policy, an active labour market policy and a fairly high degree of alignment.

2.6 Models of Central and Eastern European Countries

The typology of the economic systems of the eight countries of the Central and Eastern Europe (CEE) region is a complex issue. Unlike the countries of Western Europe, where the formation of national economic and social models took place evolutionarily over the past two centuries, the economic model in most CEE countries took shape only after these states appeared on the political map in 1918. Before the outbreak of the First World War, most of the modern CEE countries were constituent parts of different empires, from which they inherited their institutions. The socialist period also left an imprint on the development of their national economy and made it different from many other developing regions of the world. Therefore, Central European models are characterised by a combination of institutions of liberal (Anglo-Saxon) economy, institutions of socio-market economy (as in many countries of continental Europe) and institutions of the socialist period preserved in a modified

form. As a result, the economic system that has developed there has become in many ways an “institutional hybrid”.

Another common feature of CEE economic models is the strong presence of foreign capital in their economy. Most Central European companies of national origin are small and medium-sized businesses. The favourable geographical location of the countries of the region, the adoption of European legislation, the availability of cheap but skilled labour made these economies attractive to transnational capital primarily from more developed EU countries. As a result, the economies of the CEE countries became based on external factors of economic growth, primarily on the capital of MNEs. Unlike countries with liberal market economies, where the local stock market plays an important role in financing enterprises, and from countries with a social market economy, where capital flows mainly through the national banking system, in CEE countries the main sources of financing are foreign direct investments and bank loans from multinational banks. The role of the stock market in the region is small, and the importance of national banks is also insignificant.

A specific feature of the CEE countries is the development based on borrowed technologies. Foreign MNEs that have opened affiliates in CEE transfer the knowledge necessary to launch their enterprises, but at the same time, new technologies are still developed in the home countries. This means that access to new technologies is limited, and their transfer occurs only within the MNE affiliates, without having a significant impact on local innovation centres. R&D expenditures in CEE countries slightly exceed 1% of GDP.

The above analysis indicates that the CEE countries have an economic model different from the developed EU countries. Within the framework of the regional model described above, there are varieties. Among them, we can conditionally distinguish several: the model of the Baltic States, the model of the Visegrád Group countries (Hungary, Poland, Slovakia, Czech Republic) and the model of Slovenia.

3 Economic Strategy and Efficiency of Economic Development

After the end of WWII, the economies of Western European countries entered a period of stable recovery, quickly catching up with the United States. Initially, their economic growth rates exceeded those of the United States. By 1980, GDP per capita in the EU-15 was over 70% of the US level. However, in 1973–1995 there was a slowdown in the growth rates of both the European and American economies, largely since European countries had reached a level of economic development close to that of the United States. European politicians concluded that a more efficient single European market would help to overcome the economic downturn. The key measures of the Single Market Programme (SEM) to ensure the free movement of goods, services, labour and capital were completed by the beginning of 1993. According to some assessments, the completion of the Single Market contributed to

the growth of EU GDP by at least 5%. At the same time, GDP growth and labour productivity in the EU remained lower than in the US.

The fundamental obstacles hindering the economic development of the EU member states were identified as follows: insufficient development of science and technology, an inadequate employment structure and an ageing population. The Lisbon Strategy was launched in 2000 to improve the economic performance of the member states. The Strategy was adopted for 10 years and covered almost all aspects of the social and economic development of the EU countries. The strategy also contained target indicators, such as an increase in R&D spending up to 3% of the EU's GDP and the annual GDP growth rate at 3%. But the results of the implementation of the Strategy turned out to be very modest: R&D spending in the EU-27 amounted to 1.9% of GDP in 2008 and that was slightly lower than the indicator for the EU-15 in 2000, which was 1.92%. The EU GDP growth rate reached 3% by 2006 but substantially dropped after the 2008–2009 economic crisis. The slowdown in GDP growth was partially attributed to austerity programs and discretionary fiscal policies implemented by member states to reach required levels of budget deficit (not more than 3% of GDP) and public debt (not more than 60% of GDP). In general, the reasons for the failures in the implementation of the Lisbon Strategy laid in the lack of coordination of actions at the pan-European and national levels, the setting of sometimes mutually exclusive goals and a significant overload of tasks.

In 2010 the European Commission adopted the third version of the Lisbon Strategy, entitled “Europe 2020. A Strategy for Smart, Sustainable and Inclusive Growth”. “Smart growth” implied developing an economy based on knowledge and innovation. “Sustainable growth” should have resulted from more efficient use of energy resources, promotion of “green” technologies and a more competitive economy. “Inclusive growth” meant fostering employment of the population as well as social and territorial cohesion. The Strategy identified eight headline targets to be achieved by 2020 in the areas of employment, R&D, climate, energy, education, social inclusion and poverty reduction.

The EU managed to reduce greenhouse gas emissions to the required level and reach the target for the number of young people with higher education by the end of 2019. There were also good prospects for achieving the required level of employment and energy efficiency indicators. Nonetheless, there was little progress made regarding investment in R&D, poverty reduction and social inclusion.

The COVID-19 pandemic caused the deepest recession in Europe in 2020 since WWII (OECD 2021). The “Europe 2020” Strategy was superseded by the European Commission’s “Green Deal” aimed at establishing a carbon-neutral society by 2050 and implementing the Sustainable Development Goals (SDGs) adopted in a UN General Assembly in 2015 and to be reached by 2030. Thus the EU demonstrates the tentative shift from growth-oriented policies towards goals-based policies designed to reach the SDGs. The European Commission, instead of adopting multiannual growth strategies, now switches to an Annual Sustainable Growth Strategy (ASGS) approach based on a notion of competitive sustainability. Competitive sustainability implies environmental sustainability, productivity, fairness and macroeconomic stability.

Economic growth in the EU is forecast to moderate to 4% in 2022 and to 2.3% in 2023.

At the same time, it should be borne in mind that economic development and growth rates vary greatly across EU countries. The most developed group, the so-called “core” of the EU, includes around 10 countries, mainly located in the North of Europe (Germany, the Netherlands, Belgium, Luxembourg, etc.). The “periphery” is a more complex group, in which there are states with a constantly growing level of economic development such as Poland, the Czech Republic, Hungary, Slovenia, Malta, and countries that have been losing their economic positions, such as Greece, Portugal, Italy, Spain and some others.

As to the industrial structure of GDP, services are the largest economic activity and account for around 73% of the EU GDP while industry and construction account for 25% and agriculture just for 2%. The gross national savings rate in the EU is usually higher than in the US and it constituted 24.8% of GDP compared to 19% in the US in 2020. Investment shares of GDP are almost equal in the EU and USA and account for around 22% of GDP.

Labour productivity grows a bit less in the EU than in the US. By 2020 the average productivity growth rate since 2000 reached 1.18% in the EU and 1.56% in the US. During the same period, the productivity gap has been widening between the EU and the US. Thus, GDP per hour worked constituted USD 54.72 in Europe and USD 73.37 in the US in 2020. The growth rate of multifactor productivity is also higher in the US than in the EU on average. However, the spread of this indicator across countries is large. In 2018, the highest rate was in Ireland at 1.93%, while in Germany it was only 0.1% compared to 0.86% in the USA.

Low productivity growth has been a challenge for the world economy in general since the Great Recession of the 2010s and in these circumstances, it might be very problematic for the EU to address the productivity issue in the current decade.

4 Business Structure

The distinctive features of the correlation of business forms in the European Union are, first, the relatively high importance of small and medium-sized enterprises (SMEs) in employment and value-added production, with a more obvious weight of large businesses in exports and R&D. The public sector is relatively small here, but state ownership can be significant in certain industries, countries and strategically important MNEs. Foreign ownership is primarily characterised by relatively small volumes and the predominance of European companies that build their regional value chains. At the same time, according to all these parameters, the countries of the European Union are characterised by a high degree of differentiation.

The criteria for the breakdown of business activity by company size are presented in Table 1. As we can see, European statistics classify firms with more than 250 employees as large enterprises and pays great attention to internal differentiation of the activities of small and medium-sized enterprises (SMEs).

Table 1 Definition of SMEs in the EU

Category	Employees	Turnover	Balance sheet total
Micro SME	0 to <10	<€2 million	<€2 million
Small SME	10 to <50	<€10 million	<€10 million
Medium-sized SME	50 to <250	<€50 million	<€43 million

Source Annual Report on European SMEs 2020/2021. Background document. July 2021. <http://EA0521184ENN.en.pdf>

The weight of large businesses and SMEs in the value-added structure is distributed fairly evenly, however, one cannot but agree that there is a predominance of small and medium-sized businesses in employment (Table 2). Large companies dominate trade with third countries, accounting for more than 60% of all exports (curiously, the importance of large companies in intraregional trade is slightly less). There is a significant advantage for large businesses in high-tech industries (about 75% of value added) and R&D.

In general, this state of affairs can be explained by the effect of scale as well as more serious competitive advantage of large companies. It is more difficult for small and medium-sized businesses to compensate for costs and adapt to changes in the market, which is indirectly confirmed by serious negative trends in SME activity during the corona crisis. Big businesses also face problems including competition with large companies of developing countries (primarily China), as well as the complexities of the European regulatory system, which is very strict on the market monopolisation.

At the same time, there are many national peculiarities in the correlation of business forms in the EU (Table 3), which once again confirms the idea of an extremely differentiated state of affairs in the economies of the EU member states. It is noteworthy that in many EU countries SMEs perform social functions and accumulate

Table 2 Number of enterprises, value added and employment in the EU-27 by enterprise size class in 2020

	Micro SMEs	Small SMEs	Medium-sized SMEs	All SMEs	Large enterprises	All enterprises
Number	21,044,884	1,282,211	199,362	22,526,457	40,843	22,567,300
%	93.3	5.7	0.9%	99.8%	0.2	100.0
Value added, mln €	1,179,476	1,071,196	1,087,613	3,338,286	2,956,544	6,294,829
%	18.7	17.0	17.3	53.0	47.0	100.0
Employment	36,988,539	25,313,006	20,130,548	82,432,093	44,358,284	126,790,377
%	29.2	20.0	15.9	65.0	35.0	100.0

Source Annual Report on European SMEs 2020/2021. Background document. July 2021. <http://EA0521184ENN.en.pdf>

Table 3 SME share in value added and employment by selected EU country, % (2020)

	Greece	Spain	Hungary	Poland	Netherlands	Germany	France	Sweden
Value added	60.1	58.0	55.0	50.6	63.3	46.9	40.0	49.7
Employment	83.4	67.8	68.4	66.6	64.8	57.0	51.7	55.9

Source Author's calculations based on Eurostat data

employees, while large businesses are responsible for a significant part of economic activity.

The public sector in the EU countries is not very large (on average no more than 10% of GDP and much less than 10% of the employed), but it is extremely unevenly distributed between countries. For example, in Finland, the value added produced by state-owned companies accounts for more than 40% of GDP, similar values are noted in Sweden and Belgium. In other EU countries, the share of state-owned companies is much lower (for example, in Germany they account for no more than 6% of value added). Studies show that the number of state-owned companies is usually higher in countries with socialist heritage, as well as in states with more collectivist cultures. However, the waves of privatisation seriously reduce the weight of these companies in added value. For example, in France, known for its statist traditions, the public sector accounts for 6% of GDP. At the same time, many spheres (mining, energy, transport, telecommunications services and mail) are still more influenced by the state capital.

Of particular importance for EU countries are state-owned MNEs (for example, Volkswagen, Enel, Eni, Deutsche Telekom, EDF, Engie and others), which account for about 30% of all state-owned MNEs in the world. Among the largest MNEs of this kind, companies of EU states also dominate. State participation in such companies is largely due to the need to maintain their competitiveness and concentrate resources, because it is large companies that are the main players in world markets today, where European big business is facing increasing competition from the largest MNEs of the USA, China and other countries.

Finally, a separate issue is the importance of foreign ownership in the EU member states (this includes enterprises that are 50% owned by a foreign owner). In general, in the EU, such enterprises account for less than a quarter of the value added, but regional differentiation is also very high (Fig. 1).

And if, in Ireland the main role as foreign investors is played by US companies, then in other EU countries the importance of companies from European countries themselves is high.

5 Human Capital and Innovations

Human capital is a key instrument of the EU's innovative development, an important factor in preserving and strengthening the group's international competitiveness.

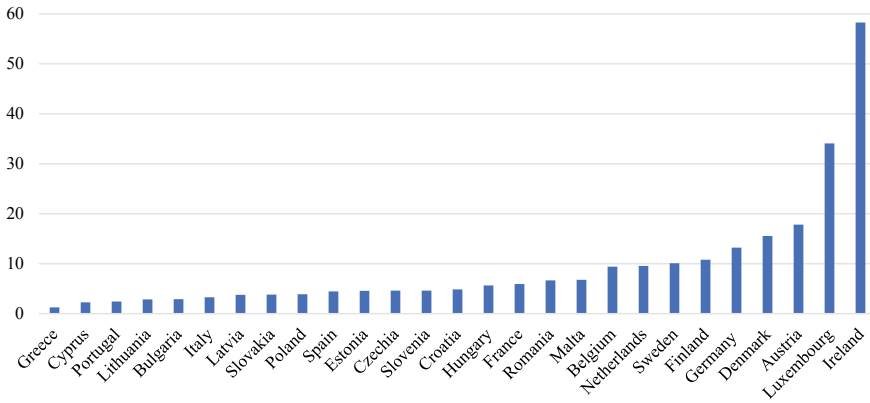


Fig. 1 Share of foreign-controlled enterprises in the non-financial business by country, % (Source Author’s calculations based on Eurostat data)

5.1 Demographic Resources and Demographic Problems of the EU

The main demographic problems of the EU are the reducing population of the region (primarily as a result of low or negative rates of natural population growth) and population ageing, which increases the demographic burden and all types of social costs associated with it.

The population of the EU as of January 1, 2021, was about 447 million people, or 5.8% of the world’s population. The EU population as a whole has been traditionally growing (the exception was 2020 when it decreased by 0.7%), but its growth rate is very low (1.5–2.6% in 2015–2019), and the fertility rate (1.53 in 2019) does not even provide simple reproduction of the population in all member countries. Since 2015, the growth rate of the EU population has been determined solely by the migration balance (Fig. 2).

High negative values of natural growth are demonstrated primarily by almost all new EU member states, as well as countries in the southern part of the European region (Italy and Greece). Among the leaders in natural growth, only Ireland stands out from the large countries (4.9% in 2020).

Another important demographic problem of the EU is the increasing proportion of older persons in the total population (see Table 4) and, as a consequence, the population ageing (the median age of the European population reached 44.1 years in 2021).

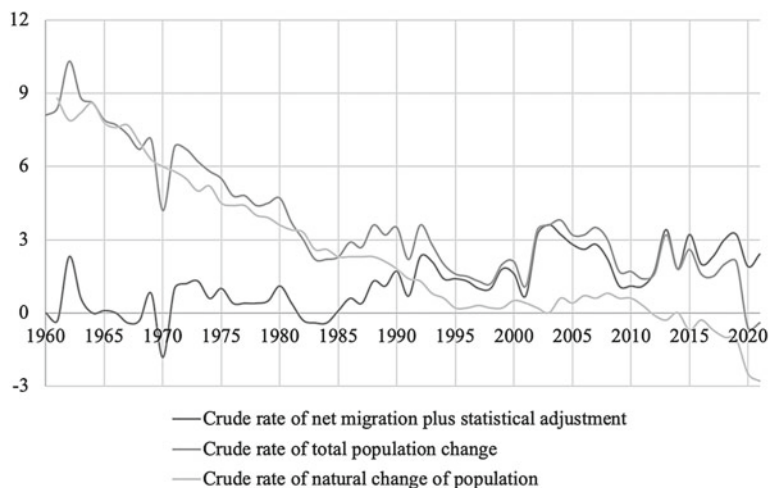


Fig. 2 Population rate change in EU-27, % (Source Eurostat data)

Table 4 The share of the population over 65 years of age in the total population of the EU, %

	2010	2014	2018	2021
EU-27	17.6	18.7	20.0	20.8
Belgium	17.2	17.8	18.7	19.3
Germany	20.7	20.9	21.4	22.0
Ireland	11.2	12.6	13.8	14.8
Greece	19.0	20.5	21.8	22.5
Spain	16.8	18.1	19.2	19.8
France	16.6	18.0	19.7	20.7
Italy	20.4	21.4	22.6	23.5
Netherlands	15.3	17.3	18.9	19.8
Austria	17.6	18.3	18.7	19.2
Poland	13.6	14.9	17.1	18.7
Portugal	18.3	19.9	21.5	22.4
Romania	16.1	16.5	18.2	19.3
Finland	17.0	19.4	21.4	22.7
Sweden	18.1	19.4	19.8	20.1

Source Eurostat data

5.2 Labour Resources and the Labour Market

The unfavourable demographic dynamics have decreased both the absolute number of the working-age population (15–64 years old) and its proportion in the total population of the EU. However, although the proportion of the working-age population decreased from 67% in 2010 to 64.2% in 2021, the proportion of the economically active population in the total number of labour resources increased from 69.7% in 2010 to 72.4% in 2020 due to the implementation of various employment incentive programs and the involvement of people beyond the boundaries of the upper working age.

Nevertheless, unemployment in the EU remains at a higher level than in the US. If in 2007–2021, it fluctuated in the range of 6.7–11.3% of the economically active population in the EU, then in the USA it was in the range of 3.7–9.0%. One of the reasons for relatively high unemployment is the inflexibility of the labour market and, above all, the procedure for hiring and firing. In 2021, a high level of stagnant unemployment (from 5.4 to 9.2%) was recorded in Greece, Italy and Spain, while in the Netherlands, Denmark, Poland and the Czech Republic, stagnant unemployment was less than 1%. A separate problem is youth unemployment (persons under 25), the level of which was 16.6% in 2021, although its size varies significantly across countries: from 7 to 10% in Germany, Czech Republic, the Netherlands, and Malta to 35% in Greece and Spain. Another reason for high stagnant and youth unemployment is the low mobility of the labour force in the EU: in 2020, only 5 out of 100 people of working age in the EU were born in another country of the union.

5.3 Educational, Scientific and Information Resources

The EU's educational resources can be considered to be sufficiently developed. Only public spending on education is 5% of GDP, although the country's differentiation is very large (see Table 5). As a result of the implementation of Strategy 2020, the EU countries could increase the share of people with higher education aged 25–34 years to 41%. By 2030, it is expected to increase the proportion of people with higher education to 45%, but this figure lags far behind the world leaders (more than 60% in South Korea, Canada and Russia). Employment of graduates remains a problem, it is especially acute in Spain, Italy and Greece, where the employment rate of people aged 20–34, who have completed their studies in the last 1–3 years, is less than 50%. On the contrary, in the “core” countries of the EU, this figure exceeds 80%.

Coverage (more than 82% of the population at the appropriate age) and the quality of secondary education in the EU are at a high level, with most EU member states having a PISA index equal to or higher than the OECD average. However, the situation is complicated by the fact that 17.6% of the population aged 20–34 do not study and do not work, which negatively affects the quality of human capital.

Table 5 Some educational and scientific indicators in the EU-27 Member States, 2021

	Government expenditures on education, % GDP, 2020	Population by educational attainment level, % people aged 25–34	Internet access, % households	R&D expenditures, % of GDP, 2020
EU-27	5.0	41.2	92	2.32
Belgium	6.6	50.9	92	3.52
Germany	4.7	35.7	92	3.14
Ireland	3.1	61.7	97	1.23
Greece	4.5	44.2	85	1.49
Spain	4.6	48.7	96	1.41
France	5.5	50.3	93	2.35
Italy	4.3	28.3	:	1.54
Netherlands	5.3	55.6	99	2.29
Austria	5.1	42.4	95	3.22
Poland	5.2	40.6	92	1.39
Portugal	5.0	47.5	87	1.58
Romania	3.7	23.3	89	0.47
Finland	5.9	40.1	97	2.94
Sweden	7.2	49.3	93	3.51

Source Eurostat data

The ICT sector accounts for about 3.8% of the EU countries' GDP. At the same time, the general level of society informatisation is very high. 92% of households have access to the Internet, and the differentiation of member countries by this indicator is not very high. At the same time, informatisation looks somewhat more diverse in everyday life. Less than 50% of individuals in France, Germany, Italy and Poland use the Internet for social networking versus 80% in Denmark. Significant differentiation is noted in the use of the Internet for providing services and in online sales.

5.4 Innovative Potential

As a result of the deindustrialisation of most EU countries, the proportion of industry in the structure of value added in the EU fell below 20%, and the proportion of employed was only 16%. Only 4.5% of the employed in the economy work in high-tech industries. Taking into account the fact that the main competitive industries of key EU countries are concentrated in the areas of medium technology, the innovative potential of the grouping is limited.

The EU countries failed to achieve the goal set in the 2020 Strategy to achieve R&D spending of 3% of GDP (for 2020 they amounted to 2.3% of GDP), while country

indicators varied greatly (see Table 5). One of the features of R&D spending in the EU is the dominance of the business enterprise sector in expenditure on R&D (2/3 of expenditure). At the same time, only the 250 largest enterprises account for two-thirds of business expenses, which indicates a serious concentration of innovation activity. In general, the importance of the EU’s innovation potential in the world is gradually decreasing (in 2020, EU countries accounted for only 5% of global patent registration, compared to 21% in 1985).

According to the EU Innovation Scoreboard, the EU lags far behind the global innovation leaders represented by the United States, South Korea, Canada and Japan. At the same time, there is also a great differentiation between member countries. Only 4 countries belong to the group of innovative leaders and 7 more countries belong to the group of strong innovators (Fig. 3). They also occupy leading positions in the Global Innovation Index (Sweden is in 2nd place, the Netherlands in 6th, Finland in 7th). Other countries are much lower in the regional and global hierarchy.

The Strategic Plan for Innovative Development 2020–2024 is built around the “Green Transition” announced by the European Commission, which means extending environmental principles to the activities of the EU’s scientific and innovation programs, but at the same time, it retains its binding to the old targets of the 2020 Strategy (achieving and gradually increasing the ceiling of R&D expenditures of 3% of GDP). However, the vagueness of these goals and the insufficient financial base in several countries, coupled with the limited market for innovative products, suggest that we should not see a sharp increase in the EU’s innovation potential.

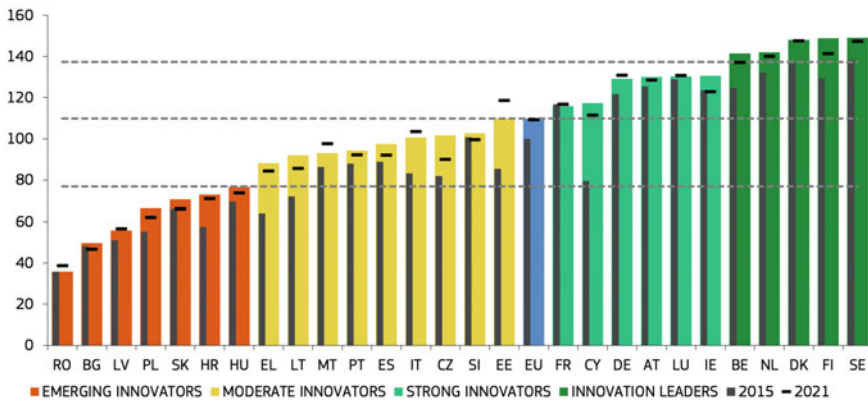


Fig. 3 EU-27 Innovation Systems Performance (Source EU Innovation Scoreboard 2022. https://ec.europa.eu/info/research-and-innovation/statistics/performance-indicators/european-innovation-scoreboard_en)

6 Real Sector

The real sector of the EU economy produces slightly more than 75% of the added value in the EU, accumulating almost 80% of the employed. In recent years, it is the non-financial sector of the economy that has made the main contribution to the growth rates of GDP and gross capital formation in the EU. EU statistics usually use the concept of the non-financial business economy to analyse the structure of the real sector, which is in fact a narrower economic category. Nevertheless, based on the data on its structure (Fig. 4), some conclusions can be drawn about the *t* scale of key branches of the entire real sector.

The real sector of the EU economy has very high international competitive advantages. Nevertheless, it is characterised by several problems: relatively weak dynamics of domestic demand, difficulties in accessing credits in many EU countries (especially for SMEs), structural imbalances in the labour market, and chronic underfunding of R&D projects. 2021–2022 revealed new problem areas: disruption of supply chains and dependence on some critical goods.

Such difficulties are compounded by some additional imbalances in certain areas of economic activity. Although agriculture accounts for slightly less than 4% of the employed in the economy and about 1.3% of EU GDP, the EU expenditures on the common agricultural policy (CAP) still account for more than 1/3 of the total EU budget spending. The current EU agricultural policy is based on some instruments - target price, intervention price, import levy, export subsidies and direct payments to farmers. In the world markets, the EU countries' positions in the production of cereals (about 10%), potatoes (13%), pork (19%), and milk (19%) are very strong.

The trend towards deindustrialisation remains a fundamental problem of the EU economy (Table 6). Nevertheless, the industry continues to form the material basis for economic development, which was the reason for the reanimation of the concept

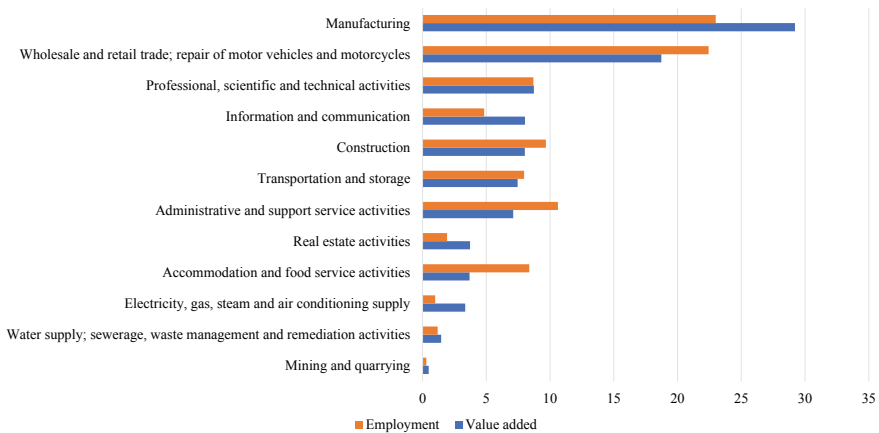


Fig. 4 Structure of non-financial business economy in the EU, % (Source Eurostat data)

of “industrial policy” in the EU. Back in 2014, a strategy for the reindustrialisation of the union was adopted (the goal was to achieve 20% industry share in GDP by 2020). In 2020, the unfulfilled strategy was replaced by a new EU Industrial Development Strategy. This time, the European Union decided to work in the following areas: the stability of the internal market (ensuring labour mobility, standards’ harmonisation, the formation of 14 industrial ecosystems, etc.), strengthening the strategic autonomy of the EU (especially in the field of critical goods), accelerating the “twin transition” (green and digital).

Most of the industry in the EU is concentrated in the production of transport equipment (17%), food (16%), metals and metal products (14%), machinery and equipment (10%), chemical products (8%), which makes its structure quite vulnerable compared to competitors, where the share of high-tech products is much higher. The export of high-tech goods in the EU accounts for 16% of commodity exports, compared to 31% in China. The majority of high-tech products in the EU are produced in pharmaceuticals (31%) and telecommunications equipment (21%), computers account for no more than 5%.

More than a third of all industrial production is provided by Germany. It is the only major EU country that has avoided deindustrialisation, and remains among the world leaders in industrial production (see Table 7), while other EU states are gradually losing their positions.

Energy transition remains a big problem for the future development of industry and the entire real sector of the EU economy. The EU, following the European Green Deal, plans to become a carbon-neutral economy by 2050 and radically reduce

Table 6 Industry without construction share in value added, %

	2010	2015	2020
EU-27	17.7	18.2	17.5
Belgium	16.0	15.0	14.8
Germany	23.0	23.0	21.3
Ireland	21.9	36.5	35.9
Greece	9.9	12.3	13.3
Spain	15.0	14.8	14.7
France	12.4	12.8	11.8
Italy	16.8	17.0	17.6
Netherlands	15.0	14.4	12.9
Austria	19.7	19.6	19.2
Poland	21.5	23.0	21.3
Portugal	14.8	15.9	15.1
Romania	30.0	24.2	20.3
Finland	20.5	17.7	17.4
Sweden	18.8	16.6	15.2

Source Eurostat data

dependence on traditional types of energy carriers. However, it seems that it will be difficult to do this. Firstly, the EU’s fuel and energy balance are still largely provided by fossil fuels: oil and gas together account for more than half of the energy supply on the market (Fig. 5).

Secondly, the high energy dependence is a serious issue for the EU: 60% of the energy sources consumed in the EU are imported. For oil, this figure exceeds 95%, for gas it is 90%, and for coal, 40%. Coupled with the rising prices for these energy carriers, as well as the difficulties of additional investment in the production of renewable energy sources (multiplied by the vicissitudes of weather conditions), the prospects for the energy transition in the EU seem very remote at the moment. In 2021, amid those problems, particular EU member states even increased the use of coal. The same situation is observed in 2022 following energy crisis in relations with Russia (EU ban on importing Russia’s oil and coal). Nevertheless, in its political rhetoric and strategic documents on various areas of activity, the EU increasingly links the achievement of development goals with the energy transition and the reduction of the carbon footprint of the economy.

Table 7 The index of the industrial competitiveness of the leading EU industrial countries (the position in the world is added in parentheses)

	1990	1994	1998	2002	2008	2012	2016	2018	2020
France	0.36 (6)*	0.39 (6)	0.40 (5)	0.38 (7)	0.35 (8)	0.30 (10)	0.28 (11)	0.24 (13)	0.21 (12)
Germany	0.60 (1)	0.61 (2)	0.62 (1)	0.60 (1)	0.62 (1)	0.55 (1)	0.55 (1)	0.47 (1)	0.41 (1)
Netherlands	0.30 (10)	0.32 (10)	0.34 (10)	0.31 (11)	0.34 (10)	0.32 (9)	0.30 (8)	0.25 (10)	0.24 (10)
Italy	0.39 (4)	0.42 (4)	0.43 (4)	0.39 (4)	0.37 (6)	0.30 (11)	0.28 (10)	0.24 (11)	0.22 (11)

Source UNIDO’s Competitive Industrial Performance Index

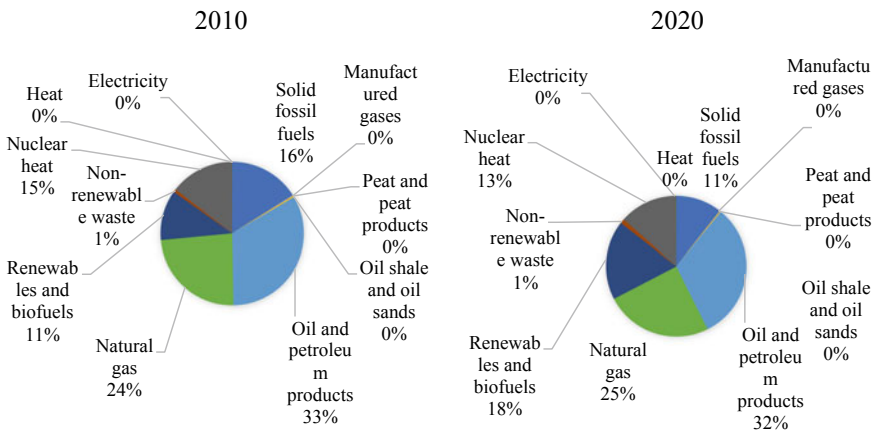


Fig. 5 EC total energy supply by the source of energy, % (Source Author’s calculations based on Eurostat data)

7 Financial Sector

7.1 Economic and Monetary Union

In 2002, 12 EU countries (France, Germany, Italy, Belgium, the Netherlands, Luxembourg, Ireland, Greece, Spain, Portugal, Austria, Finland) introduced the single Euro currency into cash circulation (De Grauwe 2020), thereby completing the third stage of constructing the Economic and Monetary Union (EMU). All EU countries except Denmark have to switch to the euro sooner or later. In 2019, the euro area consisted of 19 EU countries except for Denmark, Sweden, Poland, Hungary, the Czech Republic, Romania, Bulgaria and Croatia. The transition of EU member states to the euro is impossible without the fulfilment of nominal convergence criteria, which are enshrined in the Maastricht Treaty of 1992. The possibility to return to the use of their national currency is not foreseen in EU documents. The countries that are not part of the EU, namely Andorra, the Vatican, Kosovo and Monaco use the euro based on special agreements with the European Central Bank (ECB), and Montenegro switched to using the euro unilaterally (Table 8).

The main benefits of using a single currency include the elimination of transaction costs related to currency exchange and exchange rate uncertainty as well as having a currency with a higher level of internationalisation. The main risks might be associated with the loss of countries' independence in conducting monetary policy and the inability to manage the exchange rate.

The EMU governance structure consists of two pillars: a supranational monetary policy and a common economic policy based on intergovernmental cooperation.

Table 8 Maastricht convergence criteria

Criteria	Benchmark
Inflation	Not more than 1.5% points above the three best-performing member states in terms of price stability
Interest rates on long-term government bonds	Not more than 2% points above the three best-performing member states in terms of price
Budget deficit	Not more than 3% of GDP
Government debt	Not more than 60% of GDP
Exchange-rate stability	The exchange rate of the national currency should be fixed to the euro without allowing any devaluations, and the limits of deviations should not exceed $\pm 15\%$. In other words, the country should participate in the Exchange Rate Mechanism-II
National Central Bank	The National Central Bank should be independent, and its charter is aligned with the charter of the European System of Central Banks

The common economic policy applies to all EU Member States and is coordinated by the EU Council based on the recommendations of the European Commission. The issues related to the development of the situation in the euro area countries are discussed within the framework of the Eurogroup—regular meetings of the Economy and Finance ministers of these states. The decisions of the Eurogroup require the approval of the EU Council.

The sovereign debt crisis in a number of euro area countries (Greece, Portugal, Spain, Ireland, and Cyprus) that broke out in the year 2010 could result in the collapse of the monetary union. Therefore, the EU leaders had to start strengthening the economic pillar of the EMU, which led to the establishment of fiscal, financial and banking unions. Within the framework of the fiscal union, the stability of public finances is ensured through the application of the Stability and Growth Pact, while the economic stability is reached through the control over national economic development programs. The Banking Union was created to supervise the large systemically important banks of the euro area and restructure the troubled banks. The financial union develops the integration of financial markets necessary for more effective functioning of the monetary union. The establishment of a separate fiscal facility for the euro is at the final stage of approval.

The difficulties of managing the EMU largely come from the different levels of economic development of its member States and the unwillingness of some governments to bear financial costs as a result of its other participants' irresponsible economic policies.

7.2 Monetary Policy

Monetary policy for the euro area is the exclusive competence of the EU and is coordinated by the European System of Central Banks, consisting of the European Central Bank (ECB) and the national central banks of the EU member states. The single monetary policy for the euro area is being developed and implemented by the Eurosystem which consists of ECB and NCBs of the EU countries which use the euro. The primary objective of the ECB is the maintenance of price stability that is interpreted as a rate of inflation close to but below 2% over the medium term in the euro area. The Governing Council of the ECB formulates and takes decisions, reserve requirements and liquidity provisions. The Executive board gives instructions to the NCBs which implement the monetary policy decisions, while the national central banks are responsible for their implementation. The ECB is characterised by a rather high degree of independence from EU institutions and national governments in decision-making and it is one of the most politically independent central banks in the world.

The main challenge of monetary policy implementation in the euro area is that it may not correspond to the economic situation of all the participating countries. For example, a single interest rate may be too high for countries with low inflation or, conversely, too low for countries with high inflation. In this case, the difficulties of macroeconomic adjustment fall on the shoulders of the national governments.

The Trans-European Automated Real-time Gross settlement Express Transfer System 2 (TARGET2) improves cross-border bank transfers and fully unifies existing national payments systems within the euro area. The system contributes to the smooth operation of the euro money market and better monetary policy transmission.

The Exchange Rate Mechanism II (ERM-II) established in 1999 serves for the management of exchange rates of non-euro area member states. EU member states can join ERM-II on a voluntary basis but participation in ERM-II for at least two years is obligatory once a country decides to join the euro area. Participation in ERM-II means that a central rate against the euro is set and a fluctuation band around the central rate is limited to $\pm 15\%$ (narrower fluctuation band is also allowed). In 2020 Bulgaria and Croatia joined ERM-II as a necessary step on the way to the euro adoption.

The ECB turned out to be under serious pressure in times of the global economic and financial crisis and then the sovereign debt crisis. The ECB is strictly prohibited from financing the governments and thus acting as a lender of last resort. The only way to address liquidity shortages and low inflation rates was a launch of the Asset Purchase Programme. The ECB started to buy private and public securities on the secondary market under the APP in 2014. Monthly net purchases under the APP varied from 15 to 80 bln euros. That measure had an overall positive impact on the economic situation in the euro area though the average inflation remained at an.

In 2021, the price growth resumed and amounted to 4.6% in the fourth quarter. Such a round of inflation is associated primarily with the suspended requirements for the implementation of the Stability and Growth Pact and a stimulating fiscal policy in the Member States against the background of the fight against the consequences of the COVID-19 pandemic, as well as rising energy prices due to increased geopolitical uncertainty. The projected inflation values for 2022 and 2023 are 2.2 and 1.4%, respectively. Therefore, the ECB decided in December 2021 to end net asset purchases under the Pandemic Emergency Purchase Program as of 1 July 2022.

In July 2021, the ECB Governing Council unveiled a new Monetary Policy Strategy, which assumed a benchmark for a symmetrical inflation target of 2% per year in the medium term and included climate change issues in all measures aimed at maintaining price stability. A symmetrical target means that both an increase in inflation and a decrease in it relative to the 2% target is undesirable. At the same time, the ECB confirmed that interest rates are the main instrument of monetary policy. The next revision of the ECB Strategy is scheduled for 2025.

The ECB is actively involved in the creation of a digital euro, which should be issued in addition to paper euros. At the same time, the specific timing of its introduction has not yet been indicated, and the ECB and the National Banks are studying the feasibility and conditions for such a transition.

7.3 Fiscal Policy

According to the theory of optimal currency zones, the coordination of national fiscal policies is an important element for the stable functioning of the single currency area.

Table 9 Some fiscal indicators of some EU member states in 2021

	General government revenue, % GDP	General government expenditure, % GDP	General government balance, % GDP	General government gross debt, % GDP
EU-27	46.0	51.5	-4.6	87.9
Eurozone	47.2	52.3	-5.1	95.4
Belgium	49.9	55.5	-5.6	109.2
Germany	47.5	51.3	-3.7	68.6
Ireland	23.2	24.8	-1.7	55.4
Greece	50.0	57.4	-7.5	194.5
Spain	43.8	50.6	-6.9	118.3
France	52.5	59.0	-6.5	112.8
Italy	48.1	55.3	-7.2	150.3
Netherlands	44.0	46.6	-2.6	52.4
Austria	50.0	56.0	-5.9	82.3
Poland	42.4	44.2	-1.8	53.8
Portugal	44.9	47.8	-2.9	125.5
Romania	32.8	39.9	-7.1	48.9
Finland	52.8	55.5	-2.7	72.4
Sweden	49.4	49.5	-0.1	36.3

Source Eurostat data

However, the EU Member States have different parameters of budget systems (see Table 9), which complicates the necessary coordination. As a result, the architecture of the EMU turns out to be unfinished, since fiscal policy remains the prerogative of the member states.

The EU leaders are trying to overcome the difficulties of creating a fully fledged system of public finances' redistribution between countries at the supranational level gradually, primarily based on the Stability and Growth Pact.

The Stability and Growth Pact was adopted in the EU in 1997. It became the basis for the system of financial regulation and coordination of the member States' fiscal policies. Following the Pact, if a country reaches an excessive budget deficit (more than 3% of GDP) under the relevant procedure, the Council of the EU can impose a fine on the country (0.5% of GDP in the form of a deposit in the accounts of the EU general budget) on the recommendation from the Commission. After the 2011 reform, the Council's sanctions can also be imposed at the preventive stage, and the state debt (no more than 60% of GDP) is also introduced as an additional criterion. Curiously, countries outside the eurozone should also comply with the provisions of the Pact (they

are subject to other sanctions, for example, in the form of termination of payments from structural funds).

In addition to the Pact, there are other types of supranational monitoring of national budgets in the EU, for example, the European Commission evaluates draft national budgets. However, there are still many problems concerning fiscal coordination including low tax harmonisation (for all countries, only the minimum VAT rate of 15% applies) and the high general government gross debt, primarily in Southern European countries (see Table 9).

The general (supranational) budget of the EU has existed since the Treaty of Rome (1957) and is formed at the expense of contributions from EU member states. It finances only activities within the framework of the EU's common policy (as opposed to national budgets) and currently does not exceed 1.2% of the EU's total GNI. Its execution is carried out by structural funds (for example, the European Fund for Regional Development) within the framework of pan-European programs (for example, "Erasmus" and "Galileo"). At the same time, CEE countries are net recipients and receive from the budget more than they pay in, and developed countries (primarily Germany) pay in the budget more than they receive. This imbalance often causes contradictions between countries. But in general, the role of the General Budget has strengthened after the corona crisis, now supranational fiscal issues are closely linked to the implementation of the strategic priorities of the EU's economic development.

8 External Sector

The importance of the EU in the global economy is extremely high, although it has seriously decreased in recent decades (Table 10), especially in terms of its global GDP (PPP) share (about 15%). The EU still accounts for about 1/3 of all flows of goods, services and capital in the sphere of trade and international capital movement, but in this case, their movement within the EU itself is taken into account. If we do not take into consideration the international trade of EU countries with each other, then the weight of the EU in world exports will fall to 15% (but in trade in services this share will be the same 30%). The EU leaders are particularly concerned about the gradual loss of the EU's leadership in the international exchange of knowledge and technology, as indirectly evidenced by the decline in its share in global patent application.

The EU has a high degree of economic openness: the export quota on average for the EU goes beyond 50% of GDP, and the level of import tariffs (simple average) does not exceed 3% compared with 6% on average worldwide. But the level of cross-country differentiation of the economic openness is high (Fig. 6).

Table 10 EU's participation in the world economy

	1957	1973	1981	1986	1995	2004	2007	2013	2019	2020
Member-countries, number	6	9	10	12	15	25	27	28	28	27
GDP current prices share, %	22 ^a	25	23	24	27	26	25	18	18	18
World exports share, %	21	43	31	37	40	41	38	33	35	32
World inward/outward FDI stock share, %	–	–	30/38	38/40	–	38/44	–	29/35	–	25/31
World migration share, %	–	19	18 ^b	17	19	22	23	22	22	20
Patent application by residents, share, %	–	–	–	21	14	11	11	5	5	4

Source Author's calculations based on World Bank, UNCTAD and IOM data

^a1970

^b1980

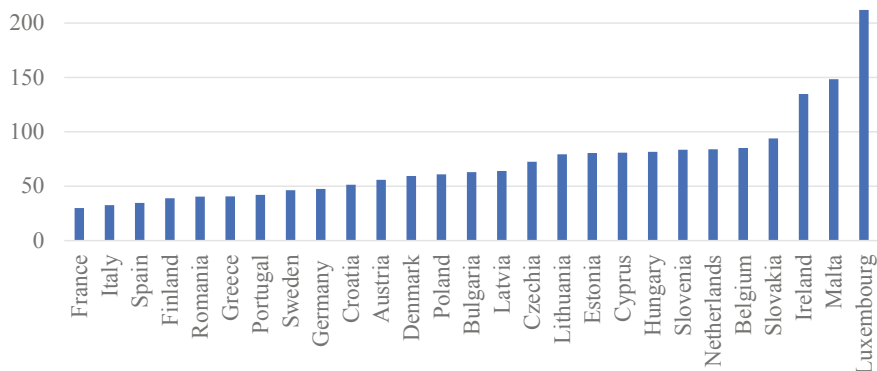


Fig. 6 Trade Openness (exports to GDP) by EU country, % (Source Eurostat)

8.1 Foreign Trade

The EU traditionally has a positive foreign trade balance both in goods (it turned out to be negative only in 2020) and in services, although this picture is violated by differentiated data on member countries.

The EU's main trading partners include the USA, China, Great Britain, Switzerland, Russia, Turkey and Japan (Table 11).

The sectoral structure of trade (see Table 12) demonstrates a high degree of involvement of EU countries in international production chains, as well as the dependence of EU countries on international supplies.

The EU's trade policy belongs to the exclusive competence of the Union (is decided on a supranational level) and is characterised by an extensive set of tools, especially protective ones (see the box).

Table 11 EU's main trading partners in 2021

Merchandise exports	Share, %	Merchandise imports	Share, %
United States	18	China	22
United Kingdom	13	United States	11
China	10	Russia	8
Switzerland	7	United Kingdom	7
Russia	4	Switzerland	6
Turkey	4	Turkey	4
Japan	3	Norway	4

Source Eurostat data

Table 12 EU’s main trading product groups in 2021

Merchandise exports	Share, %	Merchandise imports	Share, %
Machinery and vehicles	38	Machinery and vehicles	32
Other manufactured goods	23	Other manufactured goods	25
Chemicals	21	Energy	18
Food & drink	8	Chemicals	13
Energy	5	Food & drink	6
Raw materials	3	Raw materials	5

Source Eurostat data

EU trade defence instruments

- Common customs tariff: The ‘Common Customs Tariff’ (CCT) therefore applies to the import of goods across the external borders of the EU. The tariff is common to all EU members, but the rates of duty differ from one kind of import to another depending on what they are and where they come from.
- Quantitative restrictions (quotas): Tariff quotas approved based on Article 31 of the Treaty of the Functioning of the European Union constitute an exception to the normal state of affairs since they permit, during the period of validity of the measure and for a limited quantity, the total (total suspension) or partial waiver (partial suspension) of the normal duties applicable to imported goods (antidumping duties are not affected by these suspensions).
- Anti-dumping and countervailing measures: A non-EU company is ‘dumping’ if it exports a product to the EU at a price lower than the normal value of the product. The normal value is either the product’s price as sold on the home market of the non-EU company or a price based on the cost of production and profit.
- Anti-subsidy: A subsidy is a financial contribution made by (or on behalf of) a government or a public body that gives the recipient a benefit. The EU can impose duties to counteract a subsidy, but only if it is limited to a specific firm, industry or group of firms or industries. Export subsidies, and subsidies based on using domestic goods over imported ones, are specific.
- Safeguard clauses: Safeguards are intended for situations in which an EU industry is affected by an unforeseen, sharp and sudden increase in imports.
- Rules of origin: Rules of origin determine where goods originate, i.e. not where they have been shipped from, but where they have been produced or manufactured. As such, the “origin” is the “economic nationality” of goods traded in commerce. The tariff classification, value and origin of a good are determining factors based on which the customs tariff treatment is applied. For customs matters, there is a distinction between two types of origins, notably non-preferential origin and preferential origin.

Source European Commission

Table 13 International investment position of the EU in 2021, \$ mln

	Assets	Liabilities	Net
International investment position	33,1133.4	32,685.6	-552.2
Direct investment	11,555.0	9804.0	1751.0
Portfolio investment	12,651.0	14,603.8	-1979.2
Financial derivatives	1630.1	1668.0	-37.8
Other investments	6296.6	6582.8	-286.2

Source Eurostat data

Already since 1968, the customs union has been operating in the union, and the level of customs protection has been constantly decreasing. At the same time, non-tariff regulation of the EU is very developed: licences, standards, and phytosanitary standards are applied for many product categories. As an example, the REACH regulation concerning the import of chemical products can be cited. According to the regulation, any importing company must comply with the following: registration of chemical compounds; evaluation of technical dossier and/or substance; issuance of permits for placing on the market and use; restrictions on production, placing on the market and use; agreed hazard classification and warning labelling; access to information.

8.2 International Capital Movements

The EU is traditionally one of the largest exporters and importers of capital in the world, as a result of which its international investment position is characterised by very high indicators (see Table 13).

The EU member states are characterised by a different nature of participation in the international capital movements, which can be illustrated by the current account balance, whose negative value leads to net capital imports from the country, and a positive value leads to net capital exports (Fig. 7).

The main partners of the EU in accumulated direct investment primarily include the United States, which indicates a high degree of interdependence of their economies (Fig. 8). We also note the rather great importance of offshore financial centres.

8.3 The Euro in the Global Economy

The single currency of the EU has long been considered a real alternative to the US dollar, but it has not been able to create a real alternative to it. Today, the euro accounts for no more than 20% of international reserves, but in the structure of

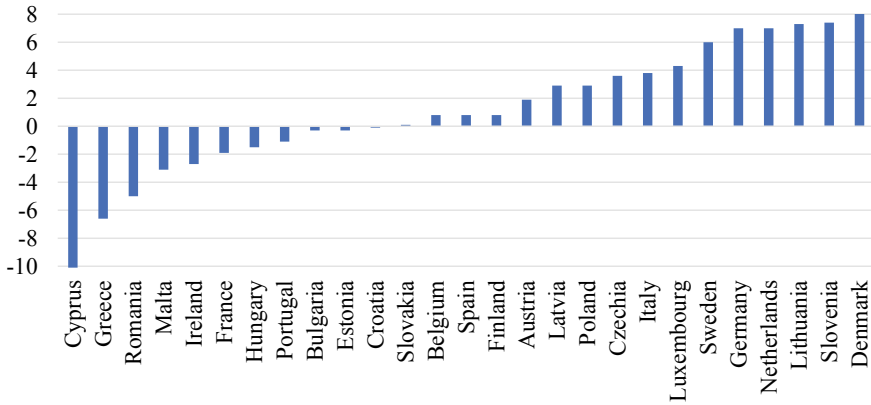


Fig. 7 Current account balance by EU country, % of GDP (Source Eurostat)

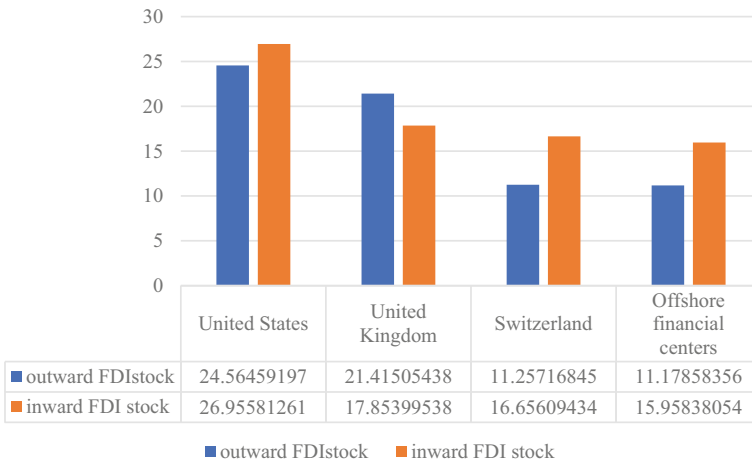


Fig. 8 EU FDI stock by country, % (Source Author’s calculations based on Eurostat data)

currency settlement operations, the common European currency accounts for about 30%.

9 Social Sector

The key problems of the EU’s social development are the decline in the birth rate and the population ageing, pension provision, unemployment, relative poverty and the migration problem.

9.1 The Problem of Pension Provision

It lies in the difficulties of financing pensions in the context of the ageing population and a corresponding increase in the demographic burden of older ages—if in 2021 the demographic burden ratio of the population over 65 years old averaged 33.6%, then, according to the forecasts of the European Commission, it should reach 39% by 2030 and 52% by 2050.

Pension legislation issues are within the competence of the member states, but the European Commission makes recommendations on the types of reforms that need to be implemented to reduce social spending. The key directions of the EU policy in the field of pension provision are to increase the length of working life (raising the retirement age, encouraging older people to work, reducing the share of early retirement provision) and the amount of savings (both mandatory and additional pension provision).

The national specifics of solving the pension problem are determined by the type of pension system and the peculiarities of the socio-economic and political situation prevailing in each particular EU country. For example, in Austria, Belgium, Bulgaria and Finland, the conditions for early retirement were tightened, and in Sweden, Poland, Ireland and Hungary, this opportunity was cancelled altogether. In Germany, when determining the number of monthly pension benefits, indicators of life expectancy in the country began to be taken into account. In Spain and France, an increase in pension provision was provided for persons retiring after reaching the appropriate age. Sweden has radically reformed the pension system, providing for the creation of individual pension accounts, depending on the salary level, in addition to the minimum guaranteed pension. In general, the increase in the retirement age has affected almost all EU countries. At the same time, despite the EU's efforts to develop individual pension savings, they are carried out by only a third of Europeans aged 25–59 years.

9.2 Unemployment

In 2014–2019, unemployment in the EU decreased (up to 6.8% of the economically active population in 2019), but the COVID-19 pandemic and measures to contain it reduced the number of jobs, increased unemployment and underemployment, losing self-employed income and, as a result, the number of applications for social benefits has significantly increased. At the same time, the growth of unemployment in 2020 was relatively moderate: at the end of the year, its average level in the union was 7.2% (7.9% in the eurozone). In 2021 the unemployment rate was 7%.

Unemployment was contained mainly owing to national part-time employment programs, which provide for state subsidies to companies to pay for non-working hours, a complex procedure for the dismissal of employees in some countries, as well as the assistance from the EU (under the SURE program, adopted in April 2020, 100

billion euros were allocated). The means were provided to member countries in the form of preferential loans and intended to partially cover government spending on employment preservation programs).

9.3 The Problem of Poverty

In 2020, 17.1% of the population lived below the poverty threshold in the EU (income less than 60% of the national median income per capita after social transfers in cash and kind). The highest poverty rates were recorded in Bulgaria (23.8%), Romania (23.4%), Latvia (21.6%), Spain (21%), Lithuania (20.9%) and Estonia (20.7%). The least widespread poverty was in the Czech Republic (9.5%), Slovakia (11.4%), Finland (12.2%), Hungary (12.3%) and Slovenia (12.4%).

The age structure of poverty in the EU as a whole is characterised by a relatively high level in the group of young people aged 18–24 (23.5%), while in the group of people over 65 this indicator is 17.3%. However, in some countries, the opposite picture is observed. For example, the poverty rate of elderly people in Estonia, Latvia and Lithuania reaches 41.4, 40.9 and 36%, respectively, while in the 18–24 age group these indicators are more favourable (23.3, 18.2 and 17.3%, respectively).

Another feature of poverty is its dependence on the level of education (with the growth of the latter, poverty decreases). If we take the group of persons with higher education, poverty is 7.6%, with full secondary and secondary vocational education it is 15%, among other persons it is 29.4%.

9.4 Migration Problem

Today, Western Europe, along with North America, is the main centre of attraction for migrants from all over the world. A positive balance of net migration is observed in most member countries. The total number of people permanently residing in the EU, but not born in its countries, as of January 1, 2020, amounted to 37.5 million people, or 8.4% of the population. In the context of reducing natural population growth (in 2020, a negative indicator was recorded in 19 of the 27 countries of the association), the growth of the EU population in recent years has been determined exclusively by the positive balance of external migration. In general, according to the European Commission, legal migration should play an important role in countering demographic challenges and mitigating the imbalance of supply and demand in the European labour market.

The problem lies in the difficulties of socio-economic adaptation of migrants, the significant scale of illegal migration, the inefficiency of mechanisms for regulating refugee flows and schemes for their distribution across countries and, in general, in the absence of a coordinated comprehensive migration policy that would take into account the peculiarities and interests of each EU country.

The migration crisis of 2015, associated with a sharp increase in the flows of illegal migrants and refugees from the countries of South Asia, the Middle East and North Africa (mainly from Syria, Afghanistan and Iraq), as well as the difficulties of their reception and distribution on the territory of the association, showed that the EU countries need to make serious efforts to overcome deep differences regarding key migration and asylum issues.

9.5 Social Policy

The social policy falls within the joint competence of the EU and national Governments. At the pan-European level, the main objectives of the social policy of the association are defined, minimum standards of social security are established and recommendations are developed, primarily in the matters of employment, freedom of movement and equality, while an important task is to create an effective mechanism for implementing social guarantees. The financial support of the general social policy is carried out mainly through the European Social Fund Plus (ESF). In the period 2021–2027, the total budget of ESF+ should be about 99.3 billion euros.

The priorities of social policy, the scale of its financing, the degree of influence of the state on the redistribution of income and social protection at the national level are largely determined by the peculiarities of the social policy model that has developed in each particular country, primarily in its direction, such as social security (see Table 14).

As can be seen from Table 14, in 2019, social protection spending per capita averaged 28.1% of GDP in the EU, but in many countries, this figure was significantly higher. We are talking about countries where conservative-corporatist (Austria, Belgium, Germany, Italy, the Netherlands, France) and Scandinavian (Finland) social models operate, and the level of social protection is traditionally high. Also noteworthy is the large share of the state in the total income of the social security system in the Scandinavian countries (it is almost 27% of GDP in Denmark and exceeds 15% of GDP in Sweden and Finland).

In general, at the present stage, the development of a pan-European social program seems difficult due to differences in national social models, living standards, as well as taking into account the peculiarities of the demographic situation, the labour market, the tax system, the health care system, education and pension provision in individual EU countries.

10 Conclusions

1. The EU member states have economies at different levels of development and competitiveness, as well as representing different economic models. This leads to serious difficulties with respect to further deepening integration due to the

Table 14 Selected indicators of social protection in EU countries in 2019

	Social protection expenditures per capita by PPP, thousand euros	Social protection expenses, % of GDP	Pension expenses, % of GDP	Social protection receipts, % of GDP			
				Total receipts	social contributions paid by protected persons	employers' social contributions	general government contribution
EU-27	9.07	28.1	12.7	29.2	6.4	10.4	11.5
Austria	11.50	29.3	14.1	29.0	7.8	10.4	10.4
Belgium	10.64	28.9	12.7	29.7	5.9	11.3	11.9
Germany	12.15	30.3	12.0	31.9	9.8	11.1	10.4
Greece	5.26	25.0	16.0	27.3	6.3	6.6	13.1
Ireland	7.49	13.6	5.0	15.0	1.8	4.0	8.8
Spain	6.75	24.1	12.7	23.6	3.0	10.7	9.2
Italy	8.67	29.3	16.0	29.9	4.6	10.8	14.0
Netherlands	11.63	28.9	12.0	33.3	10.0	10.0	8.1
Poland	5.44	21.3	11.0	21.2	4.4	8.7	6.0
Portugal	5.99	24.1	13.8	25.9	4.3	8.2	11.5
Romania	3.58	15.3	7.8	15.2	10.8	1.4	2.8
Finland	10.60	30.0	13.3	30.9	4.4	9.5	15.2
France	11.35	33.6	14.8	34.1	5.7	12.9	14.5
Sweden	10.28	27.8	10.8	30.2	2.8	11.7	15.2

Source Eurostat

- complexity of coordinating economic interests and mechanisms. This is also reflected in the serious differentiation of country socio-economic indicators.
2. The dynamics of economic development in the EU in recent years are characterised by rates that are not too high, significantly inferior not only to the growth rates of world GDP but also to the rates of other leading developed countries. The recession of 2020 has become one of the largest in the history of the association. Among the factors causing such low GDP growth rates are the insufficient development of modern technologies, the shortcomings of domestic demand, demographic problems and several other structural problems in the economy.
 3. The distinctive features of business structure in the European Union include the relatively high importance of small and medium-sized businesses in employment and value-added production with a more pronounced weight of large businesses in exports and R&D, the relatively large weight of the public sector in individual economies and key TNCs, as well as relatively small volumes of foreign ownership with a predominance of European companies that build their regional value chains.
 4. Human capital in the EU is highly developed and provides the main competitive advantages of the Union (although social indicators vary very significantly across member countries). At the same time, its modern development is characterised by some problems, including a change in the pattern of population growth, population ageing, some structural problems in the labour market, as well as insufficient innovation potential in comparison with other developed countries.
 5. The real sector of the EU economy is characterised by an extremely large role in the economy, but it is characterised by several imbalances, primarily related to the problem of the deindustrialisation of the European economy. Being a leader in many industries, the EU lags in the production of high-tech goods. Another important problem is the growing energy dependence of the Union and the prospects for energy transfer.
 6. The EU financial sector is characterised by a very extensive architecture. The economic and monetary union has an uneven structure: the monetary policy of the eurozone countries has been transferred to the supranational level of decision-making, and fiscal policy has remained in national competence, which causes some imbalances and problems (like the debt crisis). At the same time, the EU's General Budget is used to finance the EU's supranational activities and does not exercise macroeconomic functions.
 7. The EU's foreign economic sector demonstrates its leadership in the world in trade in goods, services and capital flows. At the same time, the EU is somewhat losing its weight in many positions, and is inferior to other countries of the world.
 8. The key problems of the EU social sector are the decline in the birth rate and the population ageing, pension provision, unemployment, relative poverty and the migration problem.

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Developed Economies of Asia



Sofia Rebrey

Abstract The chapter examines the East Asian economic systems of five advanced Asian economies: Japan, the Republic of Korea, Hong Kong (special administrative region of People's Republic of China), Singapore, and Taiwan (province of People's Republic of China). Having formed an alternative to mainstream Western development system, these economies managed to catch up with Western developed economies in a few decades and enter the group of developed post-industrial economies that are at the forefront of the Fourth Industrial Revolution. The chapter examines the main factors contributing to the formation of their economic systems, the structure and dynamics of socio-economic development and the main challenges to sustainable development in the advanced Asian economies.

1 Introduction

Japan, the Republic of Korea, Taiwan, Hong Kong and Singapore occupy a significant place in the world economy—they account for about 7% of the world GDP, including 4% for Japan, the fourth largest economy in the world. Having formed an alternative to Western economic systems, these economies managed to catch up with Western advanced economies in a few decades. The chapter discusses the main factors contributing to the formation of the economic systems of these countries, the structure and dynamics of socio-economic development, and the main problems standing in the way of sustainable development in the developed economies of Asia.

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2 Economic Systems of Developed Asian Countries and Their Economic Strategy

The likeness of economic systems (models) of advanced Asian countries allows us to use the term “East Asian economic system”. This system serves as an example of successful economic modernisation within the framework of the catch-up development strategy. At first, it was a Japanese system and then became East Asian after its use by the new industrial countries of Asia (“tigers”). All five countries that used this system demonstrated an “economic miracle”, having managed to turn into developed economies as soon as possible.

The first stage of their economic development was characterised by accelerated industrialisation based on limited import substitution and subsequent export orientation, coupled with high rate of savings and investment. The following stage was post-industrialization triggered by various factors including ecological crisis, high prices on fuel and labour force. Nowadays, the East Asian economic system is famous for its innovative development and highly qualified labour force. At the same time, the high level of state intervention as a key characteristic of all stages differs this system from the most Western economic systems.

2.1 *Japanese Model*

Although, in the early twentieth century, Japan was already a powerful empire, that conquered Taiwan (1895–1945), Southern Sakhalin (1905–1945), Manchuria (1905–1945), Korea (1910–1945), the Pacific Islands (Caroline, Mariana and Marshall Islands; 1919–1947), the defeat in World War II threw Japan’s economy back by destroying $\frac{1}{4}$ of industry. Japan’s post-war economic model was based on the stimulation of savings and investment, as well as on import substitution and subsequent export orientation. The tough financial and tax reform helped the government to balance the budget in the shortest possible time, start to increase domestic savings and maintain a low bank rate, especially for prioritised industries. In addition, the propensity of the population to save and their trust in the postal savings network (where the majority of the population kept their deposits) allowed accumulating savings of the population, which reached up to a third of gross savings (Flath, 2014). The policy of protectionism and massive investment made Japanese goods competitive on the global markets in the shortest possible time. Export revenues were directed to the development of the next, technically more complex and capital-intensive industries. This is how Japan managed to spirally create a universal structure of the manufacturing industry in less than 15 years (from 1958 to 1973).

The most important aspect of the Japanese economic model was self-reliance, i.e. it developed due to a high rate of gross savings and domestic investment, rather than foreign investment. Instead, the import of technologies became an important factor of development. Moreover, the Japanese managed to raise the quality of imported

technologies to perfection so that the quality of their products was superior to the originals. 1960s saw Japan to fill the world markets with inexpensive and high-quality household appliances, photographic equipment, ships, chemical fibres, steel, electrical equipment and cars.

Although public sector in Japan is smaller by size than in Western economies, it is known for its high efficiency. State and corporate governance maintain an active dialogue in which federations (like Keidanren) and clubs of industrialists and the government officials communicate to form an agenda for the national economic policy.

In the 1970s and 1980s, a series of oil crises severely undermined Japan's economy, which highly depended on energy imports. Japan responded by intensifying production through innovation and improving the skills of the workforce, thus moving to the post-industrial stage of development. The ecological crisis as a result of industrialisation also stimulated it. Hence, in the 1980s Japan has become the third economic power after the USA and the USSR.

Rapid economic growth and high competitiveness of Japanese products on the world market stimulated investments into Japanese real estate and stock markets that formed the Japanese asset price bubble. The bubble was characterised by the rapid acceleration of asset prices and overheated economic activity, as well as an uncontrolled money supply and credit expansion (Okina et al., 2001).

However, in 1991, the bubble burst and Japanese economy stagnated for more than two decades that are now called "lost decades". This period is characterised by low economic growth, a deflationary spiral and an ageing society. Japanese government acknowledges the need for deep structural reforms and in 2013 launched "Abenomics"—the economic policy named after its creator S. Abe. At the heart of "Abenomics" is the financial policy of quantitative easing, designed to break out of the deflation trap and stimulate demand. A deflationary trap is a state of persistent deflation that can spiral downward in the face of zero per cent interest (Iwamoto, 2005). Other "arrows" of "Abenomics" are an investment in infrastructure and "womenomics"—a policy for the empowerment of women, particularly the increase of female labour force participation rate.

The main challenge for Japanese economy at the present stage is to stimulate economic growth in an ageing society (Taniuchi, 2014). Shrinking labour force orients business to invest more in robotisation, artificial intelligence and "smart" systems. Much attention is paid to finding a gender balance in the labour markets, work-life balance, and reducing the working week (to less than 60 hours), which in general should improve the health and quality of life of the population and prolong the working age. Maintaining the position as a technological leader makes Japan move away from the practice of lifelong hiring and weaken inter-firm ties to increase labour market mobility and competition in the domestic market, which, in turn, should stimulate the influx of foreign talent and foreign companies.

Traditional business practices adopted in Japan, such as harmonious relations between the government and corporations, corporate associations in federations and clubs, the horizontal and vertical grouping of Japanese companies (keiretsu), and lifelong hiring, neutralise the competition in the domestic market. However, most

Western economists negatively assess the lack of competition in Japan. Particularly, M. Porter, the author of the theory of competitive advantages of nations, argues that such an environment, on the contrary, weakens Japanese companies and is one of the factors of economic stagnation (Porter et al., 2000). Japanese government makes attempts to weaken inter-firm ties and find a work-life balance, however, traditional business practices are deeply intertwined with social structure, which makes those attempts to be careful. International economic organisations highlight the rigidity of labour markets as the weakest point of the Japanese competitiveness.

2.2 South Korean Model

South Korean modernisation began in the late 1950s. The division of Korea into South and North aggravated the already economically difficult situation of the country. Before that, the North was the centre of industry, while the South remained agrarian. Following the Japanese experience, South Korea successfully embarked on catch-up development path. The specifics of the South Korean model consisted of even greater use of export orientation and a rapid departure from import substitution, which generated corruption and hindered industrialisation. Another important feature was the massive financial assistance of the United States. As a result, by the mid-1970s, the volume of industrial production per capita doubled, and the manufacturing industry began to prevail over the agrarian sector in the economic and export structure.

In the 1980s, the model of extensive growth exhausted itself and there was a need to intensify production and start a transition to the post-industrial stage of development. This was due both to the oil crises and to the increase in labour costs due to the increasing qualifications of the workforce and living standards. In addition, the need for economic liberalisation has become acute. Excessive dependence on exports under the conditions of protectionism of developed Western countries also weakened the competitiveness of South Korea. As a result, the reduced state intervention and the involvement of foreign MNEs in the second half of the 1980s helped the government to restore the previous economic growth rate of 12.5%.

The Asian financial crisis of 1997 hit the economic development of the South Korean economy hard: the sharp devaluation of the won and the depletion of gold and foreign exchange reserves made the government resort to IMF loans. Korea found itself between Japan, which had more advanced technologies, and China with its cheap labour. The situation was aggravated by the low efficiency of the diversified conglomerates (chaebols) that dominated the economy due to their excessive diversification, lack of competitiveness and poor-quality management system, as a result of which about half of the largest chaebols went bankrupt. Although the anti-crisis policy of the state allowed South Korea to get out of the crisis pretty soon (in 1999, the economic growth was 10%), the crisis revealed the need for a deep restructuring of the economy: the reformation of chaebols, the privatisation of banks and liberalisation. As a result of the restructuring, Korean chaebols Samsung Electronics and LG Electronics became among the world leaders in the high-tech industry. Today,

the Republic of Korea is switching to an innovative and inclusive model of economic development, which implies the restructuring of industry and the expansion of budget spending on social security, employment promotion and infrastructure construction. Excessive dependence on exports of industrial products affects GDP growth due to the weakening of the global conjuncture, in particular the US–Chinese trade wars—the two main export destinations from South Korea. Thus, stimulating domestic demand becomes the basis of economic growth, and in the conditions of a rapidly ageing population, this task requires a serious restructuring of employment and an increase in social support for the population.

2.3 The Singapore Model

Singapore’s “miracle” is largely the merit of the country’s long-term president Lee Kuan Yew. The city-state gained independence from the British Empire and then from Malaysia in 1965 and had little chance for success: deprived of territory, natural resources (even drinking water), financial resources, Singapore had only port logistics and labour resources. Their professional development and the most active involvement of foreign corporations laid the foundation for Singapore’s economic growth. Relying on these resources and focussing on those industries that could become export-oriented in the shortest time possible, the Singapore bureaucracy was able to turn the country into an industrial, commercial and financial centre of Asia in a couple of decades (Lee, 2000).

The transition to the post-industrial stage of development in Singapore was timely and effective. Post-industrialisation was accompanied by the removal of resource- and labour-intensive capacities abroad and concentration on knowledge-intensive industries, which was accompanied by increasing investments in R&D coupled with tax incentives for high-tech industries and advanced training of the workforce.

Despite achieving the desired results, Singapore’s development strategy faced several challenges in the 1980s. The rapid growth of the economy and strong state control increased wages and tax rates, which eventually lowered profits and restrained investment. In response, the government sharply reduced state intervention, in particular by giving up control over wages. The restrictive birth control policy was also changed in 1987 to the “have three or more” policy, according to which, educated mothers were offered financial incentives to have a third or fourth child, thus modifying the previous stricter eugenic policy.

The Asian financial crisis of 1998 and the global economic crisis of 2007–2009 affected the country, but Singapore’s economy demonstrated the greatest resistance to external shocks among the countries of the region, despite the high degree of openness.

The modern Singapore model is characterised by high openness and is based on innovation, therefore, the decline in the global economic environment, trade wars and protectionist sentiments affect economic growth. Adaptation to changing external conditions implies the development of more flexible models of participation

in global value chains and the protection of free trade principles, the development of e-commerce and the digital economy. The transition to an innovative development model causes structural transformations. As part of the Smart Nation initiative, Singapore has developed a national strategy for the development of artificial intelligence to stimulate innovation in five key areas: transport and logistics, smart cities and districts, health, education, safety and security.

Singapore is facing a number of internal problems, such as the growth of social spending due to the population ageing, the high cost of housing, insufficient adaptation of the educational system to the innovative economy model.

2.4 The Taiwanese Model

Taiwan's post-war economy was characterised by a shortage of raw materials, high inflation and a shortage of freely convertible currency. The most important factors that ensured economic growth, which began in 1952, included the population growth (3.1 million people migrated to Taiwan together with Chiang Kai-shek in 1949), agrarian reform, as well as American financial assistance (\$4.2 billion).

This assistance allowed Taiwan to implement an import substitution policy, and switch to export orientation. During the 1960s and 1970s, real GDP grew by about 10% (about 7% per capita) per year. Gross savings rate reached 30% by 1970, labour productivity increased significantly, the number of students in universities vastly increased. Later, with the intensification of production and the transition to knowledge-intensive industries the main emphasis was placed on the production of microelectronics, computers and semiconductors.

In the 1980s, Taiwan became a developed post-industrial open economy. Despite the timely restructuring, in the mid-1990s there were negative consequences of the exhausted catch-up development: the decline in growth rates, the low level of investment, deindustrialisation, and the relocation of many production facilities to China.

In the 2000s, Taiwan's economy was characterised by low consumer activity of the population as a result of restraining wage growth in export-oriented industries, restrictive monetary policy in the fight against inflation and migration of about 1 million Taiwanese (the wealthiest part of the population) to the mainland. In addition, the Taiwanese production of computers, components and mobile phones began to lose in competition to China, as a result, many MNEs began to move their production across the Taiwan Strait to the mainland. To compensate for these losses, Taiwan began to actively develop next-generation technologies—software, artificial intelligence, memory cards, etc.

Rivalry with mainland China creates a lot of obstacles to economic development. By making it difficult for Taiwan to establish the formal investment, trade or other framework agreements with regional governments, especially in Southeast Asian countries, China is simultaneously attracting highly qualified Taiwanese to work on the mainland. The president of Taiwan, Tsai Ing-wen, who was elected for a second

term in 2020, made a bet on Taiwanese self-sufficiency. Tsai's economic strategy is based on an active social policy and increasing gender equality, as well as Taiwan's investment attractiveness, stimulating consumer demand and entrepreneurial activity (especially among young people), financial stabilisation, and tourism development.

2.5 *Hong Kong Model*

British Hong Kong traditionally specialised in the re-export of Chinese products, which accounted for more than 80% of its exports in the post-war years. Foreign trade stimulated the revival of the domestic economy and contributed to the recovery of banks, insurance companies, ship repair and freight companies. Another favourable post-war factor was many immigrants from China, mostly wealthy and skilled.

Industrialisation began with the development of the textile industry, as entrepreneurs of this kind fled from China. Along with the textile industry, other manufacturing industries began to develop. The competitiveness of Hong Kong goods in world markets was promoted by low production costs as a result of low taxes, and well-established trade relations facilitated the easy filling of missing links in production chains through imports. In 1960, the goods produced in Hong Kong accounted for more than 70% of its exports.

The 1960s witnessed the transition to the production of next-level goods (ready-made clothing, plastic goods, electrical equipment, watches) and the development of related industries. The rapid conquest of world markets was based not so much on the cheapness of goods as on effective marketing and communication among the Huaqiao (Chinese diaspora). At the same time, such challenges as the high cost of labour, the lack of space for new production facilities, and the deteriorating environment have worsened.

The policy of "open doors", which began in China at the end of 1970–1979, served as the key to solving these problems—the massive removal of Hong Kong's production facilities to mainland China, which possessed cheap labour and space, began. As a result, the parent companies, research centres and service units (marketing, consulting, etc.) were concentrated in Hong Kong itself. It was the service sector (almost 90%), led by trade and finance, which became the basis of Hong Kong's economy. Hong Kong has become one of the major global financial centre.

In 1997, the UK transferred Hong Kong to China. To soften the transition, Hong Kong is considered a special administrative region (SAR) of PRC for 50 years, until 2047, which implies economic and political autonomy of the territory. The "One country, two systems" policy is beneficial to both sides: Hong Kong, acting as an intermediary between China and other economies, assists trade and investment flows to and from China.

Like other advanced Asian economies, Hong Kong is facing two challenges—the ageing society and the transition to an innovative development. Hong Kong aspires to become a "smart" city, but outdated infrastructure and housing stock represent a

serious obstacle. Attracting foreign investors and MNEs remains a priority task for the Hong Kong development, so the improvement of urban infrastructure, sustainable development, ecology are of paramount importance along with education.

3 Proportions, Dynamics and Efficiency of Economic Development

The advanced Asian economies have a post-industrial GDP structure, where from 70 to 90% of the value added is produced in the service sector. The manufacturing occupies about 15–25% of GDP, although in Hong Kong it generates only 1% of GDP (it is relocated to neighbouring Shenzhen, a Chinese special economic zone). South Korea, on the contrary, has a large share of manufacturing industry (25%), which is typical for the industrial stage, but the high technological level of manufacturing and large share of R&D investment in GDP allows Korea to be classified as a post-industrial economy.

Despite the transition to the post-industrial stage, the “Asian tigers” have higher economic growth rates than most developed countries, due to the high rates of gross savings and investment, the openness of their economies and active participation in international trade and capital flows, as well as integration with other rapidly growing economies of the region (see Table 1).

Japan stands out for the low dynamics of its economic growth. The decline in growth rates followed the burst of the bubble economy. One of the reasons for the following decline in economic dynamics was that Japanese companies, finding themselves on the verge of bankruptcy, actively moved industry abroad in order to reduce costs, and as a result of such deindustrialisation, wages stopped growing, which plunged the economy into a deflationary spiral. The rigid labour market (lifetime employment and salary in accordance with seniority) and the population ageing exacerbate the problem of weak consumer activity. The economic growth of developed Asian countries (except Japan) is ahead of Western dynamics due to the high rate of gross savings and accumulation, the extreme openness of their economies and active participation in world trade and capital flows, as well as the integration with other fast-growing countries in the region. Japan, on the other hand, demonstrates a West European level of economic growth (1–2% of GDP per head) due to the informal closeness of the economy to foreign investment, products, labour; the rigidity of the labour market, the ageing of the population, high competition in the markets of high-tech goods.

The “tigers” are just beginning to face the problems of deflation and the ageing of the population. The high (for developed economies) growth rates of the “tigers” are explained by the openness of the economy, including established ties with the fast-growing Asian economies (China, India, ASEAN countries) and developed Western countries.

Table 1 GDP annual growth, %, 1980–2025

	1980–1989	1990–1999	2000–2009	2010–2019	2020	2021	2022 ^a	2023 ^a	2027 ^a
Hong Kong, SAR of PRC	7.4	3.6	4.2	2.9	-6.5		-0.8	3.9	2.8
Japan	4.4	1.5	0.5	1.3	-4.6	1.7	1.7	1.6	0.4
Korea, Rep. of	8.9	7.3	4.9	3.3	-0.7	4.1	2.6	2.0	2.3
Singapore	7.8	7.2	5.4	5.0	-4.1	7.6	3.0	2.3	.0
Taiwan, province of PRC	8.5	6.6	3.9	3.6	3.4	6.6	3.3	2.8	2.0
Advanced economies	3.1	2.7	1.8	2.0	-4.4	5.7	2.4	1.1	1.7
World	3.1	3.1	3.9	3.7	-3.0	6.0	3.2	2.7	3.2

Source: IMF, World Economic Outlook, April 2022

^aProjections

Table 2 Gross savings and gross fixed capital formation ratios to GDP, %, 1980–2020

	Savings/ Investment	1980s	1990s	2000s	2010s	2020
Hong Kong, SAR of PRC	Savings			33.02	26.49	25.49
	Investment	27.77	29.52	22.86	22.64	18.95
Japan	Savings			27.51	25.81	26.80
	Investment	31.63	31.44	25.97	24.61	25.51
Korea, Rep. of	Savings	32.50	37.50	33.24	35.50	36.13
	Investment	33.19	37.00	32.21	31.18	31.86
Singapore	Savings	39.59	48.02	43.49	45.57	40.24
	Investment	41.11	34.65	25.25	27.18	22.62
United States	Savings	20.83	19.17	17.74	18.74	19.30
	Investment	23.39	21.52	22.04	20.38	21.15
European Union	Savings	21.75	22.53	23.12	23.72	24.51
	Investment	23.57	22.78	22.80	21.13	21.81

Source World Bank Open Data

The second reason for the high economic growth (previously in Japan, and now in the “tigers”) is the high rates of gross savings and investment (see Table 2). The high rate of gross savings is largely supported by a large current account surplus, which is almost constantly based on a positive trade balance. In addition, up to a third of gross savings are the population’s personal savings, which are largely explained by relatively weak social security provided by the state. A high gross savings rate is also supported by a highly developed banking sector with its low lending rates. Nevertheless, in the conditions of post-industrialisation and the beginning of the Fourth Industrial Revolution, both the gross savings rate and the gross investment rate are gradually decreasing, and they are approximating the level of Western countries.

4 The Role of the State and Business Structure

State intervention in the economy of the described countries has an informal nature, which is expressed in a high degree of influence against a background of low statistical indicators. Indicators such as the share of the public sector in GDP or the share of government spending do not fully reflect the role of the state in advanced Asian economies. The strong influence of state bodies on the economy is determined by the principles of Confucian morality, which is based on respect for authority. The role of the public sector in the advanced Asian economies varies. For example, the economy of Hong Kong is most characterised by the principles of *laissez-faire*, the state owns only the Hong Kong International Airport and is engaged in housing construction. As a result of several waves of privatisation, there are also practically no state-owned

companies in Japan. The last state-owned company as of 2019 remains the international division of NHK World. At the same time, the methods of state intervention in Japan are informal and are carried out within the framework of business organisations (for example, Keidanren) and advisory councils under ministries and departments.

At the same time, the Taiwanese government controls strategically important industries: the energy sector (through Taipower), water supply (Taiwan Water), 70% of the petrol market (CPC Corporation), transport, etc. In addition, the state in Taiwan continues to control privatised companies by appointing the board of directors. The situation is similar in the South Korean public sector, which includes transport, fuel and energy, construction and other companies. In Singapore, the public sector is controlled through Temasek Holdings, the largest state-owned holding company that owns more than 200 state-owned corporations in various industries, including transport and logistics, ship repair and engineering, electricity and gas, telecommunications, media, financial services, manufacturing and real estate.

As for the structure of private business, in the advanced Asian economies, like in Western developed economies, the role of small and medium-sized firms is great: they account for about 50% of value added (Table 3).

In Japan, effective interaction of small, medium and large enterprises is based on vertical business consolidation—keiretsu, a kind of pyramid uniting a large company (the top of the pyramid) and subcontractors (as we approach the base of the pyramid, the size of the firm decreases and their number grows). Relations between SMEs and large corporations within the framework of keiretsu are based on trust and have a long-term character, sometimes to the detriment of competitiveness. Connections with large businesses contribute to the high technological equipment of SMEs. Nevertheless, the share of small businesses in Japan is declining due to the fact that the country has low entrepreneurial activity and a few startups. In addition, small businesses are mostly inherited, which is due to ethnopsychological factors, and the number of small businesses is reduced due to high inheritance taxes (reduced in 2019) and the lack of a suitable heir.

Table 3 The role of small and medium-sized enterprises in the economy, %

	Share of employed in SMEs	Share of SMEs in value creation
Japan	80	55
Korea, Rep of	87.9	48.3
Singapore	72	47
Taiwan, province of PRC	78.4	–
Hong Kong, SAR of PRC	45	–

Sources Korea SME and Start Up Agency Brochure 2019; Trade and Ministry Department, Hong Kong; 2018 White Papers on SMEs and Small Enterprises, Japan; Singapore Economy 2018. Department of Singapore Statistics; 2019 White Paper on Small and Medium Enterprises, Taiwan

Horizontal type business groups are called *kigyo shudan* (associations of enterprises): these are Mitsui, Mitsubishi, Sumitomo, Fuyo, Sanwa, Daiichi Kange. The core of the business group is a bank, around which are 10–30 industrial companies of various industries—several (up to four) are grouped construction companies, there are up to three transport companies and service companies: *sogo shosha* (universal trading company), trust bank, several insurance companies, securities companies. All of them are united by cross-ownership of shares, exchange factors and production results: goods, services, financial and real capital, labour and technology. The main goal of *kigyo shudan* is to create competitive advantages and minimise risks. An integral element of Japanese entrepreneurship is the practice of lifelong employment, remuneration in accordance with seniority. However, today, such a closed business structure and a rigid labour market represent an obstacle to economic growth and transition to an innovative model of the economy, including due to the difficulty of attracting foreign talents and companies.

The entrepreneurial structure of South Korea is based on *chaebols*—financial and industrial groups with widely diversified industrial production and strong state support. There are about 100 *chaebols* in total, of which 30 leading ones produce 45–50% of GDP, and the two largest (Samsung Electronics and Hyundai Motor)—26% of GDP. The number of SMEs associated with *chaebols* is growing—more than twofold over the past 20 years. Despite government support, South Korean SMEs are almost 70% less productive than large businesses due to low technological equipment and limited access to innovation.

Large Taiwanese corporations produce the vast majority of manufacturing products and occupy a prominent place among the world's TNCs. In the ranking of Global 2000 (the largest corporations in the world), Taiwan accounts for 49: Hon Hai Precision, Taiwan Semiconductor, Cathay Financial, Fubon Financial, CTC Financial, etc. Taiwanese business groups, *guangxi qie* is an informal association of independent firms connected by social ties (kinship, geographical, etc.). These associations do not merge into a single body, but function as partnerships united by common investments and mutual trust, in which the decisive centre of decision-making and control remains in the family business. They cooperate with an SME specialising in exports. More than 2/3 of Taiwan's exports are accounted for by SMEs. Taiwanese manufacturing SMEs are combined into industry clusters to increase competitiveness. Today, there are about 80 of them located in scientific towns or industrial parks.

A distinctive feature of Singapore's business structure is the high involvement of foreign capital: of the total number of companies, foreign ones account for 18%, 31% of employment and 62% of GDP. The framework of Singapore's entrepreneurial structure is also represented by business groups. Half of the business groups belong to foreigners or, rather, ethnic Chinese families: out of 30 business groups, eight are Hong Kong, one is Indonesian, and ten are local, which are also controlled by ethnic Chinese families. In general, inter-firm relations are characterised by flexibility and the activities of business groups are highly diversified, which helps to reduce risks, maximise income and facilitate penetration into new markets. The degree of control and coordination of the activities of branches by clans varies greatly, from direct manual control and participation in decision-making to minimal involvement. A

change in the structure of a business group is usually associated with the death of the head of the family and the subsequent redistribution of power within the clan.

Hong Kong, like Singapore, is a place of concentration of global MNEs. In 2019, there were 1500 regional headquarters in Hong Kong (18% from the USA, 15% from China, 14% from Japan), as well as 2500 regional subsidiaries (which also have control over other subsidiaries of MNEs in the region, including 18% from the USA, 17% from Japan, 12% from China) and more than 5000 subsidiaries, also mainly from the mentioned countries. Up to half a million people are employed in foreign TNCs in Hong Kong.

5 Human Capital and Innovation

The main demographic trend in developed countries is the ageing of the population, and the developed economies of Asia are no exception. Japan is the world leader in population ageing: the elderly accounted for 28% of the population in 2018. As to “tigers”, the proportion of the elderly is much lower (11.5% in Singapore, 14.5% in the Republic of Korea, 16.8% in Hong Kong), nevertheless, their high rate of population ageing puts this problem among the priorities.

The ageing of the nation accompanied by a lower birth rate leads to the population decline. In Japan, 2009 became a turning point, and in South Korea, population decline is projected from 2020–2021. In addition, in both countries, this process is aggravated by a closed migration policy. In Hong Kong, Singapore and Taiwan, the increase varies from 0.4 to 0.8%, largely due to immigration.

Another characteristic feature of the human capital of the advanced Asian economies is the low unemployment rate. Only in crisis periods has unemployment exceeded 5% and traditionally it is no higher than 3–4%. In Japan, this is due to the practice of lifelong employment (although this type of employment is declining), whereas in the “tigers” it is the result of effective state support for employment, giving priority to retraining or advanced training courses (to the detriment of unemployment benefits). In Singapore, the local workforce is experiencing intense competition from highly skilled migrants, but the Government continues to invest in improving the skills of the local population instead of tightening migration policy (Table 4).

The high qualification and quality of the labour resources of developed Asia are based on high work ethics as a result of the widespread dissemination of the Confucian morality and a developed system of general, professional and corporate education. According to PISA, schoolchildren of the studied economies show some of the best indicators in the world in the knowledge of mathematics, physics and chemistry.

R&D expenditures in economically advanced Asia are higher in relation to GDP than in the USA and the EU. If earlier Japan was the undisputed leader in Asia, in 2020 a different picture is emerging. Japan (R&D is 3.2% of GDP) was overtaken by South Korea (4.6%) and Taiwan (3.3%), although Japan remains the leader in terms of absolute costs. Singapore corresponds to the Western level (2.2%), but Hong Kong

Table 4 Unemployment rate, %

	1990s	2000s	2010s	2020
Hong Kong, SAR of PRC	2.97	5.51	3.35	5.80
Japan	3.17	4.66	3.56	2.97
Korea, Rep. of	3.37	3.62	3.53	4.07
Singapore	3.22	4.87	3.82	5.19
USA	5.79	5.54	6.23	8.31
European Union	10.43	9.01	9.39	7.37

Source ILOSTAT database

is significantly behind—0.8%. In the second half of the twentieth century Asia developed imported foreign technical achievements, then its strategic task in the twenty-first century was to gain and retain leadership positions in the creation and implementation of high technologies. Today, R&D in the developed economies of Asia is focussed on the development of technologies of the fourth industrial revolution.

6 Real Sector

The structure of the economy of developed Asia is as follows (see Table 5).

Agriculture does not play a significant part in the developed economies of Asia, which is due to both post-industrialisation and a strong limitation of suitable areas. The developed economies of Asia do not provide themselves with food and must import agricultural products.

The basis of the secondary sector of the developed economies of Asia is the manufacturing industry (except Hong Kong, where construction prevails). It occupies 20–30% of GDP (see “European Union”, Table 5) and is currently aimed at increasing knowledge intensity and reducing labour and resource intensity both by increasing

Table 5 The structure of the GDP of the developed Asian economies, %, 2020

	Primary sector	Secondary sector	Including the manufacturing industry	Tertiary sector
Hong Kong, SAR of PRC	0.1	6.3	1.0	93.6
Japan	1.0	28.7	20.0	70.3
Korea, Rep. of	1.8	32.6	25.0	65.6
Singapore	0.0	24.4	21.0	75.6
Taiwan, province of PRC	–	–	–	–

Source World Bank Open Data

efficiency and by transferring less knowledge-intensive capacities to the developing countries of the region. An important feature of this complex industry is its export orientation: finished products make up from 74% (in Singapore) to 92% (in Taiwan) of commodity exports of developed Asian countries.

In Japan and South Korea, the manufacturing is based on the automotive industry. In Japan, it accounts for 20% of value added and 24% of merchandise exports. However, the share of the Japanese car industry in world exports is declining as a result of transnationalisation and moving the industrial capacities abroad (about half of Japanese cars are assembled abroad).

The tertiary sector of developed Asian countries forms the basis of their economies and is undergoing significant changes under the influence of the Fourth Industrial Revolution: e-commerce and autonomous delivery of products are actively developing (including with the help of drones), but the information and communication industries are growing especially actively.

7 Financial Sector

As in other developed countries, the economic situation in the advanced Asian economies is largely determined by their financial sector (see Tables 6 and 7).

In Japan, the main objective of monetary policy is to break out of stagnation and stimulate economic growth by overcoming the deflationary spiral and achieving 2% inflation. To do this, the country's monetary policy focuses on quantitative easing, including through negative interest rates (for short-term deposits), a yield curve control system (focused on the near-zero yield of ten-year government bonds), a significant increase in the balance sheet of the Bank of Japan due to its purchase of government and corporate bonds, as well as exchange-traded funds and trusts, real estate investments. As a result of this monetary policy, Japan's public debt continues

Table 6 The share of government spending in GDP, %

	1990–1999	2000–2009	2010–2019	2020	2021	2022	2023*
Hong Kong, SAR of PRC	21.7	17.3	18.4	29.9	24.0	27.5	24.3
Japan	25.1	34.8	37.7	44.5	43.2	42.8	38.5
Republic of Korea	23.4	18.7	19.9	25.2	26.3	26.2	25.2
Singapore	23.4	14.3	12.4	23.7	18.7	16.4	15.4
Taiwan, province of PRC	23.4	22.4	18.5	18.3	16.8	17.1	17.2
Advanced economies	23.4	38.7	39.6	46.5	43.9	40.8	39.4

Table 7 The balance of the state budget, % of GDP

	1990–1999	2000–2009	2010–2019	2020	2021	2022	2023 ^a
Hong Kong, SAR of PRC	1.6	0.1	2.8	−9.2	−0.2	−3.2	−0.8
Japan	−3.1	−5.8	−5.5	−9.0	−7.6	−7.8	−3.5
Republic of Korea	1.9	1.8	1.4	−2.2	−0.6	−1.6	−1.1
Singapore	3.8	2.6	5.1	−5.9	−0.2	1.4	2.0
Taiwan, province of PRC	−6.1	−4.1	−2.9	−2.9	−1.2	−1.2	−1.1
Advanced economies	−3.7	−3.1	−3.9	−10.5	−7.3	−4.3	−2.9

Source IMF (2022). Fiscal Monitor, April, Taiwan calculated by: Statistical Yearbook of the Republic of China 2018

^aforecast

to grow, reaching 236% of GDP in 2018. Debt servicing costs are also growing and in 2018 they comprised almost a quarter of the state budget, although this is not critical in conditions of low-interest rates.

The country has a very developed credit system headed by the Bank of Japan, which includes both state credit organisations (Development Bank of Japan, Japan Bank for International Cooperation, non-bank state credit organisations) and several hundred different private credit organisations. The ratio of domestic credit provided by the country's banking sector to GDP in Japan is the highest in the world—272% (2016). But this is largely due to the propensity of Japanese companies to finance through loans and credits compared to financing through the issuance and sale of shares and units on the stock market, since the latter method may weaken their close ties with other corporations and banks within the framework of *kigyō shudan*. Nevertheless, Japanese stock exchanges rank fourth in the world and first in Asia in terms of market capitalisation. This is primarily the Tokyo Stock Exchange, which occupies 80% of Japan's exchange turnover, where more than 3500 companies trade and which calculates the two main stock indexes of the country—NIKKEI 225 and TOPIX.

The Japanese fiscal system is characterised by a constant deficit of the consolidated budget (see “European Union”, Table 6), which is largely due to the need to maximise the infusion of budget funds into a slow-growing economy with an ageing population. The tax system is being reformed to meet the needs of the ageing population in the face of an increasing demographic burden, as well as to stimulate inflation (through an increase in the VAT rate). In general, the tax burden in Japan is average (46% of the company's revenue is spent on taxes and fees).

In South Korea, the monetary system is characterised by a higher degree of state intervention. The Ministry of Economy and Finance controls the country's fiscal policy, treasury, coordinates currency transactions. Thus, the State supports the development of priority development sectors, especially the export-oriented ones, by introducing incentives and subsidies. The monetary system remains stable, but the threat of deflation is gradually becoming imminent.

The country's credit system, led by the Bank of Korea, consists of several dozen banks, including national and regional, as well as specialised and foreign ones (the latter account for 32% of banking assets). Specialised banks (for example, the Industrial Bank of Korea) were created to support the above industries, as well as agriculture and fisheries, housing construction and foreign trade (export–import bank). Prior to the Asian crisis of 1997–1998, state ownership in the banking sector was limited only to specialised banks (33% of all banking assets), then as a result of the post-crisis reorganisation of 1996–1999, it exceeded 54%, but by the end of 2004, the state sold all shares and withdrew from the capitals of all Korean banks, managing them now only through the Bank of Korea and the Ministry of Strategy and Finance. The South Korean stock market is represented by the Korea Stock Exchange (KSE) and the electronic exchanges KOSDAQ and KOTC BB. However, it still lags behind the leading developed countries, with the degree of capitalisation of the stock market remaining low. The fiscal system of South Korea is characterised by a stable state budget surplus, which is due to a small (but growing) social security. The tax burden in the country is light—firms spend about 33% of their revenue on taxes and fees.

The monetary system of Singapore is characterised by high diversification (more than 1200 financial institutions) and liberalisation, but at the same time a high level of state regulation. The functions of the central bank are performed by the Monetary Authority of Singapore, which controls almost all financial aspects of economic activity in the country, including the monetary system, the banking sector, the regulation of insurance activities and the stock market and the issue of the national currency.

The monetary policy of the office is aimed at maintaining the nominal effective exchange rate of the Singapore dollar, since in this small open economy, where foreign trade is three times the volume of GDP, the exchange rate plays a more important role than the refinancing rate. For the same purpose, most banks in Singapore (95% of them are foreign) conduct settlements in Asian monetary units (Asian monetary unit, AMU), i.e. the settlement currency that compiles the exchange rates of 13 countries in the region.

Singapore's fiscal system is characterised by a stable surplus and a small share of government spending in GDP, which is due to a small share of social spending in the state budget. The tax system is considered one of the best in the world due to its low tax burden (21%), simple and transparent structure.

The Taiwanese monetary system is also characterised by the large role of the state, which owns the central bank, the land bank and more than a third of the Taiwan Cooperative Bank, and, in addition, it acts as a minority shareholder of the three largest private banks—Mega International Commercial, First Commercial and Hua Nan Commercial. But in general, Taiwan's banking system is characterised by small size and relatively low openness, and recently there has been a rapprochement with mainland China (mainly in the form of mergers and acquisitions). At the same time, the Taiwan Stock Exchange plays an important role in the financial sector: its market capitalisation is 169% of GDP, almost 1000 companies are traded on it and the TAIEX stock index is calculated. The fiscal system is characterised by low taxation (the tax burden is 36%) and a small deficit of the state budget. At the same time, Taiwan has

a reputation as an “international gold repository”, ranking 11th in the world in terms of gold reserves (422 tons, 4% of Taiwan’s gold reserves).

The monetary system of Hong Kong is highly liberalised and globalised, and therefore, instead of a central bank, it is regulated by a number of financial institutions: the Hong Kong Monetary Authority performs the functions of a currency regulator, and the money is issued by multinational HSBC bank (Hong Kong & Shanghai Banking Corporation, which accounts for the issuance of more than 60% of banknotes), Bank of China (Hong Kong) and Standard Chartered Bank. In general, the banking system is characterised by numerous foreign banks. The Hong Kong Stock Exchange trades securities of 1500 companies from all over the world. It ranks sixth in the world in terms of capitalisation (about \$3 trillion), and the Hang Seng Index represents the weighted average value of shares of the 34 largest companies of this exchange.

Hong Kong’s fiscal system is similar to Singapore’s, but it is ahead of the latter in terms of the tax system’s efficiency. Although the tax burden is slightly higher here (22), simplicity (only three taxes) and high transparency put Hong Kong in second place in the world in terms of efficiency.

8 External Sector

The degree of participation of developed Asian economies in world trade varies. Japan has an export quota of 16%, which is natural for a developed economy with a large domestic market. But the indicators of Taiwan and South Korea—53 and 43%, respectively—indicate, on the one hand, high integration into global value chains, and on the other—the small size of domestic markets.

Singapore and Hong Kong represent the other pole: their exports significantly exceed GDP—Hong Kong’s export quota is 188% and Singapore’s is 173%. Such volumes of supplies to the foreign market are achieved primarily through the re-export of goods. Hong Kong plays the role of a world trade centre due to its strong integration into the economy of mainland China. In fact, Hong Kong serves as an intermediary between China and the outside world. Singapore, as the only ASEAN member with a developed economy, plays the role of an intermediary between the developed and the developing countries.

The structure of exports of goods from developed Asian countries reflects their specialisation: up to 90% of exports are industrial goods of medium and complex technical level: cars, ships, machine tools, memory cards, etc. Fuel and energy resources predominate in imports. Foreign trade is characterised by high diversification, among the main partners are represented by both the countries of the region—Japan, China, ASEAN, and countries of a similar level of development—the USA and the EU (Table 8).

Developed Asia (except Hong Kong and Singapore) lags significantly behind the West in trade in services, but is actively developing this trade. A new trend in the export of services is the construction of high-tech turnkey projects abroad, including transport systems, smart factories, science towns, etc.

Table 8 Participation of developed Asian economies in world trade in goods and services, 2020

	Export of goods and services, \$ billion /ratio to GDP, %	The main directions of the merchandise export, %	Exports to GDP PPP, %	Import of goods and services, \$ billion/ratio to GDP, %	The main directions of imports, %	Imports to GDP PPP, %
Japan	793/15	China 22 US 18.5 EU 9.2 Republic of Korea 7 Taiwan 6.9 Other 36.3	14.8	786/15	China 25.8 EU 11.4 US 11.3 Australia 5.6 Taiwan 4.2 Other 41.7	14.7
Korea, Rep. of	771/36.4	China 25.9 US 14.5 Viet Nam 9.5 EU 9.3 HK 6 Other 34	33	536/32.8	China 23.3 US 12.4 EU 12 Japan 9.8 Viet Nam 4.4 Other 38	23
Singapore	733/176	China 13.2 HK 11.4 Malaysia 10.5 US 8.8 EU 7.8 Other 48.2	131	490/144.3	China 13.7 US 12.2 Malaysia 11.6 EU 10.6 Taiwan 9 Other 42.9	87.5
Taiwan, province of PRC	387/58	China 30 US 14.7 HK 14 Japan 6.8 EU 6.6 Other 28.1	24.2	325/49	China 22.2 Japan 16.1 US 11.5 EU 10 Kor.Rep. 67.2 Other 32.9	20
Hong Kong, SAR of PRC	608/177	China 55.2 US 7.2 EU 6.6 UK 3.3 Switzerland 2.7 Other 24.9	137	606/175	China 43.8 Taiwan 9.4 Singapore 7.2 Japan 5.8 Kor.Rep. 5.7 Other 28	137

Source WTO. Trade Profiles 2021—Geneva, 2021

Advanced Asia plays an important role in the international capital movements (Table 9), acting as a net exporter of capital. Japan is the largest exporter—at the end of 2019, its accumulated foreign assets exceeded \$10.1 trillion (about 2 times more than its GDP). Japan actively exports capital both in the form of portfolio and direct investment. Foreigners invest in Japanese securities and government bonds. Hong Kong (and to a lesser extent Singapore) is comparable to Japan in terms of

accumulated investments due to its role as a transshipment base between China and the outside world, thanks to which the volume of accumulated direct, portfolio (export) and other investments is 3–4 times higher than GDP. On the other side, in Japan, South Korea and Taiwan the role of foreign MNEs and foreign capital in general is much lower in comparison with their assets abroad. Japan's role as a host economy for FDI is quite small: only 4.3% of GDP and 0.9% of gross fixed capital formation.

Japan remains the largest net exporter of FDI because of Japanese business transnational activity. The expansion of Japanese MNEs began in the second half of the 1970s and was provoked by the triple revaluation of the yen as a result of the Plaza Agreement in 1975, which revalued the yen. In addition, Japanese manufacturers sought to reduce labour costs and, therefore, opened production facilities in China and ASEAN countries. Japanese investment to the USA and Europe aimed to overcome trade barriers, reduce transport costs, adapt goods to Western consumers and conduct research with local companies. The most global sector of the Japanese economy is the automotive industry (47% of production is carried out abroad), followed by general mechanical engineering (34%), chemical industry (22%), etc.

Japanese MNEs have a wide network around the world. The Asian share of Japan's accumulated FDI at the end of 2017 (28%) is characterised by a very broad diversification, contrary to popular belief that China is the main focus, although, of course, it accounts for a significant share—8%. In addition to China, major investment areas include the developed economies of Asia—9%, ASEAN 4 (Thailand, Indonesia, Malaysia, the Philippines)—8%. The purpose of forming such a structure lies in the geostrategic sphere and is designed to prevent excessive dependence on the Chinese economy. It is worth noting that the diversification of trading partners was achieved not by a decrease in Chinese investment, but by a rapid increase in new investment ties. As for the Western direction, Japanese investments here are almost equally divided between the US and the EU: 32 and 26%, respectively.

The participation of Hong Kong and Singapore in the international capital movements is characterised by the high openness of the economies and the active involvement of foreign corporations. For example, Hong Kong and Singapore are consistently among the ten largest recipients of FDI in the world. Nevertheless, they are not the final destination of the lion's share of investments (especially Hong Kong), acting as an intermediary between the developed West and the developing East (Hong Kong—China, Singapore—ASEAN), which ensures their greater role as donors of capital.

South Korea and Taiwan attract foreign capital in order to develop their own manufacturing industry and high technologies. From net recipients of capital, they themselves became investors due to the development of their own competitive companies and their expansion abroad.

As for the international labour migration, Singapore and Hong Kong have become global centres of attraction for highly skilled migrants from both the developed West and developing Asia. The share of migrants is 38.9% in Hong Kong and 45.4% in Singapore. Japan and South Korea maintain a closed migration policy despite the

Table 9 The international investment position of advanced Asian economies in 2019, \$ billion

	Total assets	Total liabilities	Direct investment		Portfolio investment		Financial derivatives		Other investment		Official reserves
			Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	
Japan	10,113	6682	1903	320	4626	3590	314	306	1947	2467	1323
Korea, Rep. of	1699	1199	440	239	572	741	29	30	249	189	408
Singapore	4042	1544	1060	1336	1374	181	90	1254	1246	1254	3129
Hong Kong, SAR of PRC	5419	3994	1967	2066	1712	538	105	99	1197	1291	439

Source IMF (2020), IIP

ageing population and low birth rate: the share of migrants in their population is 2 and 5%, respectively. This is explained by ethnopsychological features—the closeness of society and the unwillingness to accept more migrants—despite the economic necessity.

9 Social Sector

“A just society, not a welfare state” is a key principle of social policy in advanced Asia, formulated by Lee Kuan Yew (2000). This is expressed in the desire to create the conditions in which people could take care of themselves. Thus, the creation of social (public) goods (including education) prevails in social policy over social security, which allows one to reduce the cost of living and solve the problem of poverty. For example, the creation of an extensive and convenient public transport network relieves the population of the need to purchase a personal car. Municipal housing is built everywhere in Singapore and Hong Kong, which allows to solve the problem of housing shortage. Similarly, in decreasing unemployment, priority is also given to stimulating supply rather than demand: governments invest in high-quality vocational courses, while unemployment payments remain at a minimum level (Li, 2016). The effectiveness of such a system is confirmed by the traditionally low unemployment rate in all advanced Asian countries (see Table 4), but the level of poverty and inequality varies greatly. In addition, vulnerable groups of the population are singled out in all the economies under consideration: women, especially the elderly and single mothers and children. Declining natural population growth exacerbates the problem.

The income policy in the developed economies of Asia, as in other developed countries, is based on progressive taxation, but the effectiveness of income redistribution is very different. In Japan and Korea, the Gini coefficient is very low, 32% respectively. However, the level of poverty in these countries is different. In Japan, the problem of relative poverty of the population is acute: the income of more than 70% of households is less than half of the median income of the population. In many ways, this is a consequence of economic deindustrialisation and two lost decades. In South Korea, 13% of the population belongs to the category of poor, which is due to higher economic growth and a large share of the secondary sector in the employment structure.

The Singapore Central Insurance Fund is a unique social security tool. Employees and employers make monthly contributions to three Fund accounts: a regular account (housing, insurance, education), a special account (pension) and a medical account. The bottom two deciles of the population receive state allowances. After the redistribution of income (taxes, social transfers), Singapore’s Gini coefficient decreases from 43.1 to 37.7. Another interesting feature of Singapore is the lack of statistics on median income and the subsistence minimum, which does not allow us to single out the category of the poor population. According to the government’s explanation, this encourages an individual approach to different types of households. Nevertheless,

this approach is the object of multilateral criticism, because it allows one to “turn a blind eye” to the problem of poverty.

In Hong Kong, 20% of the population is classified as poor, but social security reduces this proportion by 2 times, supporting the elderly (social pensions, medical vouchers) and low-income households (social benefits, municipal housing). The Gini coefficient in Hong Kong is 47.3%, but it should be noted that it has declined significantly over the past ten years (from 53.3%).

In Taiwan, less than 2% of the population has an income below 60% of the median income. Households below the poverty line are supported by the State in the form of subsidies for living, medical benefits, etc. Social security accounts for 20% of Taiwan’s budget expenditures. The Gini coefficient is 33.8%.

10 Conclusions

1. The economic growth of advanced Asian economies (except Japan) is ahead of Western dynamics due to the high rate of gross savings and investment, the extreme openness of their economies and active participation in world trade and capital flows, as well as the integration with other fast-growing countries in the region. Japan, on the other hand, demonstrates the Western level of economic growth.
2. Government intervention in the economy is characterised by an informal nature. The forms of control and interaction between the state and business differ: in Japan it is institutionalised in the form of entrepreneurial organisations; in South Korea, with broad state support of chaebols; in Singapore, through the holding company Temasek; in Taiwan and Hong Kong, through informal state intervention in privatised corporations.
3. The peculiarity of Japan’s entrepreneurial structure is the high degree of consolidation of horizontal type business (uniting financial and industrial corporations) and vertical (uniting corporations with small and medium-sized businesses). Tigers are also characterised by various forms of business consolidation.
4. The leading trend in the demography of the developed economies of Asia is the ageing of the population. In Hong Kong and Singapore, it is compensated by migration growth, while Japanese and South Korean closed migration legislation excludes such a solution to the problem. Another characteristic feature of the human capital of the developed economies of Asia is the traditionally low unemployment rate, largely due to the practice of lifelong employment and an effective system of retraining of labour resources.
5. The basis of the secondary sector of the developed economies of Asia is the manufacturing industry, primarily machine-building and chemical complexes. Their high competitiveness is based on technological leadership and the implementation of the results of the Fourth industrial Revolution, which determines its export orientation.

6. The low size of the state budget (except Japan) is largely due to the low share of social spending. The Japanese deficit is a consequence of the policy of quantitative easing and servicing an impressive public debt. The tax system of the developed economies of Asia is characterised by a small burden.
7. Developed Asia is an important participant in world trade and capital flows. Japan is one of the leaders among the world's exporters of direct investment in absolute terms, and the "tigers"—relative to the volume of their GDP.
8. The social sector of the developed economies of Asia is characterised by the desire of the state to invest in education and public goods, rather than in social security.

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Online Databases

Hong Kong

Census and Statistics Department. <https://www.censtatd.gov.hk/en/>

Japan

Bank of Japan, Statistics. https://www.stat-search.boj.or.jp/index_en.html

JETRO. <https://www.jetro.go.jp>

Statistics Bureau of Japan. <https://www.stat.go.jp>

South Korea

Statistics Korea. <http://kostat.go.kr/portal/eng/index.action>

Singapore

Singapore Department of Statistics. <https://www.singstat.gov.sg>

Taiwan

National Statistics. <https://eng.stat.gov.tw/mp.asp?mp=5>

Less-Developed Economies as a Group



Alexander Bulatov  and Denis Elagin

Abstract This chapter gives an overview of less-developed economies as a group beginning with their differentiation, the peculiarities of their development models, while also covering how the Fourth Industrial Revolution, globalisation and regionalisation impact them. Then it characterises their human capital and innovative development, the specifics of the real and financial sectors, external economic relations and social development.

1 Introduction

The vast majority of the world's economies belong to the group of less developed (developing, emerging-market). The diversity and heterogeneity of this group, as well as their economic systems, complicate their analysis. Despite this, the necessary tools are provided by development economics since the characteristic that unites all developing economies is that they lag behind in terms of economic development.

1.1 Differentiation of Less-Developed Economies

Less-developed countries are an extremely heterogeneous group of economies. The only structuring factor for them is the lag in the level of economic development. Taking this into account, the researchers identify various subgroups of developing economies.

The positions of less-developed countries in the global economy are strengthening due to higher economic growth rates and, consequently, better economic development outcomes. Their economic growth rates in the 2010s were on average more than 2.5 times higher than in developed economies. As a result, back in the early 1980s

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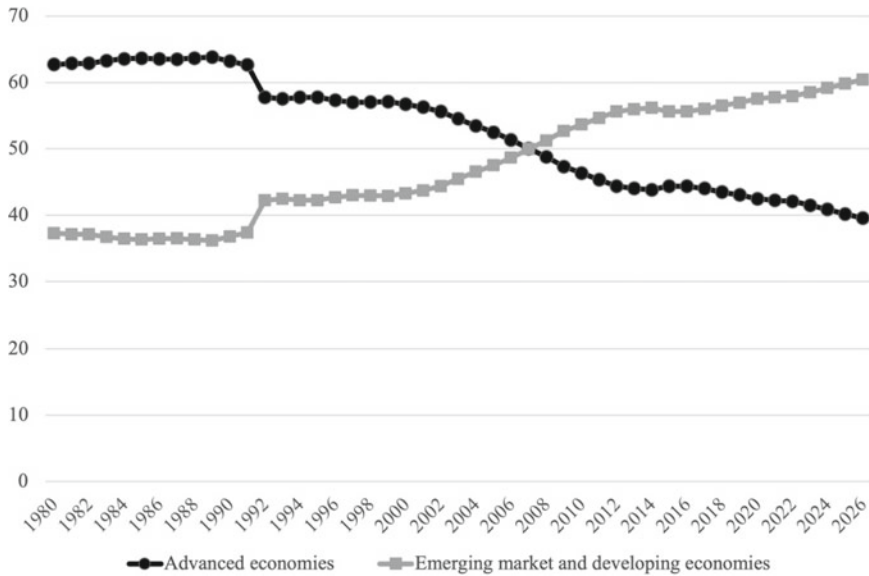


Fig. 1 The share of developed and less-developed economies in global GDP by PPP, % (Source IMF [2021]. World Economic Outlook, October <https://www.imf.org/external/datamapper/datasets/WEO>)

the share of developing economies in global GDP was no more than 40% but then exceeded the share of developed countries and approached 60% (see Fig. 1).

Despite the increasing share of less-developed countries in the global economy, their economic development outcomes are heterogeneous, and there is no evidence of a stable cross-country convergence, that is, the convergence of the countries of the world in terms of economic development. Although global inequality between national economies is indeed decreasing, this is due to a very limited group of developing countries—those of East, South-East and to a lesser extent South Asia (see Fig. 2).

The reduction of global inequality is also a consequence of the dynamism of the largest less-developed economies in the G20. Along with developed economies, it also includes Argentina, Brazil, India, Indonesia, China, Mexico, Russia, Saudi Arabia, Turkey and South Africa.¹ Together, these 10 economies account for about 41% of global GDP, i.e. about 2/3 of the GDP of all developing economies. However, these countries differ greatly not only in their economic weight but also in the level of economic development. While Argentina, Turkey and Russia are close to developed countries judging by some of their economic indicators, the underdevelopment of other large economies is much more evident. At the same time, they are developing more dynamically, especially India, Indonesia and China, which allows them to

¹ Strictly speaking, this criterion is not absolute since neither Argentina, nor South Africa is among the largest 20 economies in the world in terms of GDP.

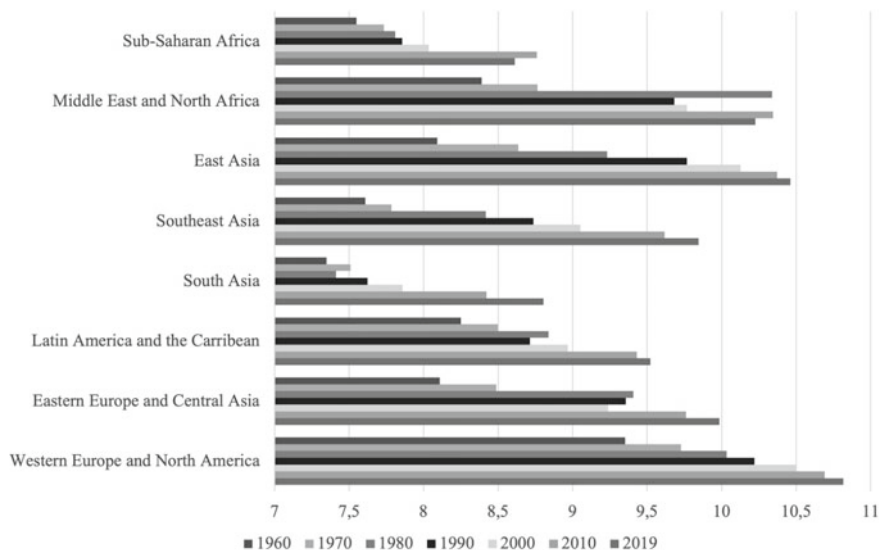


Fig. 2 GDP per capita (by PPP, in const. prices in 2017, logarithmic scale) in various regions of the world in 1960–2019 (Notes Countries with a population of fewer than 1 million people were excluded from the sample. The calculations reproduced those carried out by Johnson and Papageorgiou [Johnson, P., & Papageorgiou, C. [2020]. What Remains of Cross-Country Convergence? *Journal of Economic Literature*, 58(1), 129–175. <https://doi.org/10.1257/jel.20181207>], but with a different grouping of countries by region and less strict requirements for the balance of the sample of countries. Source Feenstra, R.C., Inklaar, R., & Timmer, M.P. [2015]. The Next Generation of the Penn World Table. *American Economic Review*, 105(10), 3150–3182. <https://doi.org/10.1257/aer.20130954>)

quickly close the development gap and increase their weight in the global economy (see Table 1).

Analysts often single out the BRICS countries as a separate group (acronym for Brazil, Russia, India, China and South Africa) as these economies are the leaders of their regions, although the BRICS exists as a club aimed at opposing the foreign economic policy of developed countries and does not comprise a homogeneous group of countries.

The newly industrialised countries (NICs) include economies in an intermediate position between developed and developing countries. These countries are distinguished by a high contribution of manufacturing to GDP (usually at least 15%), although there are no strict criteria for distinguishing this group. The industrialisation they undergo accounts for their high economic growth rates (see Table 2.). The NICs of the first wave (the Republic of Korea, Singapore, Taiwan and Hong Kong) have already joined the ranks of developed economies. Modern NICs usually include emerging economies that are members of the G20, sometimes including also Iran, Chile, Malaysia, the Philippines and Thailand. The intensity of industrialisation (and, accordingly, the dynamics of GDP growth) there is different and depends primarily on their gross capital formation rate and employment growth rates.

Table 1 Indicators of the weight in the global economy, economic development level and dynamics of economic development of major emerging economies in 2020

	Indicator				
	Share in global GDP by PPP, %	GDP per capita by PPP in the const. prices in 2017, \$	The ratio of the three sectors of the economy, % of GDP (2019)	HDI	Average annual GDP growth rates in 2010–2020, %
China	18.33	16,316	7:39:54	0.761	6.83
India	6.8	6166	16:25:49	0.645	5.13
Russia	3.1	26,456	3:32:54	0.824	1.32
Indonesia	2.5	11,445	13:39:44	0.718	4.56
Brazil	2.4	14,064	4:18:63	0.765	0.27
Turkey	1.93	28,394	6:27:57	0.820	5.16
Mexico	1.85	17,852	3:31:60	0.779	1.27
Saudi Arabia	1.2	44,328	2:47:50	0.854	2.48
Argentina	0.7	19,691	6:23:54	0.845	−0.71
South Africa	0.6	12,666	2:26:61	0.709	0.74
Nigeria	0.9	4917	22:27:50	0.539	2.47
Pakistan	0.8	4563	22:18:54	0.557	3.61

Sources UNDP (2020). Human Development Report. <https://hdr.undp.org/en/content/latest-human-development-index-ranking>; World Bank Open Data. <https://data.worldbank.org/>; World Development Indicators. <https://datacatalog.worldbank.org/search/dataset/0037712>; and IMF. World Economic Outlook Database: October 2021 Edition. <https://www.imf.org/en/Publications/WEO/weo-database/2021/October>

Table 2 Dynamics of economic development of some newly industrialised countries in 2020

	Indicator				
	GDP per capita by PPP in the const. prices in 2017, \$	The ratio of the three sectors of the economy, % of GDP (2019)	Manufacturing share in GDP, % (2019)	HDI	Average annual growth rates in 2010–2020, %
Malaysia	26,472	7:37:54	21	0.810	3.98
Chile	23,325	4:29:59	10	0.851	2.08
Thailand	17,285	8:33:59	25	0.777	2.23
Vietnam	8200	14:34:42	16	0.704	6.17
Philippines	7954	9:30:61	18	0.718	4.59

Sources UNDP (2020). Human Development Report. <https://hdr.undp.org/en/content/latest-human-development-index-ranking>; World Bank Open Data. <https://data.worldbank.org/>; World Development Indicators. <https://datacatalog.worldbank.org/search/dataset/0037712>; and IMF. World Economic Outlook Database: October 2021 Edition. <https://www.imf.org/en/Publications/WEO/weo-database/2021/October>

Transition economies (economies in transition) are increasingly rarely singled out as a separate group due to differences in their development trajectories (the UN still denotes them as a separate group). Some transition economies have already joined the group of developed countries or are approaching this status (for instance, Eastern European countries that have joined the EU), or they have managed to maintain relatively high and stable economic growth rates, often due to the development of extractive industries (Central Asian states). Others could not even re-achieve the pre-reform GDP per capita levels (for example, Ukraine or Georgia). Some have never considered themselves a part of this group at all (China and Vietnam), formally preserving the socialist status of their economy.

More than 30 less-developed economies form the fuel-exporting countries group. According to the UN methodology, a country is included in it if the share of fuel resources in the export of goods exceeds 20%. Dependence on energy exports for these economies, along with additional opportunities, is also associated with serious challenges for their development. These countries have found themselves in a winning position as a result of a sharp increase in the fuel prices. For example, after the 1973 oil crisis, real fuel prices (adjusted for inflation) increased approximately fivefold over 40 years, reaching a maximum in 2013. However, a high degree of dependence on energy resources harms economic growth during the crises when fuel price decline. This slows down economic growth and also has negative structural consequences for the national economy. Its structure is affected by the “Dutch disease”, i.e. the development of the extractive industry (as in some of these countries its share in GDP may exceed 40%) at the expense of other industries. The impact of fluctuations in world prices on fuel resources becomes a factor of the constant vulnerability of fuel-exporting countries.

Thus emerged the concept of the “resource curse”. It characterises the long-term negative impact of commodity dependence on the growth rate of the national economy in the absence of effective institutions that could ensure the redistribution of resources between different industries. Despite certain successes of developed fuel-exporting economies (Norway, Canada, Australia), less-developed economies are facing great difficulty solving the problem of economic diversification. On the one hand, due to the high incomes from the export of raw materials, social demands for improving institutions are inadequate partly because of populist social policies. On the other hand, the elites of these states may not be interested in restructuring institutions while the country receives additional income from fuel exports. The cases of Venezuela and Russia reveal that fuel-exporting countries can find themselves in a very vulnerable position during external economic and policy shocks.

Approximately 25 countries belong to the group of other primary product exporters (as a rule, metals and agricultural products). The similar structure of their economies brings them the same benefits and problems as those of fuel-exporting countries since primary commodity prices are subject to significant fluctuations. This group includes Latin American states (Argentina, Chile, Peru), many African and some Asian countries (for example, Uzbekistan).

Least-developed countries (LDCs) form a separate group. These countries have a low level of income (GNI per capita of \$1025 or less) and also face other structural obstacles to economic development (low level of human capital development and strong vulnerability to economic and environmental shocks). The list of the least-developed countries has been compiled by the UN since 1971 and is regularly updated. Currently it includes 46 states, most of which are African. It should be noted that at the moment only six states have been excluded from the list of the least-developed countries. Inclusion in this group is also associated with some preferences, for example, lower duties on the goods of these countries, as well as increased development assistance, which should contribute to solving the structural problems of their economies.

To some extent, a similar (and even partially coincident in terms of composition) group is fragile states, whose distinctive characteristic is vulnerability and inability to cope with internal and external development challenges. Accordingly, because of this, the organisations that single out this group, for example, the World Bank and the OECD, identify them as priority recipients of development assistance. To classify a country as fragile a broader set of criteria is used, which also includes political and societal factors of vulnerability.²

The IMF identifies a group of 36 heavily indebted poor countries, which are characterised by a significant and stable negative balance of the current account of the balance of payments that results in increasing external debt. The IMF and the World Bank are implementing a programme to restructure their debt and reduce their debt burden.

1.2 Major Trends, Problems and Challenges of Economic Development in Less-Developed Economies

Less-developed economies, despite their relative economic underdevelopment and lesser involvement in international economic relations, are still affected by the major trends and challenges of global economic development.

Although the Fourth Industrial Revolution and the digitalisation are closer related to the concerns of developed economies, new technologies are also being introduced in the real sector of less-developed economies. China and some Southeast Asian countries are among the leaders of the Fourth Industrial Revolution. China is a global leader in the number of new industrial robots (more than 30% of new installations). The country accounts for about 60% of devices connected to the Internet of Things (IoT), and about 20% of global spending on its development. China is also the largest e-commerce retail market and has its own technological innovations.

But in general, in terms of the depth of the changes taking place, the less-developed economies as a group lag far behind the developed ones (Milanovic 2016), and the problem of the global digital divide remains relevant. Many sectors of their

² OECD (2020). States of Fragility. <https://www.oecd.org/dac/states-of-fragility-fa5a6770-en.htm>.

economies remain unaffected by the new industrial revolution (especially agriculture and labour-intensive industries). Despite large-scale investments, even in the leading developing countries and NICs, the industrial revolution largely covers the most developed regions of these countries and large urban agglomerations, while other areas, especially rural ones, remain on the periphery of the ongoing changes. The slow spread of the Internet and inadequate speed of the Internet connection threaten some least-developed countries with an aggravation of the problem of economic underdevelopment since they cannot introduce modern technologies.

Less-developed economies actively participate in globalisation, export a significant part of their products (mainly to developed countries), attract a lot of foreign capital (and also increasingly export it), export and some also actively import labour. For example, the share of these countries in global exports in the twenty-first century increased from 30 to 43%. At the same time, their economies remain less open as they are more active than developed economies in applying restrictive measures in foreign trade and capital flows. This is due to their desire to protect infant industries from external competition. In some less-developed economies (for example, NICs), the problem of insufficient competition in the domestic market is partly solved on the basis of an export-oriented modernisation model thanks to intense competition in external markets (see Sect. 12.2).

Regionalisation processes are also active in the developing world, i.e. more active development of foreign economic relations within individual regions. Regional integration associations of less-developed economies belong to the type of new regionalism, differ markedly from the model of regional integration characteristic of Western Europe and do not follow the theory of the stages of regional integration formulated by B. Balassa. Integration associations of these countries are mainly free trade areas, which, however, liberalise the movement of economic factors rather than only trade in goods (FTA+ format). An example is ASEAN, where, along with trade in goods, trade in services, the movement of capital and skilled labour are also liberalised. Such a model does not imply creating more advanced forms of integration, which allows to avoid serious political contradictions between the participating countries.

The new regionalism in less-developed economies is manifested not only in the form of creating formal institutions. Informal integration based on inter-firm cooperation is also developing. These processes are often associated with the integration of these countries, primarily NICs, into global value chains based on investments in foreign MNEs and the development of component manufacturing (with subsequent trade) and assembly plants. This contributes to the development of trade relations between firms in individual countries, including intra-industry ones. Informal integration gives an impetus to bilateral preferential trade agreements between individual countries and regional integration associations that do not involve the creation of supranational institutions but are aimed only at trade liberalisation. The network of such agreements covers the Indo-Pacific region.

We should also pay attention to the fact that the processes of globalisation and regionalisation in less-developed countries remain less profound than in Europe or North America. For example, the share of intraregional trade rarely exceeds 20% of

the exports of the countries of the respective regions (it is at this or an even lower level in ASEAN, MERCOSUR and Eurasian Economic Union). The development of foreign economic relations between the countries is hindered by the similar structure of their exports and its orientation mainly to the markets of developed countries, as well as differences in regulation at the national level.

The main challenge for less-developed economies is modernisation which requires high rates of economic growth. It should be noted that economic schools treat this problem differently. If the neo-institutional theory indicates that high rates of economic growth cannot be achieved without effective institutions (Acemoglu et al., 2005), the neoclassical school tends to a different logic arguing that more effective institutions are formed as a consequence of high growth rates (Jones & Manuelli, 2005). In practice, economic policy in developing countries has historically focused on economic growth, however without improving institutions, its pace is unlikely to be consistently high.

In any case, the growth rates in the developing world remain noticeably higher (see Table 3) and significant changes in the future are quite unlikely. However, the so-called “new normality” in the global economy signifies an increase in the level of uncertainty. As the crisis caused by the coronavirus has shown, national economies (including less-developed ones) are vulnerable to unpredictable risks. In addition, taking into account the slowdown in the growth of leading emerging economies (for example, India and China) that was evident even before the crisis, the real GDP growth rates of less-developed countries may be significantly lower than predicted.

The problem of industrialisation and post-industrialisation also remains relevant for less-developed economies in the context of modernisation. Some researchers are concerned about the problem of *premature deindustrialisation*: the contribution of industry to GDP in many developing economies (except for the countries of Southeast and East Asia) is declining. These countries face the problem of deindustrialisation at a lower stage of economic development than developed economies. Meanwhile, the development of labour-intensive industries has historically played an important role in increasing labour productivity and accelerating economic growth. Given the current peculiarities of global economic development, this experience is less likely to be repeated. The phenomenon of premature deindustrialisation is most likely associated with the impact of globalisation and the simultaneous increase in trade openness among less-developed economies. As a result of liberalisation, previously protected industries turned out to be uncompetitive compared to imported products, and a decrease in relative prices for industrial goods (due to increased openness, technological development, and the appearance of new producers) made industrial production there even less profitable. As a result, the rates of economic growth and the level of well-being of these countries may be lower than those of the countries that have already achieved industrialisation, or which have comparative advantages in the production of industrial products (NICs of East and Southeast Asia).

Although the share of services in the GDP of less-developed economies is rapidly increasing (since 1990 their share in the GDP structure has grown from 40 to 53%), the example of some least-developed countries (Afghanistan or South Sudan) indicates

Table 3 Forecast of average annual GDP growth rates for less-developed economies, %

	Period		
	2007–2020	2020–2030 ^a	2030–2060 ^a
Argentina	1.0	0.6	1.1
Brazil	1.2	1.1	1.4
China	7.3	4.2	2.1
India	5.1	4.8	2.8
Indonesia	3.8	3.5	2.4
Russia	1.9	1.1	1.0
South Africa	0.8	1.1	2.0
Mexico	1.1	1.1	1.5
Turkey	3.9	3.1	1.9
Chile	2.1	1.4	0.9
<i>Memo</i>			
OECD member countries	1.3	1.3	1.1
G7 Countries	1.0	1.1	1.0

Source Guillemette, Y., Turner, D. (2021). The long game: Fiscal outlooks to 2060 underline the need for structural reform. *OECD Economic Policy Papers*. No. 29

^aPotential growth rates, i.e. excluding recessions and booms

that this may be due to the development of low-skilled services (retail trade, transport, etc.).

Another challenge is the high birth rates in many developing countries, especially in the least developed ones (up to 3.5%). Even maintaining relatively high rates of economic growth of 4–5% per year may not be enough to absorb their rapidly growing economically active population. This could threaten to exacerbate social conflicts, which already harm the development of the least-developed countries. The cumulative losses of some countries (for example, Syria or Afghanistan) as a result of outbreaks of violence may amount to more than 50% of their GDP.³ Consequently, such states are thrown far back in terms of their economic development, and economic reconstruction can take up to several decades even when the situation becomes normal. In addition, conflicts have a deeper negative impact on the level of human development (not only because people face death or have to flee their homes but also due to loss of access to health and education, malnutrition and other humanitarian problems), which hinders development in the long term.

³ The Economic Value of Peace 2021: Measuring the Global Economic Impact of Violence and Conflict//Institute for Economics & Peace. Sydney, 2021. <https://www.visionofhumanity.org/wp-content/uploads/2021/01/EVP-2021-web-1.pdf> (accessed: 20.02.2022).

1.3 *Human Capital and Innovative Development*

Eighty five percent of the world's population lives in less-developed economies. Their population continues to increase quite rapidly, although much slower than in the second half of the twentieth century. The only exceptions are some leading developing countries (Russia, China, Latin America) and the countries of Eastern Europe where the population is already aging. According to the UN forecast, in the 2020s, the population growth rate in less-developed economies should be a little more than 1% per year (but it is on average two times higher in the least-developed countries), which is significantly higher than in developed countries (about 0.1%). Approximately 28% of the population is under the age of 14. The dependency ratio has decreased along with the birth rates and is now 0.55, but in sub-Saharan Africa, this indicator is much higher—0.84, i.e. only 16% of the region's population is of working age.

In general, developing economies lag in terms of human capital development and in terms of government spending on its development which is reflected in the Human Development Index (see Table 4). It should be noted that this indicator does not fully reflect the level of human development in less-developed countries, since in terms of GNI per capita energy-exporting countries may be ahead of developed countries, which may distort the assessment of human development.

In some developing regions, especially in sub-Saharan Africa and South Asia, even basic problems remain unresolved. For example, the problem of eliminating illiteracy remains relevant (in some African countries, the adult literacy rate is 30%, in India, it is a little more than 70%). Increasing accessibility and state support for primary and secondary education do not guarantee its quality. Although the International Student Assessment Programme (PISA) covers a few developing economies, their results (except for China) are much lower than the average of developed economies. The problems with the quality of education and health care are associated with a lack of qualified specialists, low technical equipment, low motivation to work and weak labour discipline (Todaro & Smith, 2020). The average years of schooling indicate that many students do not complete school education. This is not due to lack of “usefulness” of educational services, but rather the poverty of the population who have to start working even before they reach working age.

Discrimination (on gender, ethnic, religious or other grounds) and the ineffectiveness of measures aimed at combating it hinder more effective development of human capital. As a result, the available labour resources are used less efficiently and social mobility is severely limited. The gender inequality index (the higher the value, the more discrimination women are subjected to), calculated by the UN, in the group of less-developed countries is 0.463, while the indicator of developed countries is only 0.205.⁴

Major developing countries pursue active scientific and innovation policy with increased government spending on R&D, which, nevertheless, are lower than in developed countries in relative terms and rarely exceed 1% of GDP (although China

⁴ UNDP. Gender Inequality Index. <https://hdr.undp.org/en/content/gender-inequality-index-gii>.

Table 4 Human Development Index and its components in less-developed economies in 2020

	Indicator				
	HDI	Life expectancy at birth, years	Expected years of schooling, years	Average years of schooling, years	GNI per capita, \$
Middle East and North Africa	0.705	72.1	12.1	7.3	14,869
East Asia and the Pacific	0.747	75.4	13.6	8.1	14,710
Eastern Europe and Central Asia	0.791	74.4	14.7	10.4	17,939
Latin America and the Caribbean	0.766	75.6	14.6	8.7	14,812
South Asia	0.641	69.9	11.7	6.5	6532
Sub-Saharan Africa	0.547	61.5	10.1	5.8	3686
Average for less-developed countries	0.689	71.3	12.2	7.5	10,583
Average for least-developed countries	0.538	65.3	9.9	4.9	2935
<i>Memo</i>					
Global average	0.737	72.8	12.7	8.5	16,734
OECD member states	0.900	80.4	16.3	12	44,967

Source UNDP (2020). Human Development Report: The next frontier: Human development and the anthropocene. <https://hdr.undp.org/sites/default/files/hdr2020.pdf>

spends more than 2%). The innovation strategy of less-developed countries relies on technology borrowing. This approach seems reasonable given that it is cheaper for developing economies to introduce borrowed technologies, provided sufficient investment in R&D is ensured. This allows them to develop faster, approach the “technological frontier” and gradually move on to develop their own technologies.

The Global Innovation Index indicates that the innovation policy of China, India and the newly industrialised countries of Southeast Asia is proving to be quite effective. The positions of these countries in the ranking are improving, and while India and Southeast Asian countries occupy places in the top 30 or 50, China is in the 14th position. These countries aim to gradually improve their technological innovations that are in demand on the world market, develop infrastructure (for example, technoparks are functioning quite successfully), as well as financial institutions aimed at supporting innovation (such as venture funds). The innovative activity of the private

sector is growing, and young “unicorns” (young innovative firms with an estimated value of more than \$1 billion) are emerging. China already has more “unicorns” than Europe.

The main obstacle to the development of innovations remains the institutional environment of less-developed economies, in particular, intellectual property rights protection and transparency of regulatory decisions, lack of financial resources and, most importantly, the cheapness of labour. As a result, the pace of innovations and government support for them in many developing countries (especially in Africa) remains insufficient to converge with the “technological frontier”, which threatens them with aggravating their economic underdevelopment relative to more-developed countries.

1.4 Real Sector

The main trend in the real sector of less-developed economies is industrialisation and post-industrialisation although there are significant differences in the results achieved.

As shown in Table 1, the structure of GDP differs greatly even in the leading developing countries. Although the contribution of the secondary sector to GDP is the largest in energy-exporting countries, it does not fully reveal the level of industrialisation. It is better reflected by the share of manufacturing in GDP, primarily engineering products as the most technologically complex goods in the structure of industrial production. Engineering products contribute the most to the value added of the industry in the countries of East and Southeast Asia, as well as India, Turkey and Brazil, where it ranges from 18 to 30%, which is slightly lower than in the USA and Western Europe (30–40% of the value added of the industry). At the same time, in many fuel-exporting and African countries, the share of engineering in industrial production remains insignificant (often no more than several per cent). It should be noted that, along with the decline in the industry contribution to GDP as a whole, there is a downward trend in the value added of engineering as probably part of a larger trend of “premature deindustrialisation” in less-developed economies.

As for the contribution of high-tech products to the added value of the industry, similarly, the share of such products is the largest in the NICs of Southeast Asia (Philippines, Malaysia, Thailand, Vietnam), as well as Mexico and China, where it accounts for 30% of the industrial value added. Its share in the structure of their industrial production continues to increase, albeit slower than previously, which means that these economies have achieved a high level of industrialisation. Nevertheless, they still lag behind developed economies. On the other hand, high-tech goods, as well as engineering products, are barely produced in the least-developed countries, and their production is decreasing in some transition economies. For example, in Russia, the share of machinery and transport equipment in output has decreased from 20 to 8% (a similar trend is also observed in Ukraine and Belarus) since the early 90s, which

may be due to both the consequences of market reforms and the deindustrialisation they caused, as well as insufficiently active industrial policy.

Although the Fourth Industrial Revolution mostly concerns the industrial sector of developed countries, certain changes can be seen in the developing world too. Even though automation is slow in developing countries, Asian NICs have already become one of the largest markets for industrial robots, and China has become a global leader in their installation and production. The newly industrialised countries of Southeast Asia, China and, to a somewhat lesser extent, India, have taken a leading position in the production of ICT equipment and other modern high-tech products, for example, solar panels, industrial wind turbines, etc.

In terms of the depth of the changes taking place, developing countries lag far behind developed countries. For example, according to the International Federation of Robotics, the number of installed industrial robots per 10,000 employed in all less-developed economies, except China, is below the global average.⁵ This can be explained by relatively higher costs of automation compared to developed countries due to lower costs of labour. If Asian NICs might successfully transform their industrial sector during the new industrial revolution, other developing economies may face significant problems in adapting to the changes the global economy experiences, especially taking into account the trend towards their deindustrialisation.

The services contribution to GDP in developing countries is increasing, and in some of them, its share exceeds 50% of GDP. Although it is not the contribution of the tertiary sector to GDP that is important, but its structure, whether it is dominated by traditional sectors (such as trade and transport) or more modern services (social, information and communication and business services). The contribution of traditional services to GDP is predictably large in the least-developed countries, while in the more-developed economies modern services contribute more to GDP. In addition, a large share of the tertiary sector in GDP (sometimes more than 60%) is distinguishes small states functioning as offshore financial centres, as well as some states that are centres of international tourism.

Digitalisation has a noticeable impact on the development of the service sector in the leading developing countries (primarily in China, India and Southeast Asia). They have their innovations and large companies in the digital non-financial sector (Chinese Alibaba and Tencent are among the ten largest in the world in terms of capitalisation), as well as a large number of young innovative companies (“unicorns”), and their products are competitive in foreign markets, becoming popular with consumers in developed countries.

Other less-developed economies (Russia, leading Latin American countries) also have significant potential in the development of the digital sector, which is due to the large size of their markets and being able to produce their own technologies and innovative companies. In other developing countries (especially in the least-developed group), the impact of digitalisation is negligible. This is due to both insufficient infrastructure development and the spread of technologies (first of all, the Internet

⁵ International Federation of Robotics (2021). Presentation World Robotics press conference extended version. <https://ifr.org/free-downloads/>.

and especially broadband Internet connection), insufficient investments, low level of digital literacy and awareness of the population and the private sector.

As for the structure of employment, in developed countries, it usually differs little from the structure of GDP, which implies relatively equal labour productivity in all sectors of the economy. Developing economies are characterised by more significant imbalances associated with the concentration of employment in the primary and tertiary sectors. In China, the proportion of people employed in the primary sector is around 25% (contribution to GDP—7.0%), 42% in India (18.8%) and 50% in sub-Saharan Africa. This is due to hidden unemployment and lack of capital equipment in the primary sector. As a result, labour productivity remains low.

1.5 Financial Sector

Developing economies are noticeably far behind developed ones in terms of financial development. In some of them (as, for example, in sub-Saharan Africa) financial markets are only emerging. The indicators of the transition economies (Eastern European and Central Asian countries) are also relatively low which indicates the immaturity of their financial institutions (see Table 5).

The financial sector plays a more significant role in the Middle East and North Africa although there are noticeable imbalances here. Arab monarchies of the Persian Gulf have the most developed financial markets. Many of the states of the region rely on financial sector in their attempts to diversify their economies. At the same time oil revenues are traditionally directed to foreign investments, not to national economy, often by sovereign funds of these states.

The bulk of the financial resources of less-developed economies falls on the Indo-Pacific region, primarily China. This is indicated by the huge bank assets of this country (more than 190% of GDP), which, in turn, are associated with an expansionary monetary policy. The growth of banking assets, therefore, is associated with an increase in the supply of money in the Chinese economy (monetary aggregate M2), which is one of the highest in the world and exceeds 180% of GDP. Chinese stock market is less developed although it has already become one of the largest in the world.

Most less-developed economies have a less-balanced monetary system than developed economies. This is also evidenced by higher inflation although the effectiveness of anti-inflationary policies in the developing world as a whole has increased markedly, hence a decrease in the inflation rate in the period before the coronavirus pandemic. Inflation rate is traditionally explained primarily by non-monetary factors. These include sectoral imbalances in the economies, monopolisation, crop failures, external policy factors and imported inflation (as a result of fluctuations in prices for major export goods and instability of the national currency).

The fiscal systems of less-developed economies are usually less efficient than those of developed countries. This is reflected by a smaller share of income taxes in the fiscal revenues. In turn, this is since a significant part of the population often

Table 5 Structure of financial capital in less-developed economies, weighted averages for 2019–2020

Region	Indicator				
	Stock market capitalisation, % of GDP (2020)	Outstanding securities, % of GDP (2019)	Banks assets, % of GDP (2019)	Assets of nonbanking financial institutions ^a , % of GDP (2019)	Total, % of GDP
East Asia and the Asia–Pacific region	82	99	177	22	380
South Asia	88	28	67	–	183
Latin America	53	81	78	16	228
Middle East and North Africa	176	41	93	–	310
Sub-Saharan Africa	–	32	37	42	111
Central-Eastern Europe and Central Asia	38	30	57	19	144
<i>Memo</i>					
OECD	148	74	94	93	409

Source BIS Statistics Explorer. <http://stats.bis.org/statx/toc/LBS.html>; and The World Bank. Global Financial Development. <https://databank.worldbank.org/source/global-financial-development>

Note The data is incomplete due to a large number of missing observations

^aFinancial institutions that can not accept deposits from individuals and legal entities, but perform financial intermediation functions through the use of other financial instruments

receives income below the taxable minimum, as well as due to the spread of informal economic activity. As a result, the tax burden falls on the extractive industries, as well as private sector enterprises, which generally negatively affects its competitiveness and retains incentives to “remain in the shadows”.

Inefficient tax systems lead to persistent fiscal deficits in many developing countries (with an average of -4% of GDP), and in 2010s fiscal imbalances were exacerbating, the opposite of the trend among developed economies. This increases government debt. In the 2010s, it increased from 38 to 50% of GDP in less-developed economies, and they find it more difficult to service public debt since less financial capital means higher borrowing rates for this group of countries. In addition, they also do not have freely convertible currencies, so the governments of countries, as well as private sector companies, have to borrow in foreign currency at global capital market. A significant part of the debt, therefore, falls on foreign creditors and is often denominated in foreign currency (i.e. their debt is primarily external). On average, in less-developed countries, public debt is on the threshold of sustainability (according to the IMF criterion—50% of GDP), but in some leading economies, for example,

in Brazil, it reaches 100% of GDP. In many less-developed countries, private sector debt is also increasing, for example, in China, it has surpassed 200% of GDP.

1.6 External Sector

Most of the less-developed economies export relatively simple goods and services, while more sophisticated goods are mainly imported. Nevertheless, the structure of their exports is becoming more sophisticated. For example, the NICs of East and Southeast Asia are already leaders in the global export of office and telecommunications equipment and occupy increasingly strong positions in the export of other engineering products, as well as chemicals and pharmaceutical products. The share of engineering products and high-tech exports in Vietnam, Malaysia and the Philippines reaches 40%, while in China it is 30%. In fuel-exporting countries, the share of such products in exports is small (no more than 10%).

If global prices for finished goods are relatively stable, then raw materials, fuel, and agricultural products are exchange-traded commodities, which means high volatility in their prices (especially for fuel) and, accordingly, instability of income from their exports. However, they remain the main source of freely convertible currency, which less-developed countries need to pay for imports.

The sophistication of the commodity structure of exports of less-developed economies is also related to the activities of MNEs, which integrates their economies into global value chains. The leaders here are the NICs of Southeast Asia, where global chains often account for more than 50% of their foreign trade. Cheap raw materials and low labour costs create competitive advantages for local and foreign companies in producing an increasingly wide and complex range of goods. As a result, along with the production of simple industrial products (for example, textiles), the production of rather complex ones is being located in these countries (this is demonstrated by the indicators of high-tech exports). The participation of these countries in global value chains is most often associated with the trade in intermediate goods that can be produced in different countries, and the subsequent assembly of the final products. In the NICs of Southeast Asia, more than 40% of the added value of industrial exports is accounted for by intermediate goods produced in other countries (most often in China). In addition, 10–20% of exports account for the trade in intermediate goods when the final product is manufactured in other countries.

Less-developed economies are increasingly attracting capital from abroad, primarily from developed countries. The countries that have managed to improve their investment climate and have favourable prospects for economic growth have achieved the greatest success in attracting foreign capital. These are China (it accounts for a fifth of all inward FDI to developing countries), Southeast Asian countries, Brazil and India. Moreover, these economies themselves have become active exporters of capital. For example, China's capital exports are comparable to its imports. The Arab countries of the Persian Gulf are active capital exporters. These countries have a positive and significant (up to several % of their GDP) current

Table 6 Indicators of debt sustainability in less-developed economies in 2008–2020

Indicator	2010	2016	2020
External debt/GNI (%)	22	26	29
External debt service payments/exports (%)	10	15	17
Short-term external debt (%)	27	24	25
International reserves/foreign debt (%)	120	83	72

Source The World Bank. International Debt Statistics. <https://data.worldbank.org/products/ids>

account of the balance of payments, but at the same time, they are characterised by a lack of attractive investment opportunities in the national economy, high investment risks, strict government regulation (and sometimes, on the contrary, state encouragement of foreign investment). In addition, unfavourable institutional environment and investment climate can lead to the so-called “capital flight” to more attractive and secure jurisdictions.

Less-developed economies remain mainly exporters of labour, although some, on the contrary, have become major centres of immigration. Their share in the population of the Persian Gulf countries may exceed 90%. Migrants’ remittances can be an important source of income for national economies (for example, in Kyrgyzstan and Tajikistan remittances make up 30% of GDP).

Since the current account of the balance of payments of many less-developed economies is negative and is not compensated by the positive balance of the financial account (it reflects the balance of capital flows), they have an increasing external debt. In 2020, they spent 17% of their export earnings to service it. But, in general, indicators of debt sustainability remain relatively stable (except for African states), which indicates a decreasing severity of this problem compared to the end of the twentieth century, although the pandemic forced many states to increase government spending and borrowing. Debt sustainability is assessed based on the indicators shown in Table 6. Currently, there are no significant negative dynamics in the main indicators, although the average level of debt burden has slightly increased.

1.7 Social Sector

Social security systems in less-developed economies remain underdeveloped, primarily since many states cannot support large-scale social spending. It rarely exceeds 10% of GDP even in the leading developing countries while the OECD average is 20% of GDP. The costs of pension benefits are relatively small in all countries except for the leading countries of Latin America and Russia, where the median age of the population is higher (it accounts for 9% of GDP and is only slightly lower than in developed countries). At the same time, in China, government spending on pension benefits is 4% of GDP, and in India it is only 2% of GDP. Pension systems

in developing countries often do not cover the whole population. In India, it is estimated that only around 20% of people of retirement age are covered by the pension system, while in some African countries national pension systems do not exist yet. As a result, the level of well-being of people over 65 in less-developed countries is lower than average. In India, South Africa and China, 20 to 40% of the population over the age of 65 receive incomes two times lower than the median.

Poverty is still a major social problem in this group of countries. As for absolute poverty (incomes below \$1.9 per PPP per day per person), approximately half of the population of sub-Saharan Africa is affected by it, while in some countries (Madagascar, DR Congo), this is true for more than 70% of the population. At the same time, the proportion of people living in absolute poverty in the group of developing economies as a whole is declining and has fallen to 12%, although back in 1990, according to the World Bank, it was 44%. This indicates that the efforts of national governments and donors have finally borne fruit, especially in the largest developing countries, India and China. Despite this, a little less than one billion people live below the absolute poverty line in less-developed economies.

To better understand the scale of the problem of poverty in the developing world (at least in the more developed part of it) one should analyse the proportion of the poor population according to the national definition of poverty. It is high even in relatively developed countries, for example, South Africa and Mexico (more than 30% of the population). The problem of relative poverty and inequality remains relevant and is primarily associated with income inequality. It is very high in South Africa and Mexico, where the Gini index is 63 and 48, and the upper decile of the population accounts for 50 and 39% of income, respectively. At the same time, in some countries, for example, Eastern European economies, this problem is not so acute. This difference is probably due to a lower level of open unemployment (in South Africa, its level exceeds 30%) and vulnerable employment (part-time, seasonal employment or self-employment) in Eastern Europe, as well as a relatively smaller share of shadow economic activity, compared to African and Latin American states.

Health, education and quality of life are very acute problems in the vast majority of developing countries. Moreover, both quality and access to these main public goods is an issue. The consequence of this is a relatively low level of human development.

It is more reasonable to assess the quality of public goods provided to the population based on a set of indicators. Some of them are presented in Table 7.

Although public spending on health and education is increasing in the group of less-developed economies as a whole, and life expectancy and the scale of providing educational services are increasing, a significant part of the population still does not have access to them. The epidemiological situation remains quite complicated, especially in African and South Asian countries. In many developing countries (for example, in South Asia and sub-Saharan Africa), private educational and medical institutions become more widespread. Some of them have been established in a partnership with donor countries, and are supported by local and foreign NGOs, sometimes also by national governments. Their activities in the least-developed countries indicate that in conditions of weak state institutions, they can be more effective than the state provision of public goods.

Table 7 Health and education development indicators in less-developed economies, 2019

	Indicator						
	Healthcare			Education			
	Life expectancy, years	Infant mortality (under 5 years), per 1000 births	Government spending on healthcare, % of GDP	Primary education enrolment rate, % of the school-age population	Average number of years of schooling, years	Government spending on education, % of GDP ^a	
Middle East and North Africa	74.3	21	5.52	94	7.3	4.3 ^a	
East Asia and the Pacific	75.4	14	5.07	96	8.1	3.2	
Eastern Europe and Central Asia	73.4	11	5.41	92	10.4	3.9	
Latin America and the Caribbean	75.6	16	7.96	94	8.7	4	
South Asia	69.6	39	3.1	88	6.5	2.5	
Sub-Saharan Africa	61.6	73	4.95	75	5.8	3.5	
Average for less-developed economies	71.2	40	5.33	89	7.5	3.7	
Average for least-developed economies	65.3	61	3.88	81	4.9	3.1	

(continued)

Table 7 (continued)

	Indicator					
	Healthcare		Education			
	Life expectancy, years	Infant mortality (under 5 years), per 1000 births	Government spending on healthcare, % of GDP	Primary education enrolment rate, % of the school-age population	Average number of years of schooling, years	Government spending on education, % of GDP ^a
<i>Memo</i>						
World	72.8	37	9.84	89	8.5	3.7
OECD countries	80.2	7	12.53	96	12	4.9

Source: World Bank Open Data. <https://data.worldbank.org/>; and UNDP (2020). Human Development Report 2020. The next frontier: Human development and the anthropocene. <https://hdr.undp.org/sites/default/files/hdr2020.pdf>
^a2021

Considering that a minority of less-developed economies has sufficient resources to carry out an active social policy, development assistance from more-developed countries and non-government organisations continues to play an important role in solving key social problems. In 2018, aid provided by OECD member states for the development of social infrastructure amounted to \$47 billion, humanitarian aid amounted to \$15 billion more. There is still a problem of uneven distribution of aid funds among less-developed economies, its concentration in a relatively small number of states and the generally low effectiveness of development assistance. Despite this, it is still of high importance as a tool of economic growth promotion in less-developed economies.

2 Conclusions

1. A common characteristic of all developing countries is their economic underdevelopment. However, they are very heterogeneous and differ greatly both in terms of the level of development they have achieved and the structural characteristics of their economies. Therefore, there are groups of less-developed economies (for example, leading developing, NICs, least-developed, etc.) united by common features of economic development.
2. Although the Fourth Industrial Revolution is more evident in developed countries, less-developed economies do not remain aloof from the changes taking place in the world economy. Some of them, for example, China, are among the global leaders in the modernisation of industrial production. However, significant imbalances persist between different groups of less-developed economies, and also within them. The Fourth Industrial Revolution and digitalisation mostly affect the most developed regions and large urban agglomerations of developing countries.
3. Less-developed economies, as well as developed countries, are becoming more globalised. The openness of their economies is gradually increasing, although it remains lower than in developed countries. They are actively involved in global value chains. As a result, their share in world exports is growing (from 30 to 43% in the twenty-first century). In addition, they have traditionally been active exporters of labour, and some leading emerging economies have also become major exporters of capital.
4. Foreign economic relations between less-developed economies are also developing within certain regions. Regionalisation develops both at the formal (as a result of the emergence and development of integration associations), and informal levels (in the form of cooperation between firms). However, intraregional trade is below the desired threshold, its share rarely exceeds 20% of the total exports of the region. This can be attributed to the similar structure of exports, orientation to the markets of developed countries and differences in regulation at the national level.

5. Knowledge as an economic resource is playing an increasingly important role in the context of the Fourth Industrial Revolution and digitalisation, but it is mainly imported by developing countries. On the one hand, there is nothing wrong with this, since borrowing technologies is cheaper, promotes economic growth and can become the basis for developing national innovations. On the other hand, the backlog of countries unable to introduce innovations is likely to deepen. So far, a few less-developed countries have managed to achieve significant success in developing their innovation systems, including due to insufficient investment in R&D and institutional weakness. The exception is China which in the future may become one of the main producers of innovations and technologies in the global economy.
6. The main task of developing countries is to modernise their economies and bridge the development gap. This requires high rates of economic growth. On the one hand, they are higher in the developing world than in developed countries, which can be interpreted as evidence of global convergence. On the other hand, in some groups of countries growth is uneven, therefore, they fail to catch up with developed countries. The highest rates are predicted in the Asian economies—China, India and NICs of Southeast Asia.
7. In the real sector of less-developed economies, the problem of industrialisation remains relevant. As the least-developed economies just embark on this path, the leading developing countries have mostly completed it. The NICs of East and Southeast Asia have achieved the greatest success in industrialisation, as evidenced by a significant share of high-value-added products in their industrial production and exports. At the same time, in other less-developed countries, the contribution of manufacturing to GDP is decreasing. Given that historically the development of industry has been an important factor in labour productivity growth and has absorbed low-skilled labour resources, this trend may slow down the economic growth in some developing countries.
8. In the vast majority of less-developed economies, the financial sector remains underdeveloped, which is reflected by smaller amounts of financial capital. Their monetary systems also remain less efficient. As a result, although the inflation rate is decreasing, it remains noticeably higher than in developed countries. The same can be said about their fiscal systems. Budget revenues are lower there due to the spread of the informal economy and the exemption of vulnerable categories of the population from taxation. Hence, the state budget deficit in the group of less-developed economies is on average higher than in developed economies. This results in increased public debt. The main problem is that it is more difficult for less-developed economies to service public debt due to high borrowing rates and the need to borrow in foreign currency.
9. Less-developed economies export relatively simple goods and services, while complex products are mainly imported. Nevertheless, there is a tendency for sophistication of the commodity structure of their exports, which is especially noticeable in NICs, where engineering and high-tech goods make up 30–40% of exports.

10. Less-developed economies are occupying more prominent positions in global capital flows but in general they have a less favourable investment climate. Despite the potentially higher rate of return, high risks and inefficient institutions repel investors. Consequently, more than 50% of direct investments are their movement between developed economies. At the same time, some leading developing countries have managed to improve the investment climate.
11. The main social problem in less-developed economies is poverty, and the problem of absolute poverty remains relevant. The level of human capital development remains low. Although the gap between developed countries is gradually closing, judging by some development indicators it remains significant, and the gap between the least-developed countries may be even deepening.

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Abstract The chapter presents a retrospective, systematic analysis of China’s place and role in the world and global economy. It analyses the evolution of Chinese economic strategy and development model; dynamics, proportions, and efficiency of economic growth; business structure; the role of human capital in innovative development, as well as the real, financial, foreign economic, and social sectors of the economy and society.

1 Introduction

The People’s Republic of China is the largest country in the world in terms of economy and population and the third in terms of territory. Systemic reforms in China, lasting more than four decades (since 1978), accelerated industrialisation and radically increased the weight and role of the country in the world and global economy. Having become a “global factory”, China faced an increase in a number of both traditional and new problems, such as demographic, raw materials, institutional, and environmental. By overcoming them, the country is now switching to a modern version of its economic model as a strategy of “harmonious”, sustainable development of the market economy. It is focused on refusing to maximise economic growth rates “at any cost”, and is instead turning its priorities to the tasks of social development, the balance of internal and external markets, the formation of a large middle class as a guarantor of socio-political stability, to overcoming the remnants of discrimination of private business and the formation of a modern model of its partnership with the state. As China’s role in the global economy increases, its global economic expansion is also expanding significantly, particularly within the framework of implementing the megaproject “One Belt, One Road”.

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1.1 Chinese Economic Strategy and Modification of the Economic System

From the point of view of socio-economic strategy, the post-war economic and social development of China can be divided into four stages, during which different economic models were used.

The first stage (the end of the 1940s–the first half of the 1950s) covers the formation of the PRC (1949) and the post-war economic recovery based on Mao Zedong’s “New Democracy” model. The principal characteristics of this stage included the orientation of the ruling Communist Party of China (CPC) to a long-term economic union with national business as an important subject and source of financing for industrialisation; the limited admission of its representatives to legislative and executive authorities; and the CPC’s attempt to assume the role of a regulator of relations between labour and capital.

The second stage (the second half of the 1950s–1970s) was focused on the development of the administrative-command economy, using Mao Zedong’s model of “Traditional Socialism”. The defining features of this stage were industrialisation on the model and, with the help of the USSR in the 1950s, the priority development of heavy industry and the military-industrial complex; pumping out financial resources from the agricultural sector due to the price differences between industrial and agricultural products; nationalisation of private entrepreneurship; militarisation of production and life; an attempt to “overtake England and catch up with America” due to the adventure of the “Great Leap Forward” (1958–1960); people’s communes in the countryside with their total socialization of production and life; import substitution under the slogan of “self-reliance”, which intensified after the fatal disengagement from the USSR in the early 1960s. The implementation of this strategy, despite some achievements in the 1950s, eventually provoked an acute socio-economic crisis, especially during the “Cultural Revolution” (1966–1976).

The third stage (the late 1970s–1990s) is characterised by Deng Xiaoping’s model of transition to a market economy. The most distinctive features of this stage were maximising economic growth rates through the active formation of market mechanisms and institutions; the revival and admission of private business into most sectors of the economy; market reform of the public sector (corporatisation of large and privatisation of small and medium-sized enterprises); social differentiation of the population (encouraging “some people and regions to achieve prosperity before others”); the policy of foreign economic openness and export potential of coastal regions. Unlike the previous models, this model contributed to China’s rapid economic growth, although the cost of this growth turned out to be very significant. It made clear the shortage of natural resources, greater environmental pollution, and deepening social and interregional problems.

At the fourth stage (from the beginning of the 2000s to the present), Chinese leadership used the model of a more balanced, harmonious development of the market economy, the so-called model of Hu Jintao and his successor Xi Jinping. The main features of this stage are as follows: an attempt to reduce the gap in the levels of

development between the city and the countryside, developed and less developed regions of the country, the economy and the social sphere, as well as greater attention to the environment, capacity of the domestic market, and technological level of exports. The national task is to build an “average-income” society for the majority of the Chinese population by reducing the gap between China and developed economies in major per capita indicators by the middle of the twenty-first century.

It can be said that the current stage of China’s economic strategy is a natural transformation of its previous stage, dictated by an increase in the maturity of the market economy and the growing opportunities to transition from an extensive, resource-intensive, non-ecofriendly model of economic growth to an intensive, resource-saving one, as well as from the social polarisation of society to the development and predominance of a stable and numerous middle class (as a factor of expanding the capacity of the domestic market and a guarantor of socio-political stability). This stage also marks the gradual end of a long phase of active industrialisation in China and the country’s increasing reliance on the service sector as the main and promising driver of development.

Among the current key problems and contradictions of China’s economic and social development, the following stand out:

- A complex of demographic problems, manifested, on the one hand, in the still-existing opportunities for the flow of labour from the primary to the secondary and tertiary sectors of the economy (estimated at 150–200 million people until 2020–2025). On the other hand, there are the growing consequences of the strict “one family, one child” policy carried out in the 1980s–2000s, such as population ageing (by the early 2010s, the proportion of people over 65 reached 9.0% versus 7.6% world average), gender imbalance (51.5 out of every 100 people in the population are men and only 48.5 are women), and most importantly, the expected serious decrease in the growth rate of labour resources (up to a negative average annual level of -0.3% in 2020–2030).
- The problem of food security, caused primarily by the relatively small and constantly decreasing per capita land fund (the per capita size of arable land decreased in the 1950s–2020s by 4.5–5 times), the ban on the privatisation of land restricting the development of farming, insufficient mechanisation, and, as a consequence, relatively low labour productivity in agriculture (an order of magnitude is lower than in developed countries).
- The raw material problem, expressed in an acute imbalance between rapid economic growth and its limited natural resource base, the growing shortage of energy sources and some other types of mineral raw materials, the corresponding increase in the import dependence of the economy (for example, up to 50–70% and above for oil and gas).
- Territorial unevenness of economic and social development, firstly, between the city and the countryside (the level of consumption in the countryside is 4–5 times lower than urban) and, secondly, between individual regions of the country (the more developed and rich East and South and the still relatively backward, poor West).

- The problem of transferring the economy to an intensive path of development, which is becoming more and more urgent as China moves to the end of the phase of active industrialisation. This can be primarily explained by the fact that extremely high rates of economic growth in the 1980s and early 2010s were achieved on a predominantly extensive basis, due to incomparably high material, capital, and labour intensity of GDP compared to developed economies and, conversely, still low productivity of labour, capital, and technology.
- The problem of the quality of manufactured and, in particular, exported products, not yet fully meeting the highest international standards, limiting the competitiveness of Chinese goods and services on the world market, as well as the underlying problem of increasing the technological level of production, the knowledge intensity of GDP and exported products, confirmed by the still high dependence of the economy on the import of technologies and high-tech equipment, the relative shortage of national technological innovations.
- Institutional problems caused by the incomplete market reform of the banking system and public sector enterprises (their corporatisation and partial privatisation), the unprofitability or low profitability of some state-owned enterprises, and the still insufficient legitimacy of private property in its various forms, including social discrimination of entrepreneurs at the local level on taxation, lending, resource supply and the procedure for registering enterprises.
- The contradiction between economic growth and social development, manifested in the lag of the social sphere due to the relatively low level of government spending on education, health, and social security, and the growing social stratification and polarisation during the years of reforms.
- Environmental problems are caused primarily by the resource-intensive model of economic development and accelerated industrialisation of the rural areas—serious water erosion and soil salinisation, deforestation, desertification, atmospheric pollution, acid rain, and lack of water resources.

1.2 Dynamics, Proportions, and Efficiency of Economic Development

China's economy developed at an extremely slow pace in the first half of the twentieth century (the average annual GDP growth rate was only 0.6%, which was 3.7 times lower than in the world—2.2%). In the 1950s, with the beginning of forced industrialisation in China with the support and on the model of the USSR, the country's GDP growth rate increased (it amounted to 7.8% per year during the first five-year plan of 1953–1957). However, the subsequent political adventures of the “Great Leap Forward”, the people's communes, and the “Cultural Revolution” again significantly slowed down China's economic development: down to 0.6% in the 1960s and 3.1% on average in the 1970s (the global rates were 4.6 and 3.5%, respectively).

In the late 1970s, China began a period of rapid economic growth (see Table 1).

Table 1 China: average annual GDP growth rate per capita and the country's share of world GDP based on PPP, %

	Indicator					
	1500–1820	1820–1950	1950–2001	2000–2010	2010–2020	2020–2030 ^a
China's average annual GDP growth rate	0.00	–0.26	4.09	10.2	6.5	5.5
Average annual growth rates of world GDP	0.05	0.91	2.17	1.6	1.5	1.4
China's share of global GDP	32.9	4.5	12.3	15.8	18.6	26.1

Sources World Bank. (2012). *China 2030. Building a Modern, Harmonious, and Creative High Income Society*. Wash., D.C.; Maddison, A. (2007). *Contours of the World Economy, 1–2030 AD*. Oxford: Oxford University Press; World Bank Open Data

^aForecast

As a result, China's GDP has grown more than 15 times over the first 30 years of market reforms, and the average per capita income of the population has increased 8 times. Such high and prolonged growth rates were large due to the alignment of the phase of active industrialisation in the PRC with the country's evolutionary transition to market economy, which made it possible to fully identify and successfully implement national competitive advantages in the context of globalisation.

These advantages include, firstly, the world's largest workforce, which has more than doubled over the years of reforms and exceeded 800 million people, or a quarter of the global level. The second advantage is the highest investment rate in the world (more than 45% of GDP on average in the 2010s). One of its sources is the growth of the gross savings rate (more than 50–70%), the other is the specifics of the state's financial policy associated with the so-called emission pumping of banks (see Sect. 1.6). Another growing advantage is the gradual increase in the technological level of production, both due to the import of modern equipment and technologies, and—especially in the last 20 years—due to increasing expenditures on technological innovations (Sect. 1.4). Important sources and stimulators of China's rapid economic growth can also include the effective national idea of “reviving the former greatness of China”, the strong economic role of the state, the systemic institutional effect of market transformations, increasing investment in human capital over the past two decades, and the prioritisation of the export potential of the real sector, especially in the 1990s–2000s (see Sects. 1.4 and 1.7).

The global economic crises have accelerated China's transition to a new economic model, which assumes, among other things, an increasing expansion of the domestic market, more sustainable economic growth, but at a slower pace than before and marks, in fact, the beginning of the gradual completion of active industrialisation and the country's transition to innovative development with a predominant reliance

on the service sector. According to leading Chinese economists, the 2010s–2020s are becoming a period of new normality in the development of the national economy, the most important period of its structural transformations in more than 40 years since the beginning of the “reform and openness” policy in China.

The Chinese economy is now facing at least three serious internal and external challenges: firstly, with a gradual increase in the cost of production due to the constant increase in the cost of labour (by the beginning of the 2010s, the growth rate of net income of the population came close to the growth rate of GDP; according to Chinese data, the average salary in the country in 2000–2020 increased almost 10 times). Secondly, with an increase in environmental costs, as well as the growth of China’s costs for imported natural raw materials and foreign technologies. Thirdly, with inflation pressure on the economy is caused by both internal (money supply growth) and external factors, including the US sanctions policy. As a result, China is experiencing and will continue to experience a gradual decline in economic growth, a “long period of average development speed” is coming, which may amount to 5.5–6.5% of GDP growth per year (see Table 1).

For the Chinese economy in transition, the dynamics of such important proportions of economic development as the proportions between accumulation and consumption, as well as between the primary, secondary, and tertiary sectors of the economy are of great importance.

Having brought the rate of gross capital accumulation from 30–40% in the 1980s and 1990s to 48% in 2009, China exceeded its global average by more than 2.5 times and reached the absolute historical maximum of this indicator. In the 2010s, this rate began to decrease—to 42% in 2015 and 38% in 2020. According to the joint forecast of the World Bank and the State Council of the People’s Republic of China “China in 2030” (see sources in Table 1), this trend should continue to fall to 36% in 2025 and 34% in 2030. The consumption rate, on the contrary, is increasing and will continue to increase—from 49% in 2010 to 56% in 2015, 60% in 2020, 63% in 2025, and 66% in 2030. Such a changing proportion between accumulation and consumption is quite natural from the point of view of the prospects of the PRC entering a new, post-industrial stage of its economic development and means shifting the priorities of the country’s economic policy from physical to human capital (see Sect. 1.4).

Active industrialisation in China, as well as the country’s transition to post-industrial development, have radically changed the balance between the sectors of the Chinese economy. The share of the primary sector in GDP dropped in 1986–2010 from 30 to 10%—and decreased to 7% by 2020 and 4% by 2030. The share of the secondary sector, having reached a historical maximum of 53% in 2002, decreased to 47% in 2010, to 41% in 2020, and may decrease to 35% in 2030. The share of the service sector in 1980–2010 has more than doubled—from 21 to 43%—and continues to increase to 52% in 2020 and 61% in 2030. As noted at a plenum of the CPC Central Committee, China is making a “transition from a model of priority development of the industry to economic growth through strengthening the service sector” in the 2010–2020s.

As a result of China’s transition to a higher stage of economic development, the issues of the efficient use of economic resources are of high importance and, in

particular, the problem of the changing the proportions between the contribution of extensive and intensive factors to the economic growth (i.e., labour, capital, and technology, on the one hand, and their individual and total factor productivity—TFP, on the other).

During the period of the administrative-command economy in China, the total factor productivity (TFP) as a whole was low, providing only 2–3% of the total GDP growth of the country in 1952–1978, which indicated extensive economic growth. With the transition of the PRC to a market economy, it increased significantly—up to 33% on average in 1979–1995 (according to Chinese calculations). However, later, when the capital intensity of the economy grew, the growth of TFP slowed down significantly despite the increase in labour productivity, encountering a very typical problem for active industrialisation: reducing capital-output ratio. Indeed, while the growth of investment in 1978–2015 was 2–3 times higher than the GDP growth rate, the efficiency of these investments (capital-output ratio) decreased (in 2006–2011, for example, by 1.3 times). As a result, the main source of GDP growth in the 2000s—the first half of the 2010s remained the extensive factor of massive capital investment growth, while the TFP share in GDP growth was still low—25–30% (for comparison: it was 43–44% in Taiwan, 45–46% in Thailand, 47–48% in South Korea).

At the same time, it should be noted that the average annual growth rate of TFP in China in the 2000s early 2020s, despite its decline during the global crises, as a rule, exceeded the corresponding rates in developed economies. This means that, as the phase of active industrialisation and the transition from predominantly capital-intensive to predominantly knowledge-intensive development comes to an end, China's TFP should be gradually increasing, reducing the still significant gap with the more developed economies of the world.

1.3 Business Structure

Having undergone nationalisation in the mid-1950s, in the subsequent period of the administrative-command economy until the end of the 1970s, private business in China was outlawed, existing only within the narrow limits of the shadow economy (“we are engaged in socialism by day, in capitalism by night”). In the next decades, the Chinese government under the influence of both internal and external factors, and in the framework of the general course of market reforms gradually moved from a policy of forced prohibition of private entrepreneurship and its social discrimination to a strategy of balanced promotion and support.

In particular, the general political and legal status of entrepreneurship has radically changed. If in 1982, only small private business was legalised in the Constitution of the PRC, in 1988 it was already medium and large business (but only as an “addition to the socialist public economy”), then in 1999 the private sector received a significant new rank of “the important component of the socialist market economy”, and in

2004, as one of the consequences of China's accession to the WTO, a fundamental amendment on the "inviolability of legitimate private property of citizens" was made to the country's constitution.

In accordance with this, the entire system of political attitudes, legislation, and regulation of entrepreneurial activity was gradually changed and reformed, and focused on the inherent equality of the rights of enterprises of all forms of ownership in the market economy. In 2005, China adopted provisions that significantly expanded the scope of private business access to sectors of the economy previously monopolised by the public sector. In 2007 it was the law on property rights, which for the first time in the history of the PRC guaranteed equality of rights for state and private property enterprises. In 2010, they adopted a new set of rules aimed at encouraging the non-state sector and designed to stimulate private investment in infrastructure, housing construction, utilities, finance, and even some branches of the military-industrial complex.

One of the consequences of the positive changes in China's state policy concerning private business has been its rapid development. During the 12th five-year plan (2011–2015), the value added of private industrial enterprises in China increased at an average annual rate of 17–19%, which was 1.8–2.2 times higher than the corresponding indicators of both enterprises with foreign capital and state and collective enterprises. As a result, the share of the public sector in the country's GDP had already decreased to less than 30% by 2005, and about 25% by 2010. The private sector gradually began to play a major role in many branches of the national economy, including foreign trade. The total export volume of all non-state enterprises exceeded the corresponding indicator of the public sector by more than two times already in 2010. In 2020–2025, the real contribution of private and mixed forms of entrepreneurship to the country's GDP is supposed to reach 80–85%.

At the same time, it is important to emphasise that although the reforms in China are aimed at increasing institutionalisation and legitimisation of private property, this process is not equivalent only to the privatisation of the national economy. China officially continues the "construction of socialism with Chinese specifics": the public sector is being radically reformed and commercialised, while the number of enterprises and their share in the economy are reduced, but it still remains one of the most important elements of the national economy. "We encourage enterprises of different forms of ownership to compete with each other to ensure common development"—this is how the current Chinese leaders characterise the state policy on the mixed economy. The partnership between the Chinese state and private business continues to be maintained and at the same time improved with the increasing weight of the latter.

1.4 Human Capital and Innovative Development

In modern China, there is a growing understanding that in the process of globalisation and the growing level of economic development, it is not enough for China to just play

the role of a “world factory” for assembling products based on borrowed technologies. Instead, it is necessary to move to more active, innovative development to become “a model of a creative, innovative economy and a new entrepreneurial culture” in the foreseeable future (by 2025–2030). That is why the two-tier ideology “reform and openness”, which has become traditional for reform in China in the twenty-first century, is being transformed into its expanded, three-tier version—“reform, openness and own innovations”. There is also an increasing awareness of the fact that the transition to innovative development is impossible without a significant increase in investment in human capital.

The PRC is developing and gradually implementing a “strategy for building China as an innovative country” (or “innovative development strategy”), also defined as “a strategy for raising the country through modernising education, developing science and technology, using the advantages and potential of Chinese scientific and technological developments by stimulating their commercialisation, the production of knowledge-intensive goods and the globalisation of knowledge-intensive industry under market requirements”. Within the framework of this strategy, in particular, the State Plan of Scientific and Technological Development of the People’s Republic of China for 2006–2020 was adopted and implemented. Its main goals were to transform the country into a modern information society by 2020, reduce dependence on imported technologies to less than 30%, increase the contribution of national science and innovation to the economic growth to at least 60%, as well as to lay the foundations for China as a world leader in R&D by 2050.

Among the main directions and forms of implementing this strategy are radical reforms of the education system and the Academy of Sciences of the PRC, special state programmes aimed at creating elements of innovation infrastructure, in particular, the scientific and technological market, university research and production centres, various zones where new and advanced technologies can be introduced, as well as developing the national high-tech industry by stimulating the innovative motivation of national corporate, small and medium-sized businesses, including various public–private partnership projects.

In accordance with this, investments in healthcare, social security (see Sect. 1.8), ICT services for the population, science, and especially in education, are increasing gradually but significantly. The share of government spending on education increased from 2.8% of GDP in 2005 to almost 4% in 2012 and approached the global average (4.5%) in 2017–2020. The literacy rate of the adult population (15+) increased from 69% in 1988 to 93–94% in the 2010s. In 2011, universal nine-year secondary education was officially introduced in China.

By 2003, the PRC took the first place in the world in terms of the total number of students in universities and colleges, becoming, in 2008, the world leader in the number of bachelor’s degree graduates of scientific and technical universities, and the leader in the number of graduates of master’s and doctoral studies in 2010–2015. The total number of universities in China increased 4.5 times in 1978–2013, while the international rankings of the country’s top universities have significantly increased. In 2010, 22 Chinese universities were included in the top 500 universities in the world, allowing China to take sixth place in the corresponding ranking after

the United States, Germany, Great Britain, Japan, and Canada. The mass education of Chinese students in the most prestigious foreign universities has also become a noticeable phenomenon. The average annual number of students travelling abroad in 2011–2015 was 300,000–500,000, the number of graduates returning to the country was 180,000–250,000. In the 2020s, China plans to complete the modernisation of the education system, creating an “educated society” in which higher education is perceived as “fundamental”.

An essential means of improving the quality of human potential in China is its rapidly developing information resources. In the first half of the 2000s, China became a world leader in the production of telecommunications equipment. The country ranks first in the world in terms of the number of Internet and mobile phone users.

Since the mid-1980s–early 1990s, measures have been taken in China to increase R&D spending. It increased from 0.7% of the GDP level in 1990 to 0.9% in 2000, 1.35% in 2004, 1.7% in 2009, and 2.2% in 2015, approaching 2.5% of GDP by the early 2020s, which matches the average level of developed countries.

Over the past two decades, the Intellectual Renewal Programme, launched as part of the radical reform of the Chinese Academy of Sciences, has also been gradually implemented. In the 2010s, more than 30 out of 100 state research institutes of the Academy of Sciences of the People’s Republic of China were recognised as “world-famous” research institutions, and five to seven of them (according to various criteria and estimates) reached a “first-class” international level. It is to the Chinese Academy of Sciences that the role of scientific coordinator and driver of the country’s achievement of one of its long-term strategic goals is assigned—it should “ensure a leap acceleration in the next ten years and the sustainable development of innovative processes in the next foreseeable period”. The task is also set to gradually turn the Academy of Sciences of PRC into a “comprehensive state academy of world level”, one of the “symbols of the modernisation of science and technology in the country”.

The basis of the innovation infrastructure was the scientific and technical (technological) market, which for the first time received the official right to exist in the PRC in 1985. Over more than a 30-year period, the total volume of technology trade has increased a thousandfold, reaching the average annual level of 15–20 billion yuan in the 2010s. The structure of this market, which includes about 2000 organisations, has also been constantly improved. It includes the incubators of scientific and technical enterprises and university technoparks, high-tech zones, enterprises based on state technology development programmes, centres for increasing the productivity of medium and small enterprises (“productivity centres”), as well as a special innovation fund for small and medium-size scientific enterprises, Chinese foreign technoparks and high-tech enterprises of various forms of ownership.

The aforementioned high-tech zones are a very substantial segment of the innovation infrastructure (technology market). They employ 1.2 million researchers and 6.5 million staff. The zones include 45 “pilot cities of innovative type”, in which there are 54 special zones with special preferential tax and credit treatment for investors and their foreign trade activity. Among these zones, three zones stood out in terms of scale and innovative level—Zhongguancun in Beijing, Zhangjiang in Shanghai, and the zone in Shenzhen.

A prominent place in China's innovation infrastructure is given to special state programmes for the development of high technologies (such as the Torch Programme), operating since the 1980s. Their main tasks include, besides creating innovations, forming a culture for their implementation and improving the environment for them (institutional, administrative, legal, and other conditions for introducing new technologies), supporting innovative activities of enterprises with an emphasis on the development of small and medium-size scientific and technical firms, stimulating the creation and development of innovative groups of enterprises competitive on the world market. These state programmes are varieties and forms of the Chinese model of public-private partnership in the field of innovation, and as such play one of the key roles in the formation of a competitive business sector as the main generator of innovations focused on maximising entrepreneurial income. In particular, since 1988, more than 1000 innovation and investment projects have been implemented annually within the framework of the Torch Programme, most of them with extra-budgetary funds that are own funds or bank loans of enterprises.

Hence, in recent decades, China has managed to improve significantly the quality of its human capital and start the transition to active innovative development. The most important achievements of the PRC in this area are:

- The formation of a competitive business sector, which is the main generator of innovations.
- The creation of effective forms of public-private partnership in innovation activities.
- The creation of favourable institutional conditions for innovative growth.
- The integration of the country into the global innovation sphere which is the most important condition for the development of national high-tech industries.

1.5 Real Sector

Active industrialisation in China made the country the largest industrial producer in the world by 2010, bringing its share of production of manufactured goods to almost 1/3 of the global volume by the early 2020s.

The largest contribution to the high growth rates of Chinese industry and the national economy as a whole is made by manufacturing industries focused on both export (90–95% of Chinese exports) and domestic consumption.

The most dynamic of these industries is mechanical engineering (15–25% of total industrial production), the annual growth rate of which in the 2000s, as a rule, exceeded 20%, slowing down somewhat only in the last decade. The fastest-growing sub-sectors of mechanical engineering are the production of electronics, office and telecommunications equipment (more than 90% of the world's output of personal computers; 228 of the top 500 supercomputers in the world are produced in China), automotive, power equipment manufacturing, shipbuilding, and robotics. In particular, China has been the world's largest carmaker since the early 2010s, bringing the production of cars to 25–30 million per year (more than 1/3 of the global output)

and demonstrating record annual growth rates of more than 15–20%. The country is also a world leader in the production of sea vessels (more than 50% of world output) including high-tech LNG supertankers, air conditioners (more than 80%), household electrical appliances (refrigerators, washing and sewing machines, etc.), watches, radios, televisions, mobile phones (more than 70%), a variety of audio and video equipment. The aerospace industry and the defence industry are also developing rapidly.

The chemical industry is growing rapidly, including both basic and organic chemistry. China firmly ranks first in the world in the production of mineral fertilisers. The pharmaceutical industry has achieved significant success.

China's fuel and energy complex is one of the largest in the world. Moreover, the share of coal in the country's energy balance is still very high, although it is gradually decreasing for environmental reasons (from three-quarters to one-half in 1990–2020s). China consistently ranks first in the world in coal production (3.5–4.0 billion tons, or 45–48% of world production in the 2010s). Coal accounted for 55.5% of electricity production in 2020, crude oil—19.4%, natural gas—8.6%, hydro, solar and wind energy, nuclear energy, and other sources—16.5% in total.

In terms of electricity production, China ranks first in the world (more than 8.5 trillion kWh). Despite this, the high energy intensity of economic growth in China (almost 24% of global energy consumption versus 16% in the United States in 2020) still causes a noticeable lag in the electricity production and consumption. In the 2010s and 2020s, China began to solve this problem by accelerating the construction of nuclear and hydroelectric power plants, using alternative energy sources, boosting shale gas production, modernising coal mining, as well as by increasing energy imports. In the 2010s, China took a leading position in the world in the production of solar energy and the total capacity of wind power plants. At the same time, it has also become the largest importer of crude oil. In particular, in 2005–2020, its imports have increased by more than six times, and the Chinese dependence on them has exceeded 70–75%. In the 2010s, China also became one of the world's largest importers of coal and liquefied natural gas.

Ferrous metallurgy is one of the traditionally developed industries in China. China firmly holds the position of world leader in the production of cast iron, steel, and steel pipes, significantly ahead of its closest competitor—Japan. However, China has had to import iron ore on a large scale since the beginning of the 2000s. In the 2000s, China came out on top in the world in terms of production in non-ferrous metallurgy. This industry is supplied with large domestic reserves of non-ferrous metals such as antimony, tungsten, zinc, lead, tin (the largest in the world), copper, manganese, deposits of rare metals of world importance, as well as increasing import supplies of relevant minerals.

The building material industry is significantly developed, which provides China the first place in the world in cement production (more than 60% of world production).

The light industry is represented primarily by the production of textiles (including clothing production). The textile industry of China is the largest in the world, and includes the production of cotton and silk fabrics. The shoe industry (about 65% of world production), the leather and food industries, the production of toys (more

than 70% of the world), as well as porcelain and ceramics, all of which are largely export-oriented, are also developed.

Agriculture mainly meets the country's food needs. At the same time, the agrarian economy remains the main source of the outflow of labour into the industrial and the service sector (the share of those employed in the primary sector of the economy decreased from 70% to less than 25% in the late 1970s–early 2020s). Chinese agriculture is characterised by small-scale farms and public ownership of land. The ban on land privatisation restricts the development of farming.

At the same time, with the sufficient investment into agriculture (in 1991–2020, the average annual growth rate of investments in agriculture was 8.0–8.5%) and government support (up to 8–9% of all budget expenditures) the structure of agriculture is being modernised, and the share of livestock in it is increasing (from 15% in the late 1970s to more than 30–40% in the 2000–2020s). In terms of grain production, China continues to be the world leader (570–650 million tons), partially with the budget subsidies to grain farmers (subsidies to them in the second half of the 2010s amounted to 120–140 billion yuan annually). China is also the world leader in the production of potatoes, apples, vegetables, cotton, and tobacco, as well as in fishing catch and meat production.

Transport has been developing particularly rapidly in the last two decades. The country is also a world leader in terms of the total passenger and cargo turnover of railway transport. China is constructing the world's largest network of high-speed railways (with a train speed of 350–380 km/h), the length of which already exceeded 30% of the world share in the early 2010s and should increase in 2011–2025 from 8.5 to 38,000 km, connecting 340 cities and towns across the country. By 2015, China came out on top in the world in terms of the length of high-speed roads, which exceeded 100,000 km. However, China has the world's highest congestion of rail transport (10% of the Chinese section of the global road network accounts for more than a quarter of global freight traffic) and this is still a serious problem.

In terms of cargo transportation, China's maritime transport also occupies a leading position in the world (35–45% of the world volume in 2010–2020). Since 2015, seven Chinese ports, including Ningbo, Shanghai, Tianjin, Guangzhou, Qingdao, and Dalian, have already taken the first positions in the top ten world ports (in terms of cargo handling and passenger turnover). The country's inland waterway network remains the largest in the world, although river transport is developing more slowly than other types of transport and requires serious modernisation in general.

Air transport demonstrates the highest growth rate in the transport services market of China, as a result of which PRC has become the second largest air carrier in the world after the United States. In the 2010s, three Chinese companies entered the top ten of the world's largest airlines, and the two largest airports—Beijing and Shanghai—ranked second and third, respectively, in the world in terms of cargo transported.

The pipeline transport is a relatively lesser developed type of transport in China. In the 2010s, only 10–25% of petroleum products were supplied to consumers via pipelines (in developed countries, this rate is up to 80%). In the 2020s, China continues to create a unified network of trunk pipelines, providing the transfer of

natural gas from the west to the east of the country (using both internal and external sources of gas). In 2007–2009, China built and commissioned the world’s longest main gas pipeline from Turkmenistan with a length of 6811 km, which provided more than 90% of all main gas supplies to China in the 2010s. In the 2020s, gas supplies to China from Russia have been gradually increasing.

Mobile communications are developing at the fastest pace in the service sector. The telecommunications system, which includes, among other things, a network of fibre-optic lines and satellite stations, provides stable telephone communication within the country and with subscribers abroad. The Chinese global satellite navigation system BeiDou using the 5G communication format, deserves special mention. This system competes successfully with the corresponding American and Russian GPS and GLONASS systems in terms of price parameters and communication quality. The number of Internet users in China in the early 2020s approached 700 million people (the largest in the world).

1.6 Financial Sector

This sector is becoming more and more significant in the Chinese economy, having both great achievements and certain problems.

1.6.1 Monetary System

It is characterised not only by the fact that China is a developing economy but also by the fact that elements of national specificity are strong in it. In particular, the commercialisation of banks (which are mainly in the hands of the state) is still constrained by a significant amount of “bad” loans since these state-owned banks have to lend to unprofitable or low-profit enterprises of the public sector. In addition, unlike most national central banks, the People’s Bank of China (PBC) is not independent of the government, retaining the status of direct administrative subordination to the State Council of the People’s Republic of China (according to the law of 1995), although the county and provincial branches of this bank have been gradually freed from the influence of local authorities in their decision-making.

The structure of China’s banking system is as follows. PBC is at the top of the pyramid, then come the five largest state-owned specialised banks (Bank of China, Industrial and Commercial Bank, People’s Construction Bank, Agricultural Banks of China, and Bank of Communications of China). The following level includes 12 large joint public–private banks (with assets of more than 1 trillion yuan each), then the next level is urban banks (more than 100) and, finally, the lowest level is urban and rural credit cooperatives (respectively, about 5 and 40,000 units in the 2010s).

The Big Five banks are diversified commercial structures operating in various fields. The total value of their assets in the 2010s exceeded \$4 trillion, and they had more than 200,000 branches and about 1.5 million employees. In recent years,

the number of city banks has been increasing, and credit cooperatives have been declining.

The active financial policy of the state is of the neo-Keynesian type, applied in China to stimulate economic growth, especially under conditions of still insufficiently solvent domestic demand, and deserves special attention. Its instruments are based on, firstly, a deliberately planned insignificant deficit of the state budget, secondly, the rapid growth of the money supply (M2), and thirdly, the issue of state loan bonds for investment purposes (so-called construction loans). In the 2000s and 2010s, these measures together provided an average of 1.5–2 percentage points of annual GDP growth. In general, in the 2010s and early 2020s, this deficit, as a rule, varied at the levels of 1.3–1.5% of GDP.

It should be emphasised that this form of monetary expansion of the state, despite a significant increase in the level of monetisation of the economy (up to 180–200%), does not provoke serious inflation, as it serves the fast-growing real sector of the economy. At the same time, this policy was, in fact, a compromise form of keeping afloat a relatively small part of low-profit enterprises in the public sector, delaying the final solution to the problem of “bad” loans from state banks.

Following its obligations to the WTO, China significantly liberalised its banking system in 2002–2020. The involvement of foreign investors provoked the partial privatisation of Bank of China and People’s Construction Bank (8% of their shares were sold in 2006), the problem of repurchasing debts on “bad” loans from banks began to be solved, and the system of state management of banks is gradually being reformed in the general direction of limiting subjective decisions of government officials on granting loans. Nevertheless, the share of one foreign strategic investor in a Chinese bank cannot exceed 20%, and the maximum share of foreign investors in the entire banking system of the country—25%. The inviolability of the principle of state control over the banking sector in China is still preserved, and it is increased under the conditions of global economic crises.

1.6.2 Fiscal System

Every year, the consolidated budget (state budget) is legislatively adopted in the PRC as a set of central and local budgets (at provincial and district levels). The central and local budgets are relatively autonomous, but they are interconnected by a system of targeted transfers from the central to local budgets and local budget allocations to the central. The share of local budgets in consolidated budget revenues is growing, as well in expenditures (in 2002–2019 from 45.0 to 53.1% and from 69.3 to 85.3%, respectively), which means shifting the “centre of gravity” of financing economic development from the central to the local level.

In China, the state budget expenditure, as a rule, exceeds revenues by 0.5–1.5 percentage points, e.g., the state budget in China constantly has a small deficit. This is due to the above-mentioned policy of emission-credit stimulation of the economy. One of the sources of such stimulation is a manageable, relatively small state budget deficit generated by the budget deficit of the central government and

covered by government loans and a surplus of local budgets. In the 2000s and 2010s, the central budget deficit, as a rule, did not exceed 1.0–1.5%, while local budgets had a surplus (largely due to such a national phenomenon of public–private partnership in infrastructure development as central government loans to local governments for subsequent transfer to subcontractors).

As part of the transition to a new economic strategy, the PRC plans to keep the state budget deficit and state loans in reasonable amounts, without provoking inflation by excessive yuan emission and gradually reducing this deficit primarily by limiting lending to enterprises with high energy costs, pollution, and excess production capacity.

The dynamics of priority expenditure items largely reflect the development of the trend towards the social orientation of the state budget (see Table 2).

The main taxes in the PRC include value-added tax, customs duties, corporate income tax, personal income tax, and business activity tax. China's tax system is under reform. It is being reformed in two main directions: easing the financial burden due to a general reduction in the number of taxes and attempts to unify taxation of enterprises of different forms of ownership.

For example, in 2006 the agricultural tax that had existed for more than 2600 years was abolished, as well as other local fees in the villages. This increased the competitiveness of the agricultural sector and contributed to the preservation of socio-political stability. In 2008–2010, income tax rates for enterprises of national and foreign capital, as well as income tax in the special economic zones and the rest of China

Table 2 The structure of expenditures of the consolidated budget of the People's Republic of China in 2008–2019, %

	2008	2014	2019
Education	14.4	15.2	14.6
Science and technology	4.2	3.5	4.0
Culture, sports, media	1.8	1.8	1.6 ^a
Medicine and healthcare	4.4	6.7	7.0
Social security	12.2	10.5	12.4
National defence	6.7	5.5	5.1
Agriculture, forestry, and water management	7.3	9.3	9.4
Environmental protection	2.3	2.5	3.1
Transport	3.8	6.9	4.5
Public safety	6.5	5.5	6.2 ^a
Public services	15.7	8.7	8.7
Public utilities	6.7	8.5	10.8
Other expenses	14.0	15.4	12.6

Source State Statistical Office (GSO). People's Republic of China (China). <https://data.stats.gov.cn/easyquery.htm?cn=C01>

^a2018

were lowered and de facto unified (at the level of 25%), largely under the pressure of national business. Taxes on property, donation, inheritance, resources, use of arable land, etc., are subject to further reform.

1.7 External Sector

This sector has become one of the drivers of China's rapid economic development.

1.7.1 China's Foreign Economic Strategy

The openness of the economy is the strategic course of Chinese reformers in the field of international business. Its main components are as follows:

1. The faster growth of international business in comparison with GDP growth. In 1978–2019, China's foreign trade increased more than 120 times, significantly exceeding the corresponding—in themselves record-high—GDP growth rates. By 2010, China became the largest trade power in the world.
2. Regulated diversification and improvement of merchandise trade structure. At the same time, China proceeded from such basic premises as the relative fall in world prices for low-value-added goods and the need to strengthen China's activity as a recipient of advanced technologies. Therefore, the main efforts in the export policy were focused on ensuring a faster growth in the export of finished industrial products (in the 1980s and 2010s, their share in commodity exports doubled—from 47 to 93–95%). In the 2000s and 2010s, the emphasis was on improving the structure of exports of these products, reducing the share of labour-intensive goods and a corresponding increase in the share of capital- and knowledge-intensive goods (for example, the share of high-tech products in the structure of industrial exports in the 2000–2010s increased from 27 to 31–33%). The import policy encourages preferential imports of high-tech equipment, machinery, know-how, and components for export-oriented industries. Due to the cumulative effect of the purchase of these goods during the reform years, according to Chinese estimates, more than 2/3 of the increase in industrial production was provided in such priority sectors as radio electronics, energy, metallurgy, chemistry, and transport.
3. Gradual systemic restructuring of the mechanism of managing and regulating international business. Its most important directions are consistent demonopolisation and decentralisation, the gradual transition of the government from direct administrative and directive management to primarily economic control of external economic relations. The right of independent entry into the foreign market is granted to associations of enterprises and individual enterprises, subject to their profitability and competitiveness, and—especially in the 2000s and 2010s—regardless of the form of their ownership. After joining the WTO (2001),

China has taken a number of radical measures to liberalise foreign trade, such as an attempt to partially or completely abandon government subsidies for exports and reduce import customs duties.

4. Introduction of a preferential system for the development of export-oriented industries. At the initial stage of the reform in China, the course was practically taken for state-administrative protection of the entire chain of export production—from the planning to the marketing of products. In particular, a system of economic preferences for producers of export goods was put into effect, which included a preferential regime for their taxation, lending, distribution of foreign exchange profits, and repeated devaluations of yuan. As a result of these and other measures, the export reorientation of the most profitable state-owned and municipal enterprises, the inflow of private national and foreign capital into the sphere of export production, and in the last 20 years, the record growth of official reserve assets were ensured.
5. Attracting foreign capital, primarily in the form of FDI. The successes achieved here by the PRC are largely due to the creation of a favourable investment climate in a significant part of the country's territory, primarily covered by free (special) economic zones. The main components of this climate are the relatively low cost of labour, the cheapness of land use rights, a fairly acceptable level of infrastructure development in the areas of preferential investment (achieved through massive public investments), a system of preferential taxation, preferential migration, and customs regime, sufficiently developed foreign investment, customs, currency, etc., and legislation. As one of the combined effects of these factors, China has managed to firmly establish itself among the world's leading powers in attracting FDI in the 1990–2020s (see Sect. 1.7.4).
6. Gradual formation of a multi-level territorial structure of an open economy. The economic space of the country is conditionally, and in a gradually changing proportion, divided into two sectors—the economy of internal and external orientation. The latter gradually expanded during the reforms, turning in the 1990–2020s from a small enclave consisting of four free economic zones into the so-called eastern and northern “belts of openness”, covering more than a third of the population and about a quarter of the country's territory. Free economic zones were formed in these “belts” and their investors, subject to a 100% export orientation, were completely exempt from export–import duties and some taxes.
7. The intensification of China's economic presence abroad in the form of exports from China of economic factors such as capital (mainly in the form of foreign direct investment), labour, and knowledge. Since the 2000s, China has been implementing a long-term plan for “moving domestic enterprises abroad”, according to which the share of China in the global export of capital is constantly increasing (see Sect. 1.7.4). In addition, the number of projects where the Chinese side provides technological cooperation is increasing every year, while supplying both technology and labour (for example, from 2000 to 2010, the number of Chinese working abroad only under official contracts increased from 475,000 to more than one million people). The share and role of Chinese companies in the global economy are growing rapidly. According to Fortune Global 500 rating,

China outperformed the United States as the world leader in terms of the number of its MNEs among the 500 largest companies in the world.

8. The global initiative “One Belt, One Road” (also known as the “Silk Road Economic Belt”) put forward by China in 2013, which is intended in the future, according to the PRC, to “stimulate the free but orderly movement of factors of production, highly efficient resource allocation and deep merging of markets” of Europe, Asia, and Africa. This initiative and concrete measures for its implementation can be considered, on the one hand, as a logical development of China’s foreign openness policy, on the other—as a new stage of globalisation of its economy.

Giving a brief retrospective assessment of the main trends in the development of China’s foreign economic strategy, it is necessary to focus on the following; according to the so-called “grand strategy of China”, the country should turn from a “regional power with global influence” into a “global power” by 2020–2025. In this regard, in the twenty-first century, the tendency to consolidate the PRC’s rank as the main buyer in the world raw materials markets has been further developing, the disproportion between the country’s first position in world trade and its smaller role in international capital movement and knowledge exchange is gradually being overcome. Following the Belt and Road initiative, China is taking a more active part in the construction of transport and logistics corridors, the formation and expansion of “zones of openness”, special economic zones, etc., in both the neighbouring and more distant countries and regions of the world. Global economic expansion, referred to as the “peaceful economic offensive of China”, is thus significantly diversified and continues.

1.7.2 The Currency System

This system has gone through several stages of reform. At the first of them (1981–1993), several devaluations of the yuan took place and China used a double exchange rate system (the so-called two-track system). In 1994–2005, China pursued a policy of actually pegging the yuan to the US dollar based on the official exchange rate of 8.28 yuan per dollar, which was very favourable for Chinese exporters. In 2005, in response to the drop of the dollar against the euro, as well as due to the desire to reduce the overall dependence of the Chinese economy on the US emission policy, the PRC abandoned this peg and began to determine the yuan exchange rate against a basket of currencies (the euro, dollar, yen, etc.). As a result of these measures, a gradual, strictly controlled revaluation of the yuan against the dollar began, during which the yuan exchange rate rose to 6.2–6.3 yuan per dollar by 2013. In 2013–2019, however, in response to the increase in US customs duties on Chinese goods, the PRC began to resort to limited devaluation and subsequent stabilisation of its currency, and as a result of this, by July 2022, its exchange rate was 6.7 yuan per dollar.

The success of China’s monetary policy is manifested, in particular, in the constant surplus of its foreign trade balance, which is an important source of replenishment

Table 3 Official reserve assets of China and their ratio to GDP in 1994–2019

Year	Indicator			
	The volume of reserves, \$ billion	Growth Index, %	The volume of GDP, \$ billion	The ratio of reserves to GDP, %
1994	52	100	1300	7.1
2007	1547	2312	3571	43.3
2008	1966	3781	4604	42.7
2011	3256	6262	7522	43.3
2013	3880	7462	9635	40.3
2015	3406	6550	11,226	30.3
2017	3236	6223	12,062	26.8
2019	3223	6198	14,217	22.7

Source Data and calculation according to the Chinese National Bureau of Statistics

of the country's official reserve assets. While China's external debt in 2000–2010 decreased more than three times in relation to GDP and does not exceed 9–10% of GDP, the volume of its reserve assets in 1994–2013 increased from \$52 billion to \$3.88 trillion, or almost 75 times, and amounted to more than 40% in relation to GDP. In the second half of the 2010s, the growth rate of reserves slowed down, part of it was spent on the need of structural adjustment of the economy and maintaining the yuan exchange rate at the target level, and China switched to the tactics of relative stabilisation of its reserve assets at the level of \$3.2–3.3 trillion (see Table 3). Nevertheless, in terms of the absolute volume of this indicator, China has been firmly ranked first in the world since 2006, many times ahead of other countries.

In the 2010s, the PRC actively pursued a policy of internationalisation of the yuan, as a result of which, in particular, starting in 2016, the IMF recognised the yuan as one of the world's reserve currencies. By 2020, settlements in yuan already accounted for a significant part of world trade, but the yuan's share in the foreign exchange reserves of the world's countries so far was only 1.95% (against 61.8% for the US dollar, 20.2% for the euro, 5.25% for the yen, and 4.5% for the pound sterling).

1.7.3 Foreign Trade

By 2030, China may increase its share in world merchandise exports to 25% by strengthening the position as the first foreign trade power (see Table 4).

Trading partners of China in 2019 were the United States (they accounted for 16.8% of Chinese exports), Hong Kong (11.2%), Japan (5.7%), South Korea (4.4%), Vietnam (3.9%), Germany (3.2%), and Russia (2%). China has a very tangible trade surplus with most partner countries, for example, \$295 billion with the United States in 2019, \$270 billion with Hong Kong.

Table 4 Dynamics of China's share in world merchandise exports in 1985–2030, %

	1985	1990	2013	2014	2015	2020 ^a	2030 ^a
China's share	1.7	2.0	10.5	12.3	13.8	17.6	25.0
Growth index	100.0	117.7	617.7	723.5	811.8	1035.3	1470.6

Source World Bank Open Data

^aExtrapolation of the growth rates of China's foreign trade in the 2010s (taking into account the expected downward trend of its GDP growth in the 2020s)

1.7.4 China in the International Movements of Capital

Until 1993, China participated little in the international movements of capital, the annual flows of which both to and from the country did not exceed \$10 billion. Then the annual capital flows in both directions increased significantly, but did not exceed \$100 billion. However, after 2004, China has become one of the leaders of the global capital movements with annual flows of export and import of capital in the amounts of \$200–600 billion. As a rule, capital import was primarily used for direct and portfolio investments, and export was primarily for other investments (these are mainly loans and commodity loans). China has occupied second place in the world both in terms of the import and export of direct investment. The Chinese government is implementing a phased, regulated liberalisation of the imports of this capital. The areas of application of foreign direct investment (FDI) are divided into encouraged, permitted, restricted, and prohibited. In the 1990s, inward FDI was mainly directed to labour-intensive export production, while the products of enterprises with the participation of foreign capital were not allowed to enter the domestic market. After the PRC's accession to the WTO, preferences and benefits were also provided to inward FDI in real estate, infrastructure, basic industries, mechanical engineering, electronic and chemical industries, and energy, along with conditions to develop energy-saving and environmentally friendly enterprises, as well as to increase the share of domestic components in the cost of products.

The continued growth of FDI flows to China is associated with a reduction in the “negative list” of closed and restricted industries from 166 to 63 in 2017 and 31 in 2021, primarily information services and technologies, software, research, and design services. The military-industrial complex and the mass media remained closed to FDI. China removes restrictions on the inflow of FDI into new areas only after it creates a competitive pool of national enterprises in these industries, provided with national personnel of appropriate qualifications.

FDI stock in China exceeded \$3.4 trillion by the beginning of 2022. Its structure is dominated by the manufacturing industry (but its share fell from 61% in 2005 to 20% in 2021), real estate, business services, and R&D. It is estimated that the bulk of the capital came through offshore companies from developed countries. Although many investors have not fulfilled the requirements of the PRC to provide modern equipment and technologies, the Chinese experience of attracting FDI is generally considered successful.

It is not the effect of individual projects involving inward FDI that is being evaluated, but their complex positive affect for modernising the economy. In particular, the import of FDI provided an influx of currency from the export of traditional industries, and China managed to redirect it to the development of avant-garde industries, the products of which the PRC captured the traditional markets of developed countries. In addition, a tenfold increase in wages in China has weakened its comparative advantages in terms of costs from other developing countries, so foreign MNEs are conducting FDI in China not so much for the sake of exports, as for the development of the rapidly growing Chinese market and for using the developed human capital.

The volume of Chinese FDI accumulated abroad reached \$2.5 trillion by the beginning of 2022. China's largest projects are carried out through offshore investment in Latin America, while large and medium-sized investments are implemented in Hong Kong. Their geographical structure was highly diversified until 2013 but then concentrated on North America and Europe—up to 70–75% at the end of the last decade.

Before 2012, 70–80% of China's largest investments abroad were in the extraction of raw materials for energy and metallurgy, which met the needs of China as a “global factory”, then the share of the raw materials sector in FDI accumulated abroad decreased to 24% by 2016, and to 6.8% (the share of the raw materials sector in outward FDI flows decreased to 4%) by 2020. The top places were occupied by the investments in leasing and business services (32.2%), trade (13.4%), information and telecommunication services (11.5%), manufacturing (10.8%), and financial services (10.5%).

At the same time, the growth of FDI accumulated abroad is largely due to tens of thousands of small and medium-sized Chinese MNEs. They already account for up to half of the accumulated FDI. Such mechanisms of state support for private MNEs include access to loans from the state financial system, especially abroad; the insurance of business risks in host countries; information, consulting, and staffing; the development of global yuan financial, settlement, and payment infrastructure. Although they make these MNEs dependent on the state, at the same time their interests are also bowed by the Chinese state.

Since 2015, there has been a rapid growth of Chinese portfolio investments abroad, but this does not mean the movement of speculative capital, since many of the largest investment transactions of Chinese companies represent the acquisition of stakes of less than 10%, i.e., formally they fall into the category of portfolio investments, but represent mutual cross-investment of Chinese and Western MNEs and banks. The volume of foreign loans and commodity loans provided by Chinese MNEs reaches a huge amount—\$1.6 trillion. Their sale of goods with deferred payment makes products that are not of top quality and innovation, are not the cheapest, but are competitive, and displace enterprises and countries that do not have access to credit resources from the world market.

In order to actively influence other participants in the world economy, since 1992, the PRC government has been encouraging large-scale outward investment by local firms, known as the Go Out strategy (Zou Chuqu). The Chinese government believes that a developed country should have all industries, but not all operations should

be carried out within its national borders. In addition, Chinese MNEs resolve the contradiction between ensuring industrial sovereignty and moving low-value-added operations abroad.

Looking at the challenges, the large-scale influx of foreign direct investment into China has exacerbated the issues of national industrial safety. In addition, developed countries have begun to resist the entry of competing high-tech Chinese goods and capital into their markets, thereby triggering a wave of protectionism in the global economy, and, despite the potential benefits, refuse to include even innovative Chinese goods and enterprises in their production chains.

China has also faced the problem of excessive international reserves due to the opposition of Western countries to the conversion of China's export earnings into their real assets. Therefore, the Chinese MNEs have had to get out of Western global chains and create their own, relying on competitive advantage—the world's largest domestic market. To protect it, China's MNEs are replacing the budget subsidies prohibited by WTO rules with offshore operations. Most of China's MNEs have one foreign branch each, using Hong Kong's "offshore" to finance projects in China. The construction of Chinese global chains in developing countries means that China is creating markets capable of absorbing the products of its modern industries, and making the host countries dependent on Chinese standards, technologies, and equipment. At the first stage, Chinese MNEs are implementing large energy and infrastructure projects in these countries, building enterprises of basic industries. Then, taking advantage of preferential access to the infrastructure controlled by the PRC, a small private business enters the sphere of trade and production of consumer goods. This is the essence of the Chinese Belt & Road Initiative, which emerged as China's response to the challenges of globalisation. Unlike the Western model, the Chinese model of building global chains represents more profitable cooperation for developing countries, since the growing income of the population of the Southern countries is a source of new market growth, which contributes to the modernisation of the PRC economy.

1.8 Social Sector

As a result of the rapid growth of the Chinese economy in the 1980s and 2010s, there was an unprecedented increase in per capita GDP production and, as a result, an overall increase in the standard of living. In 2021, the per capita GDP in China, calculated by PPP, amounted to \$19,338. Over the years of reforms, the food problem and the problem of providing necessities for the majority of the population have been solved, and a level of so-called "small prosperity" has been reached. The number of poor has noticeably decreased, and great efforts are being made to solve the problems of employment and unemployment (in cities and towns, the rate of unemployment was 4.1% in 2019). According to Chinese estimates, the average level of nominal salaries of working citizens increased tenfold in 2000–2020.

At the same time, China continues to maintain a large property stratification and social polarisation of the population. The Gini index for expenditures over the years of reforms has increased, according to official data, from 0.20 to 0.45, and according to unofficial estimates—up to 0.60. This has happened since the average incomes of urban residents are at least 4–5 times higher than those of rural residents, and also because the difference in the incomes of entrepreneurs and employees is excessively large compared to developed countries. However, in the next 10–15 years, as the country transitions to a new development model, one can hope for softening in the property social stratification due to the expansion and strengthening of the Chinese middle class.

The reform of the social security system in the People's Republic of China is moving towards the gradual transfer of relevant social functions to the state from enterprises in the city and production teams in the country, who used to carry the main burden of social spending. In the 2000s and 2010s, the total share of social expenditures of the state in the expenditure part of the state budget increased markedly (see Table 2). Despite significant social progress in comparison with developed, and with some newly industrialised countries, China still continues to significantly save on the social sphere. According to informal international estimates, in the 2010s, total government spending on social needs in the United States amounted to more than 17% of GDP, 14% in France, 11% in Sweden, while in China it is only 7–8% so far.

Today there are two different pension systems in the country—the one for workers and employees in cities and the one for peasants in the countryside. At least 60% of urban dwellers had signed up for the state pension insurance programme by 2012, the experiment of introducing the pension reform in the country only started in 2009. Nevertheless, the Chinese government is going to provide the majority of rural residents with at least a minimum pension by 2020–2025. The average pension in China increased from 640 yuan in 2005 to 2353 yuan in 2016. In 2020, it exceeded 2.5 thousand yuan. However, not all people over the age of 60, but only 60–65% of them, have received pensions yet.

State financing of healthcare is also gradually increasing. By 2020, the share of the population and the state in the total cost of healthcare has increased to 55% (for comparison: this rate is 31% in India, 46% in Brazil, 60% in Russia, 76% in Germany, and 80% in Japan). As a result, total healthcare expenditures reached 5.5% of GDP (for comparison: 3.5% in India, 5.3% in Russia, 9.5% in Brazil, 10.9% in Japan, and 11.3% in Germany).

It should be noted that the effectiveness of the Chinese healthcare system depends not only on the level of its direct financing by the state but also on the degree of centralisation of the economy and policy, the authoritarian form of public administration, the Confucian mass mentality focused on the mandatory implementation of state guidelines, and high discipline. It was these circumstances and factors in particular, that helped China to cope with the coronavirus pandemic in 2019–2020 relatively quickly and less painfully than many more developed countries.

The transition to a new economic model involves, among other things, the fight against the lag of the social sphere in China. At the same time, it should be borne in

mind that one of the attributes of such a lag, namely the relative cheapness of labour, from the point of view of the export-oriented model of industrialisation in China is still one of the significant competitive advantages of the country. The restructuring of the Chinese economy, linked with the maximum possible preservation of its competitive advantages on the one hand and with the minimisation of socio-political risks on the other, is the fundamental task on which the Chinese government's balanced solution will depend for the further successful and safe development of China.

2 Conclusions

1. During the existence of the People's Republic of China (since 1949), the Chinese economic model has undergone a gradual evolution as the country has moved from a backward semi-feudal market to an administrative command and then to a modern developing market economy.
2. The national idea as the goal of China's catching up, and according to some parameters, advancing development is "to revive the former greatness of the country", the main means of achieving this goal is rapid economic growth due to active industrialisation, which reached its maximum average annual rates (about 10%).
3. Such high and prolonged growth rates were largely due to the coincidence of the phase of active industrialisation in the PRC with the country's evolutionary transition to a market economy, which made it possible to fully identify and generally successfully put national competitive advantages into practice in the context of globalisation. These include, foremost, huge labour resources; the highest gross accumulation rate in the world (the peak value was 48% in 2009); a gradual increase in the technological level due to both imports of modern equipment and technologies, and—especially in recent years—due to increasing own expenditures on technological innovations, an effective national idea; the strong economic role of the state; the systemic institutional effect of market transformations of the economy; investments in human capital increase in the last two decades; and priority export orientation of the real sector.
4. Large-scale and rapid industrialisation, turning the People's Republic of China into a kind of "world factory", significantly aggravated and transformed traditional problems and brought to life several new problems, including demographic, resource, and raw materials, the problems of social differentiation, territorial unevenness of economic and social development, relative narrowness of the domestic market, the lagging of the social sphere compared to the economic, problems of efficiency of economic growth and product quality, institutional, environmental, and some others.
5. Global economic crises have accelerated China's transition to a modern version of its economic model as a strategy for the "harmonious development" of the market economy. It has focused on overcoming the above problems and, above all, on refusing to maximise economic growth rates "at any cost", downgrading

this growth in favour of the tasks of social development, on the balance of internal and external markets, on the formation of a large middle class as a guarantor of socio-political stability, overcoming the remnants of discrimination against private owners and forming a modern model of partnership between government and business.

6. During the period of modern reforms and especially during the formation of a new model of economic and social development, China has managed to significantly improve the quality of its human capital and begin the transition to innovative development under the conditions of a new, high-tech stage of ongoing industrialisation in the country based on the digital economy. The most important achievements of the PRC in this area include the formation of a competitive business sector, which is the main generator of innovations; a productive model and forms of public–private partnership in innovation; the integration of the country into the global innovation sphere as the most important condition for developing national high-tech industries; the priority of state policy in the development of education, science, and technology; and the creation of favourable institutional conditions for innovative growth.
7. The gradual completion of the active industrialisation phase in China is manifested, in particular, in increasing the degree of sustainability of economic growth while reducing its rate to 5–6% per year; changing the main macroeconomic proportions, in particular between accumulation and consumption by the primary, secondary, and tertiary sectors of the economy; and the country’s transition from priority industrial development to reliance on the service sector as the main promising driver of development as the centre of gravity in economic policy shifts from physical to human capital.
8. The basis of the real sector of China’s economy is the manufacturing industry and, above all, mechanical engineering, which is growing at a rapid pace (15–20% per year in 2000–2010), and is focused both on exports and, especially after 2008, domestic consumption. The domestic mining industry does not fully meet the needs of the national economy due to the relative shortage of local natural raw materials. This means that China will gradually become the world’s largest importer of hydrocarbons and other mineral raw materials by 2020–2030.
9. In China, in contrast to the very common world practice, there is practically no such negative phenomenon as the separation of the financial sector from the real one, which is largely due to the inviolability of state control over the financial system. China’s fiscal system is notable for the gradual development of the trend towards the budget’s social orientation, as well as for the almost constant, relatively small (1.5–2%) deficit of the central budget associated with a nationally specific kind of neo-Keynesian policy of emission-credit “pumping” the economy to stimulate its growth rates.
10. The success of China’s monetary policy is manifested, in particular, in the constant surplus of its foreign trade balance, which is an important source of replenishment for the country’s official reserve assets, in terms of which, it has consistently ranked first in the world since 2006. The policy of internationalisation of the yuan has made it one of the world’s reserve currencies, and it

is gradually increasing its share in international trade settlements and reserve assets of different countries.

11. An essential feature of China's foreign economic strategy and the globalisation of the economy has been the outpacing growth of its foreign trade in relation to GDP growth. In 2010, China became the largest exporter, and in 2012, the largest foreign trade power in the world. By 2030, China's share in the world's foreign trade turnover is projected to exceed 25%.
12. According to the so-called grand strategy of China, the country should turn from a "regional power with global influence" into a "global power" by 2020–2025. In this regard, in the 2010s–2020s, the tendency to consolidate the PRC as the main buyer in the world raw materials market is further developing, and the disproportion between the country's first position in world trade and its smaller role in international capital movement and knowledge exchange should gradually be overcome. The activity of Chinese enterprises in "going abroad" will increase within the framework of "One belt, One Road".
13. China has occupied second place in the world both in terms of the import and export of direct investment. The Chinese government is implementing a phased, regulated liberalisation of capital flows, and, at the present stage, the areas of application of foreign direct investment are divided into encouraged, permitted, restricted, and prohibited. In order to actively influence other participants in the world economy, the PRC government has been encouraging large-scale outward investment by local firms since 1992.
14. Despite significant social progress compared to developed countries and some newly industrialised countries, China still continues to save on the social sphere. The transition to a new economic model looks towards, among other things, the gradual elimination of this backlog. At the same time, it should be borne in mind that although the cost of labour in the country has been noticeably increasing in the last 20 years, its lower level compared to developed countries, due to the export-oriented model of industrialisation, remains one of the comparative competitive advantages of the PRC in the world market.

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Abstract The chapter deals with the structure of the Indian economy, its specific features, and its position in the world economy. We also characterize its economic potential. The article discusses the stages of India's socio-economic development, the main sources of its economic development, and changes in the structure of the country's economy during its period of independence. We also analyse the general characteristics of agriculture, industry, and services in the country, the structure of its fiscal and monetary spheres, and the issues pertaining to development in the social sphere.

1 Introduction

Modern India is a developing state with a diversified economy that has achieved significant success in economic development. Even though it ranks third in the world in terms of GDP calculated by PPP, it has yet to overcome structural imbalances and create a more advanced model. The chapter deals with the structure of the Indian economy, its specific features, and its position in the world economy. We also characterize its economic potential. The article discusses the stages of India's socio-economic development, the main sources of its economic development, and changes in the structure of the country's economy during the period of its independence. We also analyse the general characteristics of agriculture, industry, and services in the country, the structure of the fiscal and monetary spheres, the issues pertaining to development in the social sphere.

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2 Indian Economic System and Strategy

The architects of the economy of independent India, P. Ch. Mahalanobis (1893–1972) and D.R. Gadgil (1901–1971), headed by J. Nehru (1889–1964), saw their task as overcoming the complete subordination of Indian industry to the foreign industrial and scientific-technical base, the domination of large land ownership, and the landlessness of most peasants in order to form a stable national financial system. In their opinion, such radical transformations in the conditions of India in the late 1940s to early 1950s could be carried out only with the active participation of the State in economic life.

This strategy, later known as the ‘Nehru course’, was formulated by the mid-1950s. Its ultimate goal was to build a ‘socialist-style society’ by expanding the public sector and implementing the concept of a ‘mixed economy’, which was inherently state capitalist, but at the same time contained elements of social equality. The main instrument used to modernize the Indian economy in the 1950s and 1970s was state capitalism. According to the Nehru course, the economy should be based on a combination of the public sector, cooperation, and small private production, while limiting large private capital. By the mid-1960s, the basis of heavy industry was laid in India’s public sector—ferrous and non-ferrous metallurgy, heavy engineering, production of building materials, petrochemicals, electric power, etc. The total volume of industrial production increased by two and a half times from 1948 to 1964. The agrarian reform was carried out with direct participation of the State, and the system of state indicative plans that still exists has become an essential element in India’s economic development.

The model used by independent India during the first macro-stage of its economic development (1950–1991) was successful: industrialization laid solid foundations for the development of the country’s basic industries, agricultural reforms, and the ‘green revolution’ solved the problem of hunger and contributed to achieving self-sufficiency in food (today the share of food in the country’s imports does not exceed 2–3%). India also succeeded in solving social problems: the poverty rate decreased from 45% in 1951 to 35% in 1991, and the literacy rate increased from 18.3% to 52.2%, respectively.

However, at the turn of the 1970s and 1980s, India had to adjust this economic model by giving it a more liberal character, as it did not meet the requirements and realities of that period. The first attempts at liberal reforms were made by the governments of I. Gandhi and R. Gandhi in the 1980s. However, large-scale liberal reforms affecting all spheres of the economy were not introduced until 1991, amidst the most acute monetary and financial crisis experienced by the country in its years of independence and a three-year reduction in agricultural production. India faced the following internal economic problems at that time: a growing need for modernization of the Indian economy; excessive state interference in economic processes resulting in dissatisfaction in the private sector; the urgent problem of numerous chronically unprofitable public sector enterprises; problems accumulated

in the banking sector over the years, especially state-owned banks; and overregulation of the system of foreign economic relations. The situation was aggravated by an unbalanced financial sector (a significant budget deficit, high inflation, irrational structure of the tax system), which made the Indian government increasingly resort to external borrowing.

Liberal reforms undertaken since 1991 have included four main blocks: reduction of the public sector and reform of the public sector's system of industrial enterprises; restoration of the balance of the state budget and tax reform; reform of the banking sector; and reform of the system of foreign economic relations. This, in turn, changed the concepts previously used in the development of economic programmes. The definition of 'self-sufficiency' was adjusted. According to the new understanding, this meant, first and foremost, technological independence. As soon as this was achieved, Indian goods would become highly competitive in the domestic and international markets. In this regard, the basis of India's economic development and the determining factor in the growth of its exports is not just cheap labour, but an expansion of output and improvement in product quality. According to the country's leaders, achieving a high level of competitiveness for Indian goods requires regular adjustments to the foreign economic and financial sectors, and, of course, rapid modernization of the industrial sector, as well as the development of science and education.

Growing prosperity and the successful financial reform activated the process of internal accumulation, improving the structure of budget financing and optimizing the mechanism of investment regulation in order to expand the country's potential, which ultimately largely reduced India's dependence on external financing. In the 1990s, the country began a serious departure from 'inward-oriented development' and began to actively integrate with the world economy.

The modern Indian economic system, formed as a result of the ongoing liberal reforms, includes the following specific features:

- *Orientation towards accelerated, but at the same time, balanced development*, providing for harmonious internal and external economic liberalization. It is noteworthy that liberalization is considered by the Indian political and economic establishment not as an end in itself, but as an instrument contributing to the modernization of the economy, which strengthens the country's economic, technological, and military power, and confirms its position in the world economy. India's transformation into a significant player in the global economy is carried out, among other things, through accelerated economic growth based on increased labour productivity and economic modernization, primarily through the development of high-tech industries.
- *Developing the innovation sphere* and increasing the volume of R&D financing. Currently, the knowledge intensity of the Indian GDP is already approaching 1%. The priority of R&D development is primarily due to the goal of achieving technological self-sufficiency.

- *Solving a complex of social problems*, with particular attention paid to improving the population's educational level, including eliminating illiteracy, reducing poverty, and fighting infectious diseases and epidemics. According to the architects of liberal reforms, all this should actively stimulate the development of human potential in India and contribute to more efficient use of its huge labour resources.
- *Assigning the state a special role in the economy*. Despite a significant reduction in the scale of state regulation in India's economy, the government still retains significant economic instruments to influence the country's macroeconomic situation. For example, state-owned banks account for 75% of all banking transactions in the country, and the state still acts as a major investor (about 1/3 of total investment volume).
- *Active inclusion of India in the world economy*. Over the past three decades, there have been steady trends of strengthening India's position in the international movements of capital and world trade in goods and services, both in import and export, while India's integration ties have significantly expanded, and new and previously existing South–South ties have emerged or were reactivated, etc.

3 Proportions and Efficiency of Economic Development, Economic Growth, and Investment

The average annual GDP growth rate in the first decades of India's independent development, as a rule, did not exceed 3%, which was insufficient for catching up development, and even received the name 'Indian economic growth rate'. The low rates could be explained by the predominance of usually slow-growing agriculture. The country was only preparing for industrialization but had not yet begun its active stage. The lack of its financial resources also negatively affected the pace of economic development in India. But its pace noticeably accelerated with the industrialization since the late 1970s, as well as the liberal reforms undertaken in the early 1990s. In 2000–2020, GDP growth in India averaged 7%, which was primarily the result of significant growth in the industrial sector, as well as in the service sector (Table 1). According to the IMF, in 2022, the Indian economy will remain one of the fastest-growing in the world, and its rate will be 6.9%.

India's economic development is currently accelerated primarily by the use of numerous and relatively cheap labour resources in export manufacturing, as well as the increase in the gross accumulation rate, which has almost quadrupled over the period of independent.

development. At the same time, the gross domestic capital formation rate (investment rate) has not fallen below 30% of GDP in the last two decades: if in 1950/51 it was 8.7% of GDP, then it has been about 32–33% since 2006 (it was 29.6% in 2021/22). It has been increased mainly through the accumulation of savings: the gross savings rate increased from 8.6% of GDP in 1950/51 to 33.7% in 2010/11 and 30.1% in 2020/21. At the same time, the bulk of gross savings (up to two-thirds) is provided by households, while the rest is provided by the corporate sector and the

Table 1 Average annual growth rate of India's GDP in the 1970s–2010s, %

	1970s	1980s	1990s	2000s	2010s
GDP	3.0	5.8	6.0	6.9	7.0
Primary Sector	1.3	4.7	3.4	3.1	3.4
Secondary Sector	3.7	5.7	5.7	7.4	7.5
Tertiary Sector	4.4	6.8	7.3	8.5	8.0

Sources Economic Survey 2018/19/Government of India. Ministry of Finance. Department of Economic Affairs. Economic Division. New Delhi. February 2019; IMF. World Economic Outlook/International Monetary Fund, April 2021

State. In turn, this is largely a consequence of the insufficient development of social security, as India is still characterized by low state participation in the formation of pensions, financing of social services, etc.

At the same time, the share of the public and private sectors in capital investment over the last two decades has traditionally been 1:3, which indicates the strengthened position of private capital in the economy. Today, most state investments are attracted to the development of agriculture, small businesses (especially handicrafts), as well as infrastructure, i.e., the economy's capital-intensive sectors. Private capital is granted the right to develop in dynamic and, therefore, highly profitable sectors of the economy.

The acceleration of economic development in the 2000s and 2010s was also beneficially influenced by actively borrowing advanced technologies and innovations from developed countries and their introduction into production, as well as development in the nation's R&D sphere, which contributed to growth in labour productivity. Realizing that scientific and technical resources are leading factors for economic development in modern conditions, which have a decisive impact on the country's competitiveness, the Indian government has been actively engaged in its development, especially with regard to fundamental research, where it lags behind the advanced economies. Today, the share of R&D expenditures has reached 0.6–0.7% of Indian GDP (about \$75 billion in PPP and \$19 billion in exchange rate).

The pace of economic development has also significantly increased due to the liberalization policy carried out since the early 1990s. This includes opening the domestic market to foreign goods and services, introducing partial convertibility of the national currency, and attracting foreign capital and new technologies, as well as reducing the scale of the public sector and reforming the tax and credit systems.

In recent decades, India has been undergoing a serious transformation of its industry structure, which is becoming more adequate for the modern economy (Table 2).

Today, the tertiary sector is considered the largest and most dynamic segment of the Indian economy. The most important factor ensuring the accelerated development of the service sector was the improvement of living standards. The annual growth rates in the tertiary sector in the 2000s and 2010s averaged 8–8.5% and consistently

Table 2 Industry Structure of India's GDP, % of GDP

	1980s	1990s	2000s	2010s	2021/22 FY
Total	100.0	100.0	100.0	100.0	100.0
Primary Sector	36.1	28.4	18.7	15.0	18.8
Secondary Sector	25.4	20.1	20.1	23.0	20.2
Tertiary Sector	38.6	51.5	61.2	62.0	60.9

Sources Economic Survey 2018/19/Government of India. Ministry of Finance. Department of Economic Affairs. Economic Division. New Delhi. February 2019; Economic Survey 2021/22/Government of India. Ministry of Finance. Department of Economic Affairs. Economic Division. New Delhi, February 2022

outperformed the corresponding indicators in the primary and secondary sectors (3–3.5% and 7–7.5%, respectively). If the dynamic development of the tertiary sector in the 1980s was provided mainly by trade and transport, as well as banking and insurance services, then it was communication services and the restaurant and hotel business in the 1990s, and the telecommunications sector and IT services in the 2000s. In the post-reform period, several measures aimed at liberalizing the service sector were implemented in India, and many of the previously existing restrictions were lifted on access to foreign capital, which began to actively invest in the tertiary sector.

Despite the progressive shifts in the sectoral structure of GDP, agriculture still plays an important role in the Indian economy. Although its share in GDP (together with fishing and forestry) is about 18%, at the same time, more than 40% of the economically active population is employed there. Farming is the basis of Indian agriculture. It accounts for up to three-quarters of all agricultural production. The above facts indicate the underdevelopment of the agricultural sector.

The share of the secondary sector (without construction) in the formation of GDP is 20%, and 26% of the economically active population is employed here. The high growth rates of industry in the 2000s and 2010s are largely due to high investment activity, including through the attraction of foreign entrepreneurial and loan capital, as well as fairly efficient use of basic capital.

The average annual growth rate of labour productivity in India is quite high—4.4%, and to a greater extent than, for example, in China, they are provided by an increase in labour quality (by 43–45% in India vs. 25% in China) and, to a lesser extent, by an increase in capital ratio (20% and 60%, respectively), and intersectoral movement of labour resources (10% and 15%, respectively).

Despite the significant problems in economic development, long-term forecasts for India are quite optimistic. Most assume that by the 2050s, India will become the second economy in the world in terms of GDP, if it is counted by PPP.

Meanwhile, the further accelerated development of India will depend on the consistent modernization of its economy, mitigation of the current acute problems—territorial imbalances, so-called ‘bottlenecks’ in infrastructure (lack of modern roads, electricity, etc.), the quality of human capital (still more than a third of the adult population is illiterate), etc.

4 Business Forms

Big business represented in India by the so-called ‘old’ companies (which existed before 1947) and the so-called ‘new’ companies (which appeared after the 1950s) has been improving its positions at a rapid pace over the years of independence. The associations of commercial and industrial-financial capital formed in the colonial period are concentrated in 75 family industrial-financial groups (‘houses’), which together own 1,536 companies, as well as 44% of all assets of non-state and non-bank economic structures. The largest and most influential monopolistic groups are Birla, Bangur, Nachartup, and Tata. One can also distinguish companies like Mahindra, Wipro, and Reliance among the representatives of large businesses of the ‘new period’.

The position of small-scale production in the Indian economy (in Indian statistics, this term traditionally appears instead of the term ‘small enterprises’) has significantly strengthened during the period of independence. For example, its share in exports increased to 30% by 1992, when the liberal reforms were introduced, and already up to 40% during the post-reform period, by 2016. In 2020, all forms of small-scale production in India accounted for 80% of the workforce employed in industry and 45% of the production of manufactured goods. The contribution of this segment of the Indian economy to GDP was 29%. It is noteworthy that the Indian government intends to increase this share to 50% by 2025 and create an additional 100 million jobs. According to social, material, and technical indicators, the small industry of India is divided into two large segments—modern and traditional (or handicraft) production, in which handicrafts and the production of enterprises with handlooms occupy the strongest positions.

Small-scale manufacturing is developing everywhere in India, both in the formal and informal sectors. At the same time, small-scale production in India faces a whole complex of internal and external risks, the identification and prevention of which the Indian political and economic establishment is traditionally concerned with. In this regard, government stimulation is included in the structure of state regulation of India and includes regulation in order to create a regulatory environment for the functioning of enterprises, assistance to entities in conducting economic activities, and targeted assistance to individual entities working in priority areas for the State (preferential taxation, preferential access to loans, facilitated access to information, consulting, training, technical support, etc.). In general, the state’s economic policy in this area follows two main directions: limiting the expansion of large business into spheres traditionally dominated by small-scale production by reserving certain industries for them, while stimulating production by small enterprises. The following principle is the most important for the second direction: everything that can be produced by small enterprises should be produced by them, and a favourable investment climate should be created in order to facilitate their evolution and transition to a higher stage of development.

The policy of supporting small-scale production in India, especially since the 1980s and up to the present day, is being implemented in parallel with extremely

cautious attempts to modernize this production, which may reduce the demand for unskilled labour. The stimulation of small-scale production has become a kind of tool for solving the problem of sustainable development (foremost, its social component). All state documents on industrial policy have traditionally attached significant importance to the development of small-scale production, including artisanal, and industrial. From the point of view of India's development strategy, these enterprises should remain suppliers of jobs and ensure effective mobilization and gradual development of human capital. Therefore, assistance to this segment was provided through both direct (reserving industries for small-scale industry, the number of which is about 300 in 2022) and indirect measures (facilitated access to information, consulting, personnel training, etc.), which eventually yielded impressive results.

Despite the liberal reforms being carried out, the position of the public sector is very significant. For example, three branches—the nuclear industry, the production of military aircraft and ships, and railway transport—are reserved for the public sector (there were previously 18). The prices for four socially significant goods (petrol, fertilizers, sugar, and medicine) are still controlled. The State is largely involved in the credit sector, having accumulated up to 75% of all assets of the modern banking system.

The burden of social functions and encumbrances that distinguished the public sector from the private sector in the pre-reform period has significantly decreased, and it has become more market-oriented and profit-making. It is noteworthy that the most profitable enterprises capable of becoming competitive world-class giants have received the greatest autonomy. They include the Oil and Natural Gas Corporation, the National Thermal Power Corporation, the Steel Authority of India Limited, which is the holding company of state ferrous metallurgy plants, etc.

In the 1990s–2000s, partial privatization was carried out in India (this process was called 'disinvestment')—and shares in state-owned companies were sold. It is noteworthy that the Indian government did not see its aim as transferring state-owned enterprises to the private sector. At the end of 2020, India had 256 state-owned enterprises employing about 1.5 million people.

5 Human Capital and Innovative Development

The demographic load factor in the country in the 2000s and 2010s continued to decline thanks to the policy of reducing the birth rate. In 2021, the population growth rate was 0.51%. The economically active population of India exceeds 700 million people, but about 70% of it is concentrated in traditional sectors of the economy, which indicates the predominance of traditional forms of employment in the country.

Given the specifics of the demographic situation in India (relatively high population growth rates, a high proportion of young people, etc.), unemployment is a huge problem for the country in the face of increasingly slowing demand for unskilled labour. At the same time, according to official data, the unemployment rate in India currently stands at 3.5%, but its hidden form, most noticeably observed in

the cottage industry and agriculture (the government does not have full data on the rates of employment here), reaches more than 10%. The majority of the population employed here officially does not work anywhere, being informally employed (actually unemployed). Youth unemployment is also a very serious problem, which currently exceeds 10.5%. The government is taking steps to reduce unemployment. According to Indian labour legislation, the management of enterprises, if necessary, has the right to dismiss no more than 100 workers, which, however, can conserve small inefficient industries and preserve jobs at the same time. It is obvious that the accelerated development of the Indian economy is impossible without creating sufficient new jobs in modern sectors, which is all the more important given that India is still a country with a demographic dividend, in which about 12 million people enter the labour market annually. The solution to the problem of unemployment is currently associated with further improving the education system and the skills of the workforce.

In India, there is a steady increase in education spending, which in financial years 2020/21 and 2021/22 accounted for 3.1% of GDP, including 0.5% for higher education. However, the country still has a low literacy rate—71.2%, according to data for 2021—the lowest among the BRICS countries. The average number of years spent by Indians at school is 6.5 years, which barely exceeds the duration of primary school. In addition, there is a very significant gender gap. The literacy rate among women is much lower than among men—65.5% and 84%, respectively, and the average number of years spent at school is 4.8 years for girls and 8.2 for boys.

Among the problems that are difficult to solve in the field of education are politicization and religious orientation of individual educational institutions; the inaccessibility of higher education for a significant part of the population; the appearance in recent years of numerous private schools and institutes offering low-quality educational services; a shortage of teachers in primary schools (there are 35 students per teacher); and incomplete coverage of children of appropriate ages with primary and secondary education. Another problem is to create the conditions for qualified personnel to be in demand and not to go abroad in search of a better life (60% of graduates in the technology sector could not find a job in India in 2017).

One of the distinctive features of India's economic development is a rapid increase in its scientific and technical potential, especially since the mid-1980s. At the same time, within the framework of the adopted Doctrine of Scientific and Technical policy (1983), emphasis has been placed on the development of ICT.

In 2010–2020, the share of R&D expenditures averaged 0.7% of GDP, which, although the lowest among the BRICS countries, nevertheless accounts for about 2% of global R&D expenditures (PPP). The specific features of Indian science include a high share of the State in R&D financing (about 55%), and, at the same time, almost 3/5 of government R&D expenditures are directed to nuclear energy, space, basic science, and biotechnology. Nevertheless, 26 Indian companies operating mainly in the pharmaceutical and automotive industries, as well as in the IT sector, were among the Top 2,500 in terms of R&D expenditures in 2017 (by comparison, the number of Chinese companies in this list is 301). At the same time, despite the fact that India is

actively attracting FDI, few new technologies come to the country with it, and they are mainly focused on assembly plants.

India ranks third in the world in the number of university graduates with a PhD in science and technology. There are more than 1,000 universities in India and the country has a solid educational base that allows it not only to train personnel for the national economy but also to provide serious assistance to other developing countries.

Today, India's innovation policy is linked to industrial policy, and there has been a certain reorientation from the predominant development of the IT sector to the modernization of industrial and agricultural enterprises. Launched in 2014, the 'Make in India' initiative provides for the transformation of the country into a global engineering and industrial hub.

Despite the achieved success, limited R&D spending does not allow India to close the gap in several advanced areas. For this reason, the country focuses on borrowing foreign technologies from Europe, the USA, and Japan and introducing them into most industries. India's modern innovation strategy is still more of a 'borrowing strategy' aimed at mastering the production of items that were previously created in developed countries, which, at the same time, allows recipients to increase their own engineering and technical potential to a certain extent.

At one time, India showed ingenuity in finding its niche in the global economy and took first place in the global export of software and business process outsourcing. Now, the political and economic establishment of the country thinks that India should go further and become the 'digital factory of the world', becoming the vanguard of the digital revolution.

6 Real Sector and Industrial Policy

Agriculture still plays an important role in the socio-economic development of the country. It not only fully provides the population with food and the economy with raw materials but is also an important source of labour for other sectors of the economy since up to 60% of the population of India still lives in rural areas. It is also an important source of foreign exchange earnings since the share of agricultural goods and products manufactured using raw materials from the agricultural sector currently stands at about 12%.

Agriculture and the primary sector as a whole continue to be traditional, as it depends on weather factors and is extremely slow to open up to technology and foreign investment. According to Indian statistics for FY 2021/22, agriculture accounts for 11.7% of GDP in the sectoral structure of agriculture, with livestock providing 4.4%, fishing—1.2%, and forestry—1.5%. These proportions indicate backward agriculture. At the same time, it is important to say that India has to restrain the modernization of this sector because of the social and humanitarian problems that may follow it.

Even though agriculture in India continues to be an important branch of the economy, it is industry and, above all, manufacturing, that is one of the drivers of

Indian economic development. The industrial policy of the pre-reform stage limited the spontaneous development of private entrepreneurship, and the public sector gradually turned into the driving force of the national economy. At the same time, some industries were fully or partially reserved for the public sector to prevent the dominance of private monopolies in key sectors of the economy. The modern industrial policy is aimed at forming a competitive environment and creating equal market conditions for all entrepreneurs, including the public sector. The New Industrial Policy proclaimed in 1991, which is still relevant today, has largely deregulated the country's industrial sector. Its main goals were to correct imbalances in the national economy, maintain steady growth in employment and labour productivity, and increase the competitiveness of Indian products on the world market.

The fuel and energy balance still preserves archaic energy sources (firewood, manure, etc.)—their share is about 30% of the total volume of primary energy sources. The bulk of electricity is generated by thermal power plants (78% in 2020/21 FY), while the contribution of hydroelectric power plants and nuclear power plants is still insignificant, at 9.0% and 3%, respectively. Power plants operate mainly on local coal, as the country's oil and gas reserves are small. Annual oil production (30.5 million tonnes in 2020/21 FY) satisfies about 1/5 of the country's needs, which pushes Indian oil companies to implement joint projects with foreign partners in oil production abroad. Meanwhile, oil refineries are successfully operating in the country, which has turned India into an exporter of petroleum products. Alternative energy is also developing in India. Its share of electricity generation in 2020/21 FY reached 10%.

The mining industry, which has a good resource base, produces 10% of the country's GDP and 15% of its export earnings. Meanwhile, India's natural resources are still insufficiently studied. The leader is the coal industry. Annual coal production volumes in 2015–2020 consistently exceeded 700 million tonnes, which is more than 20 times more than the 33 million tonnes in 1950/51 FY.

The contribution of the manufacturing industry to the formation of GDP is about one-fifth. Both heavy and light industries are well-developed in the country. Significant progress has been made in the manufacturing industry during its period of independence. For example, the chemical industry is developing very intensively, primarily the production of mineral fertilizers (the country ranks third in the world for their production) and pharmaceuticals. There are about 5,000 small and over 250 large pharmaceutical enterprises in India. India is one of the world's leading manufacturers of medications, mainly generics. Domestic production helps it meet more than 2/3 of its needs for medicine, and 52% of Indian pharmaceutical products are exported.

Mechanical engineering, especially in the automotive industry, is well-developed in India. Every year, about 1.5 million cars of various types are produced in India—from cars to trucks and buses. The Maruti plant (with 30% Japanese participation) occupies 2/3 of the national market for automotive products. Other joint ventures are producing and assembling cars (Mercedes, Fiat, Renault, etc.).

The IT sector has been developing at an accelerated pace since the 1990s. Today, 4.1 million people are employed here, and it accounts for 7.7% of GDP, as well

as about 30% of exports of services. One of the largest centres of IT development in modern India—its Silicon Valley—is the state of Karnataka, and especially Bangalore, which accounts for about 30% of all software produced in the country.

The largest branch of the light industry is textiles, which has a long historical tradition in India. It provides about 5% of GDP, more than a third of export revenues, and a fifth of all industrial production. About 100 million people work here. It is estimated that up to 70% of textile industry products are manufactured by small enterprises and households.

The railway system in India is the largest in Asia and fourth in the world. Meanwhile, the uneven development of the railway network in various parts of the country, as well as the use of three types of railway gauge, cannot but affect the efficiency of this type of transport, often causing multiple transshipments of goods during transportation. Sea transport dominates in foreign trade, especially since the Indian Merchant Fleet is one of the largest in the world (more than 6 million gross registered tonnes).

Communication is developing rapidly in India. The rapid growth of the telephone industry, especially its mobile segment, began with the adoption of the National Telecom Policy (National Telecom Policy, 1994), which defined the relationship between the state and business in this industry and also allowed foreign capital. The total number of subscribers as of 31 December 2019, amounted to 1.172 billion people.

The Internet is spreading rapidly. According to the Association of Internet and Mobile Operators of India, the number of Internet users in 1998 was 1.4 million, reaching 100 million in 2008, and 662 million in 2019.

7 Financial Sector

7.1 Fiscal System

The budgets of the India's central government consist of two parts: a regular budget and a capital investment budget. The first is collected mainly from taxes and revenues from state-owned companies and is spent mainly on ordinary state needs (maintenance of the state apparatus, defence, etc.). The second is formed from public, private, and foreign loans and is spent on public investments in the economy.

The particular feature of the Indian tax system is that most of the population, including the poorest citizens, are not subject to income tax, only paying indirect taxes, which, until the early 2000s, caused indirect taxes to prevail in the state's tax revenues. Meanwhile, the most important trend of the last three decades has been a gradual increase in the share of direct taxes in tax revenues (consistently exceeding 52% in 2015–2021), which is explained, by adequately implemented tax reform (simplifying the tax structure, fighting income concealment and tax loopholes, reducing administrative costs, etc.) on the one hand, and by a gradual increase in the welfare of the country's population on the other. In general, the tax burden in India

increased from 7 to 12% of GDP under the central government budget in 2000–2010s, and from 15 to 18% of GDP under the consolidated budget.

By the standards of developing countries, India has a very significant minimum non-taxable individual income tax: 250,000 Rs per year (about \$4,000) for persons under the age of 60, 300,000 Rs (about \$4,500) and 500,000 Rs (about \$8000) for persons over 60 and 80, respectively. Such a significant non-taxable minimum stimulates domestic demand and helps alleviate the country's poverty problem to some extent. Meanwhile, this narrows the tax base: the number of taxpayers in India is currently about 20.5 million people (3.7% of the economically active population), and the share of income tax in total tax revenues is about 20–22% (about 2.1% of GDP).

Implementation of the concept of a mixed economy, which is inherently state capitalist but also contains elements of social equality, was inevitably accompanied by an increase in government expenditure, which had reached 42.6% of GDP by the end of the 1980s. The liberal reforms of the 1990s–2000s reduced government expenditure in relation to GDP, but its share in GDP remains very significant—about 30%, which is explained by the increase in the volume of government financing of social and economic infrastructure. In general, during the implementation of the 13th five-year plan (2012–2017), the government mostly spent money on social security (29.4%), energy (25.1%), transport (18.9%), industry (6.7%), and agricultural development (6.2%).

In the 1990s, India's fiscal deficit was generally around 6% of GDP, but the government managed to reduce this to 4–5% by the middle of the 2000s by adopting tough budgetary measures. Over the last five years, it has remained stable, within 6–6.5%.

India's economic situation has been aided by declining public debt, which currently amounts to 50% of GDP. The volume of public debt has decreased due to a significant reduction in the scale of domestic borrowing, as well as a rational policy for external borrowing, which does not allow for sharp increases in the short-term component.

7.2 Monetary System

India's tight monetary policy kept the average annual inflation rate at about 4–6% in 2000–2021. As a result of a number of circumstances (the need to mitigate the consequences of global financial and economic crises by increasing budget expenditures, increasing spending on social needs and infrastructure facilities, natural disasters, the devaluation of the rupee in 2010–2013, etc.), the inflation rate increased to 8–10% in 2009–2014. However, it has been about 4–6% in recent years.

The monetization coefficient in India has increased significantly during the period of liberal reforms: from 47% of GDP in 1990 to 87% in 2020, which is much higher than in most developing countries. The increase in the monetization coefficient indicates that the Indian economy is adequately provided with necessary financial

resources, which, in turn, stimulates economic growth. At the same time, the money supply, which increased annually by an average of 12–20% in India in the 2000s and 2010s, supports the growth of the country's GDP and economic operations and is partially sterilized with the help of various government debt obligations and the flexible interest rate policy of the Reserve Bank of India.

The features of diversity inherent in the Indian model have also influenced the organization of the banking sector, in which organized and unorganized segments still peacefully coexist. The unorganized segment includes:

- (a) indigenous banking organizations, which are private firms accumulating deposits of the population, and then issuing loans, as a rule, without any guarantee, but, at the same time, only to a limited, well-known circle of clients.
- (b) unregulated non-bank financial intermediaries, among which recommendation funds are allocated, whose subscribers make annual contributions, which are subsequently accumulated and transferred to the disposal of one participant in accordance with the order.
- (c) a system of money lenders that still exists, but on a much smaller scale than before. Unlike traditional local banking organizations and non-bank financial intermediaries, money lenders do not attract deposits from the population and lend customers their own funds. The official statistics do not take into account the unorganized segment, and its activities are not regulated by any legislative acts. These forms of activity in the unorganized banking segment are most widespread in small towns and rural areas.

The organized segment in India usually includes the so-called 'scheduled banks', which are fixed in special lists in India's central bank—the Reserve Bank of India—and have broader business rights in comparison with the rest, as well as 'non-scheduled' banks.

Today, there are 134 registered commercial banks in India. At the same time, state-owned banks account for about 60% of all assets.

Being under state control, the Indian banking system purposefully ensures an adequate inflow of funds into strategically important sectors of the economy, ensuring their sustainable development and the implementation of the state 'Participation in Growth' programme. It is noteworthy that there is a mandatory threshold for lending to 'priority' sectors in India (40% for national banks and 32% for foreign). These loans were invested in agriculture (about half of the total volume of loans issued), small businesses (about a third of all funds issued), and mortgage lending.

In the 1990s and 2010s, private capital, including foreign capital, was admitted to India's credit system, as well as many other areas, which has contributed to the creation of a competitive environment in the domestic market.

The Reserve Bank of India has consistently pursued an active policy aimed at limiting speculative operations in the stock market, as well as stimulating economic development and preventing a liquidity crisis. In particular, in July of 2013, in response to a sharp short-term depreciation of the rupee, the RBI limited the possible

export of currency abroad for both Indian citizens (from \$200,000 to \$75,000) and companies (from \$400,000 to 200,000), thereby preventing further speculative depreciation of the rupee.

8 External Sector

8.1 Foreign Trade

Statistical indicators on Indian merchandise trade during the period of its independent development, and especially in the post-reform period, indicate that it was stimulated by the government's policy (Table 3). The foreign trade quota (foreign trade turnover to GDP) has also increased significantly—from 12.5% of GDP in 1950/51 FY to 14.7 in 1990/91 FY, about 40% of GDP in 2014–2016, and 30% in 2017–2020. Even though India's share in world trade is still small (1.6% in world exports and 2.1% in world imports in 2020), the role of trade in the globalization of the Indian economy cannot be overestimated.

The low volume of the foreign trade quota and the semi-openness of the Indian economy are explained by the fact that, due to its scale and the implemented development model, it is more focused on the domestic than the foreign market. This is also due to the insignificant growth of India's share in world trade.

The transformation of the commodity structure in India's foreign trade is noteworthy. In the 1950s and 1960s, the main export items were agricultural goods, as well as textile and jute products, while, today, India is already exporting cars, pharmaceuticals, industrial equipment, and jewellery, as well as high-tech products. Indian products are shipped not only to developing countries but also developed

Table 3 India's Foreign Trade, \$ billion

	Export	Import	Balance
1990/91 FY	18.143	24.075	−5.932
2000/01 FY	44.560	50.536	−5.976
2010/11 FY	250.468	380.935	−130.467
2015/16 FY	262.290	381.007	−118.717
2019/20 FY	313.361	474.709	−161.758
2020/21 FY	291.81	394.44	−102.63
2021/21 FY	417.81	610.22	−192.41

Sources Economic Survey 2019/20/Government of India. Ministry of Finance. Department of Economic Affairs. Economic Division. January 2020; Economic Survey 2020/21/Government of India. Ministry of Finance. Department of Economic Affairs. Economic Division. January 2021; Economic Survey 2021/22/Government of India. Ministry of Finance. Department of Economic Affairs. Economic Division. January 2022

countries, with the share of manufactured products generally making up about 70% of exports. And this is taking place while the country continues to import modern equipment and, with it, the latest technologies for the systematic modernization of the country's economy. Being drawn into global value chains has gradually increased the share of high-tech Indian export products, which amounted to about 8% at the end of 2018/19 FY. Though, at the present stage, circumstances like restrictive investment policies, infrastructure problems, and corruption have generally prevented these products from rising above the so-called 'mid-range market', India is not turning into an 'assembly shop', as happened with China. In general, the volume of high-tech exports is increasing more due to the development of India's own scientific and technical potential than the attraction of foreign capital.

Transformations in the geographical structure of India's foreign trade are also significant. The share of trade with developed countries is steadily declining: from 51.5% in 1996/97 FY to 35.8% in 2020/21 FY in terms of exports, and from 42.2% to 21.9% in terms of imports. Meanwhile, the active expansion of India's ties with developing countries has gradually increased the share of exports to those nations from less than 40% in 1996/97 FY to 64.2% in 2020/21 FY, and the share of imports from 47.4% to 78.1%. Moreover, in both cases, the dominance of Asian states is obvious.

One cannot fail to mention India's success in the foreign trade in services, which has demonstrated high growth rates, noticeably exceeding world indicators in the 2000s and 2010s. It is also noteworthy that India has succeeded to a much greater extent in entering foreign service markets than commodity markets—its share in world exports of services was 4.1% in 2020. The basis of Indian foreign trade in services can be primarily attributed to software production and outsourcing of business processes, as well as transport and tourism services. At the same time, a large positive balance in trade in services is traditionally formed primarily in the services of the first type.

Indian foreign trade policy is carried out in line with liberal reforms and includes export promotion (through lending and insurance of export operations, expanding the network of export companies, and creating numerous free trade zones) that gradually open the domestic market to foreign goods and services.

8.2 India in International Capital Movements

The low GDP growth rates observed in India in the pre-reform period are partly explained by the relatively low level of FDI inflows and distrust of foreign investors. The investment policy of the 1950s and 1980s was aimed at attracting foreign capital to such sectors of the economy in such a way that, on the one hand, it did not contradict the interests of the development of Indian capital, and, on the other, contributed to the modernization of its structure, ensuring an inflow of funds into capital-intensive and technologically complex branches of national industry.

At the same time, the inflow of foreign aid through international financial structures on a bilateral basis was actively encouraged. Foreign aid, the volume of which in various years reached 4–5% of GDP, played a significant role in financing five-year economic development plans, as well as the current account deficit of the balance of payments, until the end of the 1970s. In the 1980s, due to the strengthening of the position of the Indian economy, cross-border external sources of financing through state channels were replaced by commercial loans, which inevitably increased the external debt. This reached 29% of GDP by the beginning of 1991, which took 35% of export earnings to repay, on average.

India's modern investment policy is being formed in line with the increasing openness of the national economy and is aimed at attracting foreign entrepreneurial capital to the country. Foreign investors are provided with significant opportunities to invest their capital in the vast majority of the national economy's sectors. In addition, in several industries, foreign entrepreneurs can make investments automatically, without obtaining prior approval from the Indian government, while Indian companies participating in joint ventures with foreign capital only have to notify the government about them. Despite this, foreign investment in several industries is still limited, and foreign investors still cannot work in several Indian industries (for example, nuclear energy, housing construction, etc.).

At the same time, in order to prevent excessive dependence of the Indian economy on foreign investors, the government of India sets certain conditions for them. For example, foreign producers of car engines are obliged to use local automotive components, and they can import components if they improve export performance for the previous fiscal year.

India is among the top five global recipients of FDI among less developed countries, with an annual volume averaging about \$40 billion in 2015–2019. In 2020, this grew to \$64.6 billion. According to the results of 2020, the total volume of accumulated FDI in the Indian economy exceeded \$480 billion. However, this is still less than that in other BRICS countries, with the exception of South Africa. While India's share of the total volume of global cross-border investment amounted to only 0.29% in 2000, it grew to 6.4% in 2020.

The main investors in the Indian economy are companies from the UK, Japan, the USA, Germany, France, and the UAE, as well as offshore centres, especially Mauritius and Singapore, which have large Indian diasporas. The sectoral structure of FDI distribution in the Indian economy is characterized by a predominance of investment, both financial and non-financial, in the service sector. If we take the manufacturing industries, the automotive industry, pharmaceuticals, and chemical production are the most popular among investors. A significant amount of investment is traditionally directed to construction and real estate transactions.

Launched in 2014, the Make in India programme, which includes 25 industries where the country can potentially become a world leader (mechanical engineering, pharmaceuticals, textile, and chemical industries), generally contributes to the growth of FDI inflows to India. Meanwhile, the opponents of excessive openness of the domestic market point to the huge price the country pays for integration in the world

economy—water and air pollution, soil depletion, significant population migrations from villages to cities, etc.

In the 2010s, the inflow of foreign commercial borrowings to India sharply increased, which is mainly due to a lack of financial capital within the country and the need to finance the modernization of the national economy. Today, external commercial borrowings account for 30% of India's net capital inflows and 30% of its private external debt. At the same time, India remains a recipient of foreign aid (\$8.3 billion, or 0.1% of GDP in 2018/19 FY).

Along with the traditional role of India as an object of the application of foreign capital in the post-reform period, there is an increasing trend of its participation in the export of capital, which is considered by the Indian political and economic establishment as a means of strengthening the country's position in world markets. According to the results for 2020, the total volume of Indian direct investments abroad reached \$191.3 billion, of which more than \$130 billion were exported in the 2000s.

The main reasons for the export of capital, as well as its conditions in the 1990s and 2010s, have changed significantly compared to what it was before the start of liberal reforms. Among the reasons for the export of capital before the 1990s was the strengthening of monopolistic groups, the concentration and centralization of capital, as well as state policy preventing the transformation of large companies into monopolies (licensing the opening of new and increasing existing companies, etc.). The state gave priority to direct foreign investment in the form of minority stakes in foreign joint ventures, mainly in the form of exports of capital-intensive equipment. The government considered the export of private capital as an opportunity to acquire foreign currency, as well as one of the tools in the struggle for new markets in developing countries.

In the post-reform period, as a result of the liberalization of legislation regulating the export of capital from India, companies were allowed to automatically invest abroad without the approval of the Reserve Bank of India in any industry, not just those in which they were employed in India. This expanded the geographical and sectoral diversification of Indian direct foreign investment (in the 2010s, more than half of its volume began to be concentrated in developed countries, mainly in the service sector), and also changed the forms of entry of Indian capital into foreign markets (since the early 2000s, the main form was the acquisition of large shares in joint ventures, up to 100%, and mergers). At the same time, large shares of these enterprises, as a rule, were acquired by developed countries, and the minority by developing countries.

A distinctive feature of modern India is its gradual transformation from a recipient of foreign aid into a new donor in the global economy. The average annual volume of aid reached \$1.6–1.8 billion by 2020. More and more countries are receiving aid (the main recipients of Indian aid are the countries of South and Southeast Asia, as well as the African continent), while the mechanisms for its provision are being improved. It is noteworthy that India is currently providing not only development assistance to its recipients but also humanitarian aid. In general, aid (both humanitarian and development assistance) is a very flexible tool, which India uses not only to help

countries in need, but also to successfully implement its economic goals (stimulating Indian exports, improving the climate in recipient countries for private investment from India, and creating jobs for Indian specialists travelling abroad under relevant contracts).

8.3 India as a Labour Exporter

The number of the modern Indian diaspora in the world currently exceeds 30 million people. According to the World Bank, at the beginning of 2022, its labour ‘component’ exceeds 16 million people (1st place in the world).

Since 2004, India has consistently held first place in the world in terms of the absolute volume of money transfers to the homeland carried out by the diaspora. During the period of liberal reforms, their volume increased almost 24 times and, by the end of 2021, reached \$87 billion, or 2.9% of GDP. This growth can be explained both by the institutionalization of money transfer channels and the qualitative changes that took place among migrant workers: their qualifications and, accordingly, well-being have increased, and, hence, their ability to transfer large amounts of money to their families at home. Thanks to money transfers within the country, demand is stimulated, and social problems are solved.

When looking at the negative aspects of Indian labour emigration, one should note one problem, though it is not too acute at the present stage. It is the issue of ‘brain drain’ and the associated loss to the state budget for personnel training. However, if we consider the profits and losses of exporting labour, India is winning from this situation.

8.4 Currency Policy and External Debt Problems

Liberal reforms have led to the highest growth in international reserves in India’s economic history, amounting to about \$1 billion in 1991, and exceeding \$630 billion by the beginning of February 2022.

On the eve of the launch of India’s reforms in 1990/91 FY, the country’s external debt stood at about \$83.8 billion, or 29% of GDP, but it amounted to \$593 billion, or 20.1% of GDP at the exchange rate, by September 2021. The indicator of debt severity is small—in recent years, no more than 6–8% of export revenues have traditionally been spent on debt servicing. The fact that more than 80% of India’s external debt is long-term speaks about the skilful implementation of its foreign debt management policy. The main burden of debt (more than three-quarters) falls on the Indian private sector since the nation’s rapidly developing business sector lacks financial resources. Sufficient international reserves make it possible to fully cover the debt.

Until the end of the 1980s, the Indian government pursued a policy of ‘expensive’ rupees, which was beneficial to the state in servicing foreign debt, as well as for

purchasing necessary foreign equipment, without which it was almost impossible to modernize the economy. Since the early 1990s, the Reserve Bank of India has gradually lowered the nominal exchange rate of the rupee (especially from 1992 to 2006) by about 1.6 times in order to increase the competitiveness of Indian goods on foreign markets and stimulate the growth of imports of foreign capital. Although the nominal exchange rate has fluctuated within a certain corridor in subsequent years, the limits of this corridor were not very significant (from 50 to 70 rupees per \$1), which can be explained by the constant monitoring by the central bank.

The main instruments of modern monetary policy are manipulation of the discount rate (it was an average of 5–7% in 2015–2021) and currency interventions, mainly to sterilize the excessive inflow of foreign currency. The ‘cheap rupee’ policy also has its costs: the increased influx of export earnings in recent years has increased India’s inflation rate (national legislation still provides for the mandatory sale of this revenue on the domestic market). In addition, this policy significantly complicates the import of machinery and equipment and is less preferable when servicing external debt.

8.5 Priorities of India’s Foreign Economic Policy

The transformation of India’s wind power system in the 1990s and 2000s as part of its *Look-East Policy*, which shifted focus to developing countries, has reversed the flow of India’s international business to the East.

However, the unprecedented growth of mutual Indo-Chinese trade turnover (an average of about \$90 billion in 2019–2021) that manifested itself at the turn of the century, which turned China into a leading trading partner for India (16.6% of Indian trade turnover in 2020/21 FY), has not significantly increased investment and scientific and technical cooperation between the two Eastern giants.

India’s second leading trading partner is the European Union, even though in 1990–2010 its share in the Indian market decreased. In 1990/91 FY, 29.4% of total Indian imports came from EU; in 2009/10 FY, it was 13.3%; and 11.7% in 2020/21 FY, while the EU’s share in India’s total exports was 27.5%, 20.2%, and 16.4%, respectively. A distinctive feature of mutual Indo-European trade is, firstly, its relative balance, and secondly, a positive trade balance in the vast majority of cases. This radically distinguishes it from Indo-Chinese trade, which is characterized by a significant trade imbalance in favour of China, increasing more than 100 times in the post-reform period. This is primarily associated with an imbalance in the structure of mutual trade. At the same time, the EU is one of the largest investors in the Indian economy. Its share consistently accounts for about 15–18% of the total volume of FDI inflows to India.

Despite a significant reduction in the US share in the Indian trade, which is especially manifested in a decrease in the US share in Indian imports—from 12.1% in 1990/91 FY to 7.4% in 2020/21 FY (18% in 2020/21 FY in Indian exports)—their

positions in investment cooperation are consistently strong. The country is confidently among India's top three investors. The USA also occupies significant positions in Indian exports of services, accounting for 61.4% of the volume of Indian IT products, which indicates that there are close partnership contacts between Indian suppliers and American customers. In addition, the Indian diaspora influences the American political establishment and contributes to the comprehensive development of both economic and political relations. India's participation in the Washington's *Indo-Pacific Quad* project, which it is part of along with the USA, Japan, and Australia, indicates, on the one hand, the interest of the Indian political establishment in cooperation with the USA, and, on the other, its concern about the increasing presence of China in the region.

The ASEAN countries, with which India has been rapidly increasing mutual economic cooperation during the post-reform period and concluded a Free Trade Zone Agreement in 2010, are almost catching up with the USA, accounting for 11.6% of Indian trade turnover in 2020/21 FY.

9 Social Sector

Despite India's notable successes in the global economic arena, its social problems have not been so easy to solve. Taking this into account, one should focus primarily on stimulating social development to achieve sustainable development.

Modernization of the Indian healthcare system has noticeably accelerated in the post-reform period. Great importance has been attached to opening medical institutions in rural areas, establishing mandatory two-year work in rural areas for all graduates of state medical universities, and increasing state spending on healthcare (1.8% of GDP in 2020/21 FY). As a result, life expectancy in 1951–2020 increased, on average, from 51 to 70 years. However, this is still lower than the corresponding indicators of other BRICS countries, with the exception of South Africa.

In the 2010s, the trend continued to expand the system of private medical institutions and increase healthcare spending in the private sector (2.8% of GDP in 2018/19 FY). There has also been a transition to paid patient care for a number of medical services in public medical institutions. India has already achieved some success in the field of healthcare. Thanks to the significantly increased quality of medical care, Indian hospitals have become world-famous, and a new sector—'medical tourism' (more than 100,000 foreigners come to India for treatment every year, spending about \$500 million)—has emerged and is successfully developing.

However, despite the visible achievements in certain sectors, the overall health sector still lags behind not only developed, but also a number of developing countries. Today, there are only 7.8 doctors and 7 hospital beds per 10,000 Indian residents. Given the rising price of medicine, as well as the cost of private medical services, treatment is inaccessible to most of the Indian population (in 2018, 100 million Indian households, or about 500 million people, did not have access to medical facilities). A significant part of the country still lives in unsanitary conditions. In this regard,

the *Clean India* programme has been carried out since 2014. It is aimed at ensuring public access to clean drinking water (currently only 93%), house amenities (only 70% of the population have a toilet in their house), etc. Other unresolved problems include the spread of severe infectious diseases and periodic outbreaks of epidemics, as well as high levels of infant, child, and maternal mortality.

Overcoming poverty is one of the priorities and, at the same time, the most difficult socio-economic tasks of the Indian political and economic establishment. India has made serious progress since the early 1950s (especially in the post-reform period): the poverty rate has almost halved. In just 2005/06–2016/17 FY, 271 million people escaped from poverty thanks to the accelerated development of the Indian economy and the active social policy of the state. Meanwhile, the level of poverty is still quite high. According to the Human Development Report 2019, it amounted to 21.9% in 2007–2018 according to the national calculation method, and 58% according to the international method (the subsistence minimum is less than \$3.1 per day). India remains a country where the majority of the world's poor live and where the problem of absolute poverty is still acute, and the increasing activity of the poor can aggravate social tensions in the future.

According to various estimates, from 23.6 million to 40 million people belong to India's middle class. The criterion for determining this segment of the national economy is low: monthly income is 61,500 rupees (\$870), and annual income is 738,000 rupees (\$10.4 thousand). At the same time, the average monthly salary in India is 32,500 rupees, and 60% of Indian households have an average monthly income of 10,000 rupees. However, 6.7 million people have joined the ranks of India's middle class over the past 15 years thanks to the accelerated development of the Indian economy.

Malnutrition remains another serious challenge for India. According to FAO, there were over 183 million undernourished people in India in 2015–2017, which is equivalent to 14.8% of the country's population. At the same time, the absolute number has decreased insignificantly in the post-reform period. The energy value of the Indian diet averages about 2,300 kcal. However, according to alternative sources, the daily amount of calories consumed by the rural poor reaches 1,500–1,600 at most. The traditional diet of the vast majority of the Indian population is not only characterized by an insufficient number of calories but often lacks proteins (primarily of animal origin), fats, trace elements, vitamins (primarily vitamin A), iodine, and iron. This shortage affects both the health of people, in general, and the quality of the workforce, in particular, causing a number of serious diseases.

Malnutrition among children is a serious problem in India. It is usually measured by three indicators: the number of underweight children (i.e., the discrepancy between the child's weight and age), the number of children with stunted growth (the discrepancy between the child's height and age), and the number of children with a low body mass index. Despite the acceleration of economic growth in the country over the past 25 years and the poverty reduction, the proportion of underweight children under the age of five in India was 20.8% in 2016–2018, which is still one of the highest rates among the developing countries, while growth delay can be seen in 37.9% of children.

In order to solve the problems of poverty and hunger, the government has been actively pursuing a policy of employment at the micro-level, providing food subsidies to low-income citizens since the early 1990s. In addition, a network of state-owned 'fair price' stores is widespread in India. They sell a number of necessities (rice, vegetable oil, sugar, coal, etc.) to the poor at prices 20–25% below market prices.

The level of social stratification in the country is traditionally low. In 2010–2017, the Gini coefficient was 0.357. This is much lower than in other BRICS countries.

The social insurance system in India has been developing since the 1950s and provides for free medical care (however, in 2018 only 18% of the urban population and 14% of the rural population had access to free medical care), sick leave payments (no more than 91 days per year), maternity benefits, disability, and workplace accident payments, as well as additional payments for years of service (over 5 years in one enterprise). However, the system has extremely limited coverage and applies to less than 10% of the economically active population of India, and excludes those employed in agriculture, as well as the self-employed and unemployed. These aspects of social insurance in India are handled by the State Employee Insurance Corporation.

The pension system in India is undergoing significant reform and is currently being extended not only to public sector employees but also to private sector employees. Pensions in India are accrued by 'The Employees' Pension Scheme, 1995' and are formed by deductions from employers (8.33% of employee earnings) and the state (1.16%). Gradually introduced since 2004, the national pension system provides for the accumulation of one's pension: the monthly amount of deductions by an employee is up to 10% of his earnings (but not less than 500 rupees per month), while the state credits the same amount to their account.

10 Conclusions

1. The model used by independent India during the first macro-stage of its economic development (1950–1991) was successful: industrialization laid solid foundations for the development of the country's basic industries, agricultural reforms, and the 'green revolution', while solving the problem of hunger and contributing to self-sufficiency in the food sector. However, India had to adjust its policies at the turn of the 1970s and 1980s, since they no longer met current requirements and realities. The large-scale liberal reforms affecting all spheres of the economy began in 1991.
2. Liberal reforms have been implemented progressively and included four main blocks: reducing the public sector and reforming the system of industrial enterprises of the public sector; restoring the balance of the state budget and tax reform; reforming the banking sector; and reforming the system of foreign economic relations. Growing prosperity and successful financial reforms activated the process of internal accumulation, improving the structure of budget financing, and optimizing the mechanism of investment regulation in order to

expand the country's potential, which ultimately largely reduced India's dependence on external financing. In the 1990s, the country began a serious transition from 'inward-oriented development' to active integration into the world economy.

3. The modern Indian economic system, which has been formed as a result of the ongoing liberal reforms, includes the following specific features: an orientation towards accelerated but balanced development; developing the innovation sphere; solving a complex of social problems; assigning a special place and role to the state in the economy; and active inclusion of India in the world economy.
4. The average annual GDP growth rate in the first decades of India's independent development, as a rule, did not exceed 3%, which was insufficient for catching up development. This process has noticeably accelerated with the expansion of industrialization since the late 1970s, as well as thanks to the liberal reforms undertaken in the early 1990s.
5. The main drivers of India's economic development include numerous and relatively cheap labour resources in the export industries of the manufacturing industry, as well as a high investment rate, which has almost quadrupled during the period of independent development.
6. The largest and fastest developing segment of the Indian economy is the tertiary sector. Despite the progressive shifts in the sectoral structure of GDP, agriculture still plays an important role in the Indian economy. Although its share in GDP (along with fishing and forestry) is only 14.4%, more than 40% of the economically active population is employed here.
7. Big business represented in India by so-called 'old' companies and so-called 'new' companies has significantly strengthened its position over the years of independence and is represented by 75 family industrial and financial groups ('houses'), which collectively own 1,536 companies and where 44% of all assets of non-state and non-bank economic structures of the country are concentrated. The contribution of small-scale production to GDP is 29%. The policy of supporting small-scale production in India is being implemented in parallel with extremely cautious attempts to modernize production sites since the latter inevitably reduces the demand for unskilled labour. Despite the liberal reforms being carried out, the position of the public sector is very significant.
8. The economically active population of India exceeds 700 million people, but about 70% of it is concentrated in traditional sectors of the economy, which indicates the predominance of pre-capitalist forms of employment in the country. Given the specifics of the demographic situation in India (relatively high population growth rates, a high proportion of young people, etc.), unemployment, including youth, is a huge problem for the country in the face of falling demand for unskilled labour.
9. One of the distinctive features of India's economic development is the rapid expansion of scientific and technical potential, with an emphasis on the development of ICT. Launched in 2014, the 'Make in India' initiative provides for the transformation of the country into a global engineering and industrial hub.

10. In the 1990s–2000s, the implementation of liberal reforms reduced government expenditure in relation to GDP, but its share in GDP remains very significant—about 30%. In taxation the most important trend of the last three decades has been a gradual increase in the share of direct taxes in tax revenues. In India, there is a very significant non-taxable minimum of individual income tax by the standards of developing countries, which contributes to stimulating domestic demand, as well as solving the problem of poverty in the country to some extent. In 2000–2020, the average annual inflation rate was about 4–6% due to India's tight monetary policy.
11. A growing part of goods and services produced in the country (about 30%) is supplied to the foreign market. However, the country is still a semi-open economy and works mainly for the domestic market. The only exceptions are some export-oriented industries. The involvement of the Indian economy in global value chains contributes to the gradual increase in the share of high-tech products in Indian exports. Meanwhile, due to a number of circumstances (from restrictive investment policies to infrastructure problems and corruption), India is not turning into an 'assembly shop'. At the same time, India has achieved significant success in foreign trade in services. India, with its substantial size, high rates of economic growth and capacious domestic market, is of increased interest to foreign investors. Since 2004, India has consistently held first place in the world in terms of the absolute volume of money transfers to the homeland carried out by the diaspora.
12. Despite India's notable successes in the economic development, social problems are being solved with great difficulty. Overcoming poverty and malnutrition, social inequality, providing the population with clean drinking water, the spread of serious diseases, and periodic outbreaks of epidemics have been one of the priorities of the Indian leadership throughout the entire period of its independence. India remains a country where the majority of the world's poor live and where the problem of absolute poverty is still acute, and the increasing activity of the poor can aggravate social tensions in the future.

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Abstract Achievements and challenges of economic development, as well as patterns of participation in the global economy of ASEAN (Association of Southeast Asian Nations) countries, are analysed. The chapter argues that partial industrialisation, weakness of local innovation systems, excessive dependence on foreign investment and involvement in the global value chains of Asian developed economies prevent ASEAN countries from becoming an independent centres of the world economy.

1 Introduction

The region of Southeast Asia covers 11 states of different levels of economic development. Most of them are characterised by consistently high rates of economic growth, but dependence on foreign capital and the weakness of the innovation system prevent the region from becoming an independent center of the world economy.

2 Economic Systems of Southeast Asian Countries

The colonial (for Thailand—semi-colonial) past, up to the second half of the twentieth century, as well as the diverse national, linguistic and religious composition of the region still determines the weakness of market institutions; and mechanisms of public administration contribute to corruption and bureaucracy. The countries are located in the tropics and on the equator, so thanks to the rich agro-climatic resources that allow you to get 2–3 crops a year, agriculture makes a big contribution to GDP and exports. Southeast Asia is located in the ‘Ring of Fire’ and one of the three orogenic belts of the world, where earthquakes and volcanic eruptions occur daily, and therefore the region is rich in mineral resources, primarily ore. However, the Southeast Asian

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countries do not fully use their resource potential due to a lack of national capital and technologies for geological exploration, extraction and enrichment of raw materials.

Southeast Asian countries have different forms of government, which affects their models of socio-economic development. Thailand, Malaysia and Cambodia are constitutional monarchies, Brunei is an absolute theocratic monarchy, Vietnam and Laos are socialist republics.

According to the standard of living, the countries can be divided into three groups:

- Small economies with high incomes, including Singapore (in 2020 GDP by PPP amounted to \$98.5 thousand per capita) and oil exporter Brunei (\$65.6 thousand).
- Economies with incomes above the global average—new industrial countries (NIC) of the second wave—Malaysia (\$27.9 thousand) and Thailand (\$18.2 thousand) and the third wave—Indonesia (\$12.1 thousand).
- Economies with incomes below the global average—Vietnam (\$8.7 thousand), Philippines (\$8.4 thousand), Laos (\$8.1 thousand), Myanmar (\$5.1 thousand), Cambodia (\$4.4 thousand), and Timor-Leste (\$4.1 thousand).

The main factor in the development and investment attractiveness of Southeast Asian countries is the large, relatively inexpensive and disciplined workforce. In all countries of the region, there is noticeable population growth, on average by 1.1% per year, which also means a rapid increase in domestic demand from households. Singapore, Brunei, Thailand and Vietnam are at the peak of receiving a demographic dividend (age dependency ratio of less than 50%), and Malaysia, Indonesia and Myanmar in the 2010s also entered this favourable period of development. Laos, the Philippines, Cambodia and Timor-Leste are completing a demographic transition and therefore the proportion of children in their population and, accordingly, the age dependency ratio is rapidly declining.

The economic systems of all Southeast Asian countries are characterised by a strong coordinating and guiding role of the state, therefore they are variants of state capitalism. Even Vietnam and Laos, like China, have separated the economy from ideology, and are building socialism with a market economy. At the same time, the economies of the Southeast Asian countries share the export-oriented models of catch-up development. However, the countries of the region, except for Singapore, pay insufficient attention to the development of science and education, and the creation of a diversified economy, which distinguishes them from the economic models of the NIC of the first wave (China and Japan).

ASEAN has a huge impact on the economic development of all countries in the region (chapter “[World Economy Major Trends: International Economic Integration](#)”). In order to overcome the institutional weakness of the union and deepen cooperation, three organisations have been established within ASEAN since 2015. They include Political-Security Community (APSC), Economic Community (AEC) and Socio-Cultural Community (ASCC). ASEAN is still at the initial stage of integration—it has been FTA+ since 1993. Customs duties on 99% of goods and services in mutual trade have already been reset, but a significant part of their export products have a localisation level of less than 40% and therefore do not fall under mutual duty-free trade. ASEAN is doing a lot of work to harmonise all types of economic

legislation, statistical reporting and technical standards of the member countries, which improves their investment climate and the pace of development. However, in all types of foreign economic relations, the share of cooperation among ASEAN members remains low or even decreases, since the larger economies of East Asia are nearby, diverting a significant part of the flows of goods, services and capital.

A powerful impetus for industrialisation and inclusion of all countries of the region in the global economy was the creation of ASEAN Plus Three (plus China, Japan and the Republic of Korea) in 1997. By 2020 it had de facto established the world's largest regional division of labour with a high concentration of global chains. The ASEAN countries are the main vector of the Belt and Road Initiative, which provides for the development of a unified energy, transport and information infrastructure of Southeast Asia for the subsequent expansion of Chinese global chains and markets for Chinese products.

It should be noted that about 80% of the foreign Chinese diaspora (Huaqiao, up to 45 million people) live in Southeast Asian countries, mainly in Indonesia, Thailand, Malaysia, Singapore and the Philippines. People have migrated from China over at least the past 15 centuries (primarily for developing foreign trade). It is a curious fact that after the colonisation of Southeast Asia, Europeans could not cope with the management of the region's economy, and in the seventeenth–eighteenth centuries, they had to invite the Chinese to develop domestic trade and collect taxes. As a result, the Huaqiao monopolised the position of trade intermediaries between Europeans and local peasants and feudal lords and became the de facto owners of many markets. It is estimated that the Chinese make up 2.8% of the Indonesian population, but control about 75% of private capital; 10% of the Thai population, but they own 60% of private capital and carry out 90% of investments in the national economy; 1.5% of the Philippine population and own 45% of the total private capital; 32% of the Malaysian population and own 70% of all private assets. This problem of the gap in the economic potential of indigenous nations and Huaqiao, as well as the problem of the redistribution of the exclusive economic zones of the Southeast Asian countries in the South China Sea, where China has built dozens of artificial islands and deployed its armed forces on them, destabilise the political situation in the region.

In recent decades, new problems of economic and social development of Southeast Asian countries have become more acute:

- Excessive dependence on external factors, exacerbated by the growth of protectionism in the global economy and a slowdown in the economic growth of developed countries and China.
- Weakness of the regional financial system, and a lack of a regional currency.
- Regional development imbalances both between and within countries. For example, there is a gap in socio-economic development between the mainland and the island parts of Malaysia, and between the northern and southern regions of Thailand. The most developed part of Indonesia is the island of Java (7% of the territory), where almost 2/3 of the country's inhabitants live and the population density in rural areas reaches 2,500 people/km, while on other large islands it is less than 10 people/km.

- The problem of food security, caused initially by a small land fund due to the mountainous terrain and constantly decreasing per capita, as well as low labour productivity in agriculture, which is dominated by small plots with excess labour.
- Ecological problem due to overpopulation, destruction of forests for arable land and development of mineral deposits and pollution of freshwater sources.
- The energy problem due to the accelerated growth of electricity consumption by industrial production and households, unsecured by local hydrocarbon raw materials (for example, in 2008, Indonesia left OPEC and became a major importer of oil when the Sumatran oil and gas basin was depleted).

3 Dynamics, Proportions and Efficiency of Economic Development

In 2001–2020, the Southeast Asian economy developed at an average annual growth rate of 5.4%, i.e., 2 times faster than the world economy. As a result, the share of Southeast Asia in world GDP by PPP increased from 5.03% to 6.20%, in world exports—from 5.99% to 7.45%. The leaders in average annual growth rates were Myanmar, Cambodia and Laos, i.e., the countries with the highest share of the primary sector in GDP, which have begun an active phase of industrialisation (see Table 1).

Table 1 Some macroeconomic indicators of the region

	The ratio of primary, secondary and tertiary sectors		Average annual, 2001–2020			Share in	
	Value-added, % of GDP, 2020	% of total employment, 2019	GDP growth, %	Gross savings, % of GDP	Gross fixed capital formation, % of GDP	Regional GDP, %, 2020	Regional industrial production, %, 2020
Brunei	1:58:41	2:21:77	0.87	54.7	25.1	0.35	0.70
Cambodia	22:35:43	34:28:38	7.09	19.6	19.6	0.90	0.90
Indonesia	14:38:48	29:22:49	4.91	28.4	28.3	40.0	39.7
Laos	16:32:52	61:13:26	6.82	13.6	28.6	0.73	0.60
Malaysia	8:36:56	10:27:63	4.35	31.9	23.4	11.0	11.9
Myanmar	22:36:42	49:17:34	9.39	27.4	28.5	3.4	2.8
Philippines	10:28:62	23:19:58	4.78	35.5	20.8	11.1	10.1
Singapore	0:24:76	0:16:84	4.45	44.2	25.6	6.8	8.1
Thailand	9:33:58	31:23:46	3.45	29.4	24.4	15.4	16.3
Timor-Leste	11:25:64	39:16:45	4.93	–	32.6	0.10	0.04
Vietnam	15:34:51	38:27:35	6.28	28.4	28.3	10.2	9.0

Source World bank Open Data

In all Southeast Asian countries, there was a tendency to reduce the share of the primary sector and increase the share of the tertiary sector, both in the structure of GDP and in the structure of employment. But unlike developed countries and China, the growth of the tertiary sector in Southeast Asian countries (except Singapore) began in conditions of incomplete industrialisation and insufficiently developed human capital, which could potentially lead to the insufficient competitiveness of this sector.

From 2001 to 2020, the Southeast Asian countries did not carry out such a powerful mobilisation of financial resources as was observed during the accelerated modernisation of Japan and the NIC of the first and second waves, where the gross capital formation (investment ratio) for 5–10 years reached 40% of GDP. Nevertheless, gross savings can meet the need for gross investment in all countries of the region, except Cambodia, Laos and Myanmar.

The low level of macroeconomic efficiency, at least in the primary sector, is evidenced by the strong gap between the share of agriculture in the GDP and the share of people employed in this sector. In addition, from 2001 to 2020, the gross fixed assets' growth index in all Southeast Asian countries (except Singapore and Timor-Leste) significantly exceeds or is approximately equal to (Malaysia and Vietnam) the GDP growth index, which indicates insufficient labour productivity growth. This is indirectly confirmed by a rapid growth in the number of those employed. All this indicates an extensive type of growth based on the development of capital-intensive industries. Only Singapore shows intensive growth based on knowledge and entrepreneurship factors. Numerous state corporations of Southeast Asian countries, especially the Philippines and Indonesia, are often unprofitable, which also indicates the low efficiency of their economies, or at least their public sector.

4 Business Forms

The role of public corporations in Southeast Asia's economy is great, almost all countries have "negative lists" that restrict the access of foreign capital, and even national private capital, to strategically important industries. Military coups often occur in the countries of the region and the role of the military in government is great. The top management of state-owned companies, as a rule, also includes a lot of military. Following modern trends, most unitary, state-owned enterprises re-registered into joint-stock companies and carried out partial privatisation in the twenty-first century.

National private business is closely connected with the ruling elite, and the well-being of family clans is often put above national interests, which, in turn, hinders regional economic integration due to the widespread use of measures of non-transparent, non-tariff regulation of foreign economic relations. There are also great barriers to entering business as the business climate of Southeast Asia is characterised by the need to obtain numerous permits and licences, and the complexity

of organisational forms of business, which often have no comparison in world practice. For example, in Indonesia, to create a private company there should be at least two founders, and to create a joint-stock company, there should be a director, two founders and a commissioner who should monitor compliance with the charter (in most countries one person is enough).

In some countries there is no land market, it is completely owned by the state (Vietnam and Myanmar), and in others land and real estate should belong exclusively to citizens of the country (Indonesia). However, foreign investors legally circumvent such prohibitions with the help of leasing, registration of ownership of a nominal local partner, as well as registration of the right of use, after which the formal owner of the land and real estate does not have the right to dispose of his property.

In the Index of Economic Freedom 2021, Singapore ranks first in the world and leads the group of “free” countries with the highest degree of protection of property rights, the rule of law and freedom of doing business. Six Southeast Asian countries are in the largest group of “moderately free”, and Laos, Myanmar and Timor-Leste are in the last places in the “repressed” group (along with China), which means executive control over the judicial and financial system and pricing, and weak protection of intellectual property rights.

The structure of employment and GDP is dominated by private business. Despite the presence of large financial and industrial groups belonging to both national and foreign capital, the structure of employment and GDP is dominated by small and microenterprises, individual entrepreneurs and small farmers.

5 Human Capital and Innovative Development

At the beginning of 2021, the population of Southeast Asia amounted to 668 million people, and the labour force was 328 million people. Labour resources in Singapore, Vietnam and Thailand account for about 60% of the population, about 40% in Myanmar and the Philippines and about 50% in other countries. At the same time, the vast majority of Southeast Asian labour resources are concentrated in only four countries: Indonesia (42%), Vietnam (17%), the Philippines (13%) and Thailand (12%).

The literacy rate of the adult population (persons aged 15 and older) in Southeast Asian countries is 94–96% and the proportion of children attending at least primary school (94–98%) is significantly higher than the global average (except for Cambodia and Laos); meanwhile, universal primary education has been introduced in Vietnam. However, the average teaching time is 5–9 years (only in Singapore and Malaysia it is 11.6 and 10.4 years, respectively), which is not enough to modernise the economies, and also contributes to the low value of the Human Development Index 2020 of Southeast Asian countries (0.58–0.72), in which only Brunei, Malaysia and Thailand were in the top one hundred countries of the world (0.78–0.84), and Singapore took 11th place (0.94). About 60% of children graduate from high school, and the proportion of people aged 25 and older with a university degree (at least bachelor’s)

is only 9–11%, except for Singapore (32%), the Philippines (24%) and Thailand (16%).

The share of government spending on education in Southeast Asian countries is at a relatively low level—2–4% of GDP. In the Southeast Asian countries, there are limited opportunities for the training of skilled workers, which the real sector is in great need of. The level of training in secondary specialised and higher educational institutions in the region is generally low, except for several universities in Singapore, Malaysia, Thailand and Indonesia. Universities and research centres in Southeast Asian countries conduct mainly applied research, the foundations of fundamental science are taught only in Singapore.

Most Southeast Asian countries have R&D expenditures of 0.03–0.23% of GDP, although in Vietnam this figure is 0.56%, Malaysia and Thailand—1% each, and 2% in Singapore. The number of patents registered by residents of Southeast Asian countries is minimal even in Singapore. Although the share of high-tech products in the exports of the manufacturing industry of Singapore, Malaysia and the Philippines has increased to 54–64%, Vietnam—42%, Thailand—28%, Laos—21%, however, the amount of payments to foreign holders of intellectual property rights, estimated in billions of dollars, have also increased (\$17 billion per year in Singapore). This indicates dependence on foreign technologies and inclusion on the lower floors in foreign global chains.

The ICT sector is growing at a faster pace, with which the countries of the region associate solving the problems of universal coverage of distance education, urban security and the introduction of artificial intelligence into business processes. They have 130–160 active mobile phone numbers per 100 inhabitants, and the number of Internet users in the largest states is rapidly increasing and accounts for 50–75% of the population.

6 Real Sector

The main producers of agricultural products in the region are 5 countries, which account for 92% of the area of arable land in Southeast Asia—Indonesia (36%), Thailand (23%), Myanmar (15%), Vietnam (10%) and the Philippines (8%). In terms of production in Southeast Asia, 5 predominant crops are distinguished: rice (all 5 countries are among the ten largest rice producers in the world), sugar cane, cassava, corn and soybeans. In addition, Southeast Asia is a major producer and exporter of plantation crops such as palm oil, natural rubber, bananas, mangoes, citrus fruits, coconut and other nuts, cocoa beans, coffee and spices. In general, Southeast Asia is a net exporter of food.

Animal husbandry is less developed than crop production. Poultry farming prevails by a large margin, because cattle are mainly used as a draft force, but the dairy industry has recently appeared. Seafood and aquaculture, which the region provides itself with, are of great importance in the diet of most residents of Southeast Asia.

The mining industry of the Southeast Asian countries is developing rapidly, but only the extraction of tin (Indonesia and Myanmar are the 2nd and 3rd places in the world, as well as Vietnam, Malaysia and Laos), bauxite (Indonesia, Vietnam and Malaysia), cobalt (Philippines), gold (Indonesia), manganese (Myanmar, Malaysia and Vietnam), nickel ores (Indonesia and the Philippines), rare earth metals (Myanmar, Thailand and Vietnam), tungsten (Vietnam), phosphorite (Vietnam) and potash salts (Laos) are of global importance. Thailand and Myanmar are famous for their precious stones.

The fuel and energy sector is developing at a fast pace. In 2009–2019, primary energy production in Vietnam increased by 9.7 times, in the Philippines—by 5.5 times, in Indonesia—by 4 times and in other countries of the region by 2–3 times. But the production of primary energy per capita in Vietnam is 1/4, in Indonesia 1/6 and in the Philippines 1/9 of the level of developed countries; although Malaysia has almost reached the level of developed countries, and Singapore is 3.5 times higher than this level. Coal dominates the energy makeup of the region (Indonesia ranks 2nd in the world in coal production and export), and hydroelectric power plants are important only in Laos and Vietnam. There are no nuclear power plants in the region.

Indonesia, Malaysia, Thailand, Vietnam, Brunei and Myanmar are producing oil (2.3% of world production in 2020, and gas—5.3%). Malaysia, Indonesia and Brunei occupy the 5th, 7th and 12th places, respectively, in the world in terms of LNG exports (11.8% of world exports). The development of the oil and gas industry in Southeast Asia depends on the latest technologies since most of the reserves are located on an aquatic shelf with a depth of more than 1,000 m, which affects the production cost.

The manufacturing industry of the Southeast Asian countries is represented by enterprises of almost all industries. Two groups of industries are developing at the fastest pace. The first serves local, expanding and increasingly affluent consumers—the production of food and beverages, medicines, detergents, paper, furniture and vehicles. The second is related to the development of exports; mainly assembly production from imported components of microcircuits, electronic devices, computers, telecommunications equipment, office equipment; non-ferrous metallurgy and tailoring from imported fabric, leather and accessories of clothing and shoes. Both groups depend on foreign capital, technology and trademarks. The only Southeast Asian country that produces cars of its own brand in Malaysia.

The basic industries—ferrous metallurgy, cement production, organic chemistry, oil refining and basic mechanical engineering—are developing, but a bit slower. The greatest successes were achieved by Indonesia, and especially Vietnam, which reached 15th place in the world in steelmaking (15 million tons) when the growth rate of its refining capacity in 2009–2019 amounted to 8.5% per year. Vietnam and Indonesia took the 4th and 5th places in the world in cement production. A ban on the export of unprocessed raw materials was introduced in Indonesia in 2014; it further exposed the problem of backwardness and lack of production chains: for example, extracted bauxite has to be transported to Australia, from where alumina is brought back for aluminium smelting. Even in the more developed Singapore, there are 1,834 enterprises located in the Jurong industrial zone on an area of 6.5 thousand hectares, mainly owned by foreign capital, unrelated to each other technologically

and unsecured by local basic materials. Construction, especially the construction of transport infrastructure and housing, has become a dynamically developing sector of the economy.

In the Southeast Asian countries, the service sector is actively developing, which provides the main contribution to GDP and employment, as well as the formation of small businesses. These are, primarily, wholesale and retail trade, catering and hotel business, transport, real estate transactions, information services and tourism.

7 Financial Sector

The monetary system of Southeast Asian countries is typical for developing countries. Powerful government intervention in the economy makes banks lend to unprofitable and low-profit projects, which leads to the accumulation of bad debts, which, in turn, weakens the exchange rate of national currencies.

In 2011–2020, the industrialisation of most Southeast Asian countries was carried out with the help of a credit issue, and as a result of which the volume of M2 increased, for example, in Vietnam from 100 to 180%, in Cambodia from 37 to 129% and in Myanmar from 28 to 65%. The lowest increase in M2 volume was in Indonesia—from 37 to 45%. In 2011–2020, the inflation rate in all Southeast Asian countries was in the range of 0–3%, and only in Myanmar, it was 4–9%.

Islamic banking is well developed in Southeast Asian countries (Indonesia is the largest Muslim country in the world), which, unlike commercial banks, does not create a new money supply at the time of issuing loans to legal entities, but only contributes to the effective accumulation and redistribution of financial resources already available on customer accounts. Usury and the collection of loan interest, when granting a loan are prohibited in Islam, which is why special fees of about 2.5% are provided to cover administrative expenses and loan servicing. Islamic banks put ethical standards above the commercial component, and adhere to the principle of partners' mutual responsibility for the financial risks of commercial activities; therefore, in favourable circumstances, the client, returning the principal debt, can pay the bank a certain amount in the form of voluntary bonuses. Another important characteristic of Islamic banking is its social component, which is expressed in the provision of preferential financial services for low-income citizens, and the implementation of charitable projects.

National financial development institutions operate in all Southeast Asian countries. They are the main instrument for implementing state economic policy, providing financial assistance to the development of basic sectors of the economy, introducing modern technologies and innovations, developing the institutional environment of the market economy and addressing the issues of sustainable development and environmental safety. For example, in Singapore, to financially support the modernisation process, the Singapore Development Bank (DBS Bank Ltd. since 2003) was established in 1968. In 1974, the National Fund of Singapore (Temasek) emerged. It also performs the functions of the Sovereign Wealth Fund and carries

out centralised management of state-owned enterprises. In 1981, the Singapore State Investment Company was started to develop an effective mechanism for managing national gold and foreign exchange reserves. In 2015, another fund was created in Singapore—the investment venture Banking Blockchain Fund to develop and promote modern technologies and new financial instruments, including those based on cryptocurrencies.

The most important regional institution is the Asian Development Bank, which provides loans to Southeast Asian countries up to \$19 billion per year for 25–40 years at a preferential interest rate (1–3%). The Islamic Development Bank had the greatest impact from the sub-regional, multilateral development banks on socio-economic processes of the Southeast Asian countries and the development of the financial sector.

The fiscal system of the Southeast Asian countries has typical income items (taxes prevail) and expenses, in which the share of the maintenance of the state apparatus, security and economic construction is relatively high. The budgets of the countries of the region (except for Singapore) are reduced to a deficit that does not exceed 2–5% and is covered by domestic and foreign loans.

The securities market is successfully developing in the largest economies of the region. So, in 2020, the market capitalisation of shares amounted to 192% of GDP in Singapore, 130% in Malaysia, 108% in Thailand, 76% in the Philippines, 69% in Vietnam and 47% in Indonesia.

8 External Sector

Trade in goods and services remains the main form of the Southeast Asian countries' participation in international business, even though in the 2010s the average annual growth rates of exports and imports slowed down, and in 2020 even showed negative dynamics. The volume of foreign trade in goods has reached \$2.8 trillion, the main foreign trade partners are China, the USA, the EU, Japan and the Republic of Korea, which account for 52% of trade. Another 22% is regional trade within ASEAN. Exports of goods traditionally have a positive balance, while exports of services have a negative balance. Tourism accounts for up to 50–80% of exports of services, while transport and insurance services predominate in imports.

Merchandise exports of Southeast Asia in 2020 amounted to \$1.41 trillion, with 92% of exports accounted for by five leading countries—Singapore, Vietnam, Malaysia, Thailand and Indonesia (Table 2). A significant part of Singapore's foreign trade (52%) is re-export, which does not lose relevance in the conditions of protectionism and sanctions. Despite the wide range of export products, four types of Southeast Asian participation in the international division of labour can be distinguished, while large countries simultaneously participate in several types of it (see Table 2).

The first type is the supply of agricultural raw materials and products to the world market. Thailand, Indonesia, Vietnam and Malaysia occupy 1st, 2nd, 4th and 5th

Table 2 Merchandise exports, 2019

	Volume, \$ billion	Share of the leading importer, %	Share of ASEAN member countries, %	Share of agricultural products, %	Share of fuel, %	Share of machinery and equipment, %	Share of consumer goods, %	Leading article, %
Brunei	7.0	Japan-32	35	0	91	3	1	Oil&gas-83%
Cambodia	14.8	USA-25	9	6	0	8	77	Clothes-50%
Indonesia	167.7	China-15	25	29	20	14	13	Coal-11%
Laos	5.8	Thailand-46	61	44	23	8	7	Electricity-23%
Malaysia	238.1	China-14	29	12	15	45	11	PCB&electronics-30%
Myanmar	16.9	China-32	24	32	20	5	34	Gas-20%
Philippines	70.9	USA-15	15	13	2	68	8	PCB&electronics-50%
Singapore	390.3	China-13	29	5	12	49	9	PCB&electronics-30%
Thailand	233.7	China-12	26	19	4	41	10	PCB&electronics-10%
Timor-Leste	0.02	Indonesia-25	H	89	2	4	3	Coffee-14%
Vietnam	264.6	USA-21	9	11	1	43	29	PCB&electronics-30

Sources: ASEAN Statistical Yearbook, 2020; UN 2020 International Trade Statistics Yearbook <https://comtrade.un.org/pb/downloads/2020/VolII2020.pdf>

places, respectively, in the world in the export of natural rubber, together with other Southeast Asian countries (the region accounts for 80% of world exports of this commodity). Indonesia, Malaysia and the Philippines occupy 1st, 2nd and 5th places in the world in the supply of vegetable oils, primarily palm oil (76% of world exports). Thailand, Vietnam and Myanmar occupy the 2nd, 3rd and 7th places in the world in rice exports (29%). Thailand ranks 3rd in the world in terms of sugar supplies. Vietnam and Indonesia occupy the 4th and 5th places in the world in the export of seafood and spices. Vietnam ranks 3rd in the world in the export of silk, 5th in coffee and 7th in the export of fish, fruits and nuts.

The second type is the supply of mineral resources to the world market. Indonesia ranks 2nd in coal exports (18% of world exports), 1st in fuelwood (16%) and 7th in copper ores. Malaysia, Indonesia, Myanmar and Brunei export liquefied natural gas (17% of world exports). Indonesia, Malaysia (1st and 2nd places) and other Southeast Asian countries export tin (52% of world exports). The Philippines and Indonesia occupy the 2nd and 5th places in the export of nickel ores (26%). Laos can also be included in the same group as it receives 23% of export revenue from the sale of hydroelectric power to Thailand and Vietnam.

The third type is specialisation in the labour-intensive production of clothing, footwear, leather and furniture industries based on foreign design, equipment and materials. Vietnam took 2nd place in the world in the export of shoes (15% of world exports), 3rd and 4th in the export of men's and women's clothing, respectively, 4th in the export of furniture and 5th in travel accessories. Indonesia and Cambodia also succeeded in exporting shoes, and Myanmar and Cambodia (more than 50% of the country's exports) in exporting clothes.

The fourth type is specialisation in capital-intensive operations for assembling mechanical engineering products, especially electronic ones, requiring more skilled labour. Vietnam took 3rd place in the world in the export of telecommunications equipment (8% of world exports) and 4th in televisions (5%). Thailand took 6th place in the supply of climate equipment and trucks, 7th place in household electrical appliances and motorcycles and 8th place in computers and office equipment. Exports of Indonesia, the Philippines and Malaysia are growing in the same commodity groups. Printed circuit boards (PCBs) and electronic components have become important items for both export and import in these countries. Singapore occupies a separate place in Southeast Asia with its diverse export of engineering and chemical products.

If we analyse the international capital movement, Southeast Asia is a net recipient of foreign capital; mainly direct investments, as well as loans and credits from the IMF, IBRD, ADB and developed countries, especially the USA and Japan, and, as a rule, on preferential terms. The States of the region accounted for up to a quarter of all financial resources provided annually to developing countries, which contributed to solving some major problems in the development of the national economy, for example, creating infrastructure, improving education and health systems and forming a modern energy base. At the same time, the widespread presence of foreign capital leads to a large outflow of their profits abroad. For example, Indonesia traditionally has a positive balance of foreign trade in goods, but the entire current account balance is negative due to the annual withdrawal of profits from FDI.

In 2011–2020, the annual inflow of FDI amounted to \$112–180 billion. In 2020, Southeast Asian countries accounted for 13.6% of global FDI (\$136 billion). FDI inward stock in the region in 2020 reached \$2,914 billion (7.0% of the world), an increase of 11 times compared to 2001. The main areas of application of foreign investments include the manufacturing industry (electronic, electrical, chemical, food, clothing, footwear, etc.), as well as mining and mainly oil and gas. The leading investors in the region are the EU countries, Japan, China, South Korea and Singapore, and the recipients of FDI are Singapore, Indonesia, Thailand and Malaysia.

The more developed Southeast Asian countries no longer need large-scale gross investments, so they use part of their gross savings to export capital (Singapore, Malaysia and Thailand). In 2020, the outward FDI of the Southeast Asian countries amounted to \$61 billion (8.3% of the corresponding global indicator), and their outward stock FDI exceeded \$1,671 billion (4.3% of the world), an increase of 16 times compared to 2001.

Within the framework of regional labour migration, two groups of countries can be distinguished—the one supplying and the one receiving labour. The first group includes Laos (1 million people emigrated from the country), Cambodia (1 million people), Myanmar (2.2 million people), Vietnam and Indonesia (1.3 million people each). The host countries in Southeast Asia, which account for 90% of internal labour migration, are Thailand (3.7 million people), Malaysia (1.5 million people) and Singapore (1.3 million people). In Singapore, the majority of migrants are Malaysians (45%), in Malaysia—Indonesians (43%), and in Thailand—immigrants from Myanmar (51%). The historical, cultural and religious proximity of Malaysia, Indonesia and the Philippines on the one hand, and Thailand, Myanmar, Laos and Cambodia, on the other, determines the direction of migration flows. Most of the migrants are employed in the household, construction, agriculture and labour-intensive industries. The bulk of labour migrants in the region are semi-skilled and unskilled labour (87%). In addition, there is a huge illegal migration throughout Southeast Asia.

9 Social Sector

The number of poor in Southeast Asia is declining, but very slowly. In 2017–2018, about 20% of the population lived below the national poverty line in Myanmar, Laos and the Philippines, and about 10% in Cambodia, Indonesia, Thailand and Vietnam. In 2018, the share of the poor with incomes of less than \$1.90 per person per day was 21% in Laos, 6% in Myanmar and the Philippines, 4% in Indonesia, 2% in Cambodia and Vietnam and 0% in Singapore, Brunei, Malaysia and Thailand. In many countries of the region, social insurance covers only 4–10% of the population.

Over the period 2000–2017, the prevalence of malnutrition in Southeast Asian countries decreased from 21.9% to 9.9% of the population, from 114.5 to 61.2 million people. The energy value of nutrition has increased in all Southeast Asian countries since the beginning of the twenty-first century but is still lower than in East Asia.

Healthcare expenditures in Southeast Asian countries account for 4.5–8.5% of budget expenditures, except for Vietnam (10%) and Thailand and Singapore (14% each), or 0.7–2.0% of GDP (Vietnam 2.3% and Thailand 2.7%), which is not enough. The infant mortality rate (up to 5 years) has sharply decreased to the level of developed countries in Singapore, Thailand and Malaysia (2–9‰), is slightly above the global average in Laos, Myanmar and Timor-Leste (44‰), while in other countries it is slightly below the global average (21–26‰).

The problem of income differentiation is quite acute in all Southeast Asian countries. For 2009–2017 the Gini index decreased markedly in Thailand (from 0.49 to 0.45), Malaysia (from 0.44 to 0.40), Myanmar (from 0.35 to 0.30) and Cambodia (from 0.34 to 0.29). In Indonesia, on the contrary, this index increased from 0.37 to 0.39, in Singapore it remains at the same high level of 0.46. The growth in the number of entrepreneurs and the formation of the middle class has noticeably accelerated, especially in Singapore, Indonesia, Thailand and Malaysia.

The official unemployment rate is 4–6%, but these figures are questionable, since a significant part of the population lives in overpopulated rural areas, while, according to estimates, the share of shadow employment in cities exceeds 44%.

10 Conclusions

1. The economic models of the Southeast Asian countries are characterised by the strong coordinating and guiding role of the state, therefore they are variants of state capitalism. Furthermore, the economies of the Southeast Asian countries are characterised by high growth rates and belong to export-oriented models of catch-up development. The countries of the region (except for Singapore) pay insufficient attention to the development of science and education, and the creation of industries for the production of structural materials, which distinguishes them from the development models of Japan or China.
2. A significant part of the exports of Southeast Asian countries has a localisation level of less than 40%, and therefore does not fall under the duty-free trade of the ASEAN FTA. In all types of foreign economic relations, the share of cooperation among ASEAN members remains low or even decreases, as the larger economies of East Asia are located nearby. Therefore, within the framework of ASEAN Plus Three, the world's largest regional division of labour has developed.
3. The accelerated growth of GDP and exports is extensive, based on a huge increase in investment and employment. Only Singapore shows intensive growth based on knowledge and entrepreneurship factors.
4. The structure of employment and GDP is dominated by private businesses, small and microenterprises and small farmers. 80% of Huaqiao are concentrated in Southeast Asia and own more than half of the capital in some countries.
5. In the Southeast Asian countries there are limited opportunities for the training of skilled workers, which the real sector is in great need of. The proportion of the

poor and the level of social inequality is high. The vast majority of the population is not covered by social insurance.

6. Two groups of industries are developing at the fastest pace: 1) the one serving local, rapidly expanding and increasingly wealthy, consumers and 2) the one related to the development of exports. Both groups depend on foreign capital, technology and trademarks. The basic industries that are most important for achieving national industrial sovereignty are developing more slowly, but Indonesia, and especially Vietnam, have achieved the greatest success.
7. The industrialisation of most Southeast Asian countries was carried out based on a credit issue, as a result of which the volume of M2 money increased significantly. Islamic banking is developed in Southeast Asia, and the state financial institutions of development play a great role in its development. Budget deficits are run, and the inflation rate is within 3%.
8. There are four types of specialisation in the international division of labour in Southeast Asia: (1) agricultural raw materials and the products from it, (2) mineral resources, (3) labour-intensive products of the clothing, footwear, leather and furniture industries and (4) capital-intensive products of mechanical engineering, especially electronic. All industries depend on foreign technologies, equipment, design and materials. A separate place in the export of Southeast Asia is occupied by the chemical industry of Singapore. Southeast Asia occupies a prominent place in global FDI, and the most developed countries in the region are rapidly increasing their FDI volumes and are accepting more and more migrant workers from poor Southeast Asian countries.

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The Near and Middle East



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Abstract The chapter focuses on the major economies of the region. Experts on Arab, Turkish, Iranian, and Israeli economies analyse the principal aspects of these economies as well as their specifics.

1 Introduction

All the countries of the Near and Middle East, except Israel, are less developed economies, but they differ greatly from each other in terms of economic indicators and economic systems. Nevertheless, all countries of the region (again, except Israel) are united by the backward structure of the economy, monocultural specialisation and high dependence on the inflow of foreign capital and knowledge.

2 Economic Systems in the Region

In most countries of the region, there is an intertwining between the secular model of development adopted by the world, in which economic, political, and cultural life is regulated based on non-religious norms, and the Islamic model of development based on Sharia, i.e., religious prescriptions for all aspects of life.

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2.1 The Egyptian Model

In the 1990s, neoliberal economic reforms started in the country, within the framework of which the state began to play a more modest role in economic life. The reform programme included measures for financial stabilisation, elimination of unprofitable state-owned companies, and more substantial privatisation of public sector enterprises. The currency legislation was reorganised to liberalise and unify it. The tourism sector, as well as light and food industries were privatised. In industrial policy, emphasis was placed on import substitution, creating the foundations of mechanical engineering, developing the agro-industrial complex to reduce food dependence, and, above all, on developing consumer goods production. At the same time, state subsidies for all goods except medicines and essential foodstuffs were abolished. As a result of the reform, Egypt managed to maintain a fairly high GDP growth rate by the standards of the region—4.6% in the 1990s and 5.5% in the first decade of the twenty-first century. However, this rate declined to an average of 4.2% in the following decade.

Up to now, two-thirds of bank assets are owned by state. The “single tax ceiling” reduced to 22.5% is still high by the standards of less developed economies, and high customs tariffs (an important element of state revenues) on imported raw materials, semi-finished products, and parts cause a problem for local businessmen, and as a result, Egypt lags far behind its rivals in terms of competitiveness of finished products.

Another weakness of the Egyptian economic model is a strong dependence on foreign aid. The United States alone has provided more than \$60 billion in gratuitous aid over the past 30 years, including military supplies. Assistance from other developed countries and international organisations has also been received at about the same level.

After the “Arab Spring” in 2011, and the subsequent unrest in the country, Egypt is no longer the leader of the Arab world when it comes to politics and, especially, economy; its GDP growth rates have decreased, and long-standing problems related to unemployment, social security, and public debt have been exposed. However, the country as a whole still has objective prerequisites for leadership in the Arab world: a large and sufficiently skilled workforce, a unique geographical location (Suez Canal provides about 12% of world trade), and a rich historical and cultural heritage.

2.2 Models of the Persian Gulf Monarchies

These countries, united in The Gulf Cooperation Council led by Saudi Arabia and the rapidly developing United Arab Emirates, have become active participants in international business since the middle of the twentieth century thanks to the exploitation of their giant oil and gas deposits. Besides this, they found themselves in an exceptionally favourable position in terms of transporting fuel to consumers in Europe and Asia. Today, these countries account for almost one-third of the world’s proven

reserves of liquid fuel and its exports, which allows them to be the masters of OPEC, on whose position the conjuncture of world oil prices still largely depends.

In the monarchies of the Persian Gulf, a special kind of capitalism has developed. It is rental capitalism, in which high rates of economic growth are not so much a consequence of the development of all sectors of the economy, as a consequence of the huge revenues from mining rents realised through exports, which allows this group of countries to implement elements of a sustainable development strategy based on high government spending. That is why the high rates of their economic growth (in Qatar, for example, they reached 26% per year) do not always reflect the adequate development of all sectors of the economy, but only those related to rental income (primarily the financial and social sectors).

In these countries, the spirit of Islamic ideology and its corresponding business ethics are strong when making economic decisions. Such a model shows its viability and suits its population. The stay and activities of immigrants are strictly limited, and they cannot have any significant impact on local society. Nevertheless, the monarchies of the Persian Gulf have stepped up the modernisation of their economy in recent years, including increasing its openness.

After the “Arab Spring”, economic and political leadership in the Arab world gradually shifted from Egypt to Saudi Arabia. Saudi Arabia and the United Arab Emirates have taken leading positions among Arab countries in the region, especially in the financial and external sectors. The Kingdom not only produces 20% of the GDP of Arab countries but is also among the 20 largest economies of the world. According to UN experts, Saudi Arabia’s natural resources are estimated at \$34 trillion, and 17% of the world’s oil reserves are concentrated there. Saudi Arabia’s GDP in 2021 reached \$1.8 trillion in PPP terms (\$49,552 per capita). FDI stock in the country amounted to \$261 billion in 2021. The share of industries not directly related to oil in GDP production increased to 63%, including manufacturing industry which share reached 7%. The main achievements of Saudi industrialisation are the speed and quality of work performed, the high level of technologies, as well as the large scale of projects implemented. Enterprises are built according to a single long-term plan by whole industrial complexes with pre-prepared production and social infrastructure.

Other monarchies of the Persian Gulf, relying on their solid and regular financial income, also focus on expensive and promising projects. These include the banking sector, desalination of seawater and the development of agriculture based on it, and tourism in all its diversity. As a result of the reforms, the deregulation of some sectors of the economy, the liberalisation of markets, and a shift in emphasis towards the development of local entrepreneurship began. This allowed the partial repatriation of capital previously placed in Western countries to begin and the creation of attractive conditions for domestic investment opportunities. Qualified specialists, who, after completing their studies in foreign universities previously preferred to find a job in the West, also began to return to their homeland.

2.3 *The Iranian Model*

Back in the 1930s, an economic model with strong state participation developed in Iran. As a result of the reforms of the 1960s and 1970s, which were called the “White Revolution”, a model was formed focused on the active attraction of foreign capital with its advanced technologies, and even wider participation of the state in the economy. As a result, annual GDP growth rates exceeded 10%, new modern industries appeared, and modern laws on labour, social security, workers’ participation in profits, and compulsory secondary education were adopted. But these changes in socio-economic life were not accompanied by any noticeable expansion of political freedoms. As a result, a rigidly centralised economic model was formed, in which the Shah’s court, domestic entrepreneurs, and foreign companies close to it occupied decision-making positions.

This model began to fail by the end of the 1970s. GDP growth rates began to slow down, and in 1978 economic life was paralysed as a result of mass popular unrest, demonstrations, and strikes. After the fall of the monarchy in 1979, the Shiite clergy came to power, and an alternative to the Shah’s model, the so-called Tauhid model of the economy (Tauhid—monotheism), began to form, which put forward the interests of the ummah (Islamic community), ethical values, support for disadvantaged segments of the population, social forms of ownership, and the introduction of Islamic norms into the economic activity. The main features of this model were self-reliance, the nationalisation of foreign and large private property, and the formation of Islamic foundations, to which a significant part of the confiscated land and industrial property was transferred. Banks were converted to Islamic principles of operation. Strict currency controls were introduced and fixed prices were set for many goods. The statist model of the authoritarian type was restored but under the conditions of Islamic rule. Such a semi-autarkic Islamic model helped overcome the consequences of the revolution and the eight-year war with Iraq (1980–1988) but did not bring anything fundamentally new to the factors of economic growth.

After the end of the war with Iraq, the economic course changed, and from the end of 1989 elements of the neoliberal economy began to be introduced. They included the weakening of state regulation, the liberalisation of currency and foreign trade regulation, gradual rejection of direct interference in pricing, privatisation, the attraction of foreign capital, the creation of free economic zones, and the development of export manufacturing industries. The transition to a policy of deregulation allowed the country to get out of the protracted economic crisis, increase the rate of investment, and economic growth (up to 5–6% per year).

After the law on attracting and protecting foreign investments was adopted in 2002, the participation of these companies in the economy increased markedly, and economic relations with European countries intensified. Unfortunately, then international sanctions initiated by the West against Iran’s nuclear programme began to influence the further evolution of the Iranian model. The sanctions that restricted the purchase of Iranian oil and disconnected Iranian banks from the SWIFT were particularly severe. The impact of these sanctions was ambiguous: on the one hand,

they gave rise to a tendency to increase state intervention in the economy; on the other, they were an incentive to accelerate its liberalisation. In particular, one of the Iranian responses to sanctions was the implementation in 2010 of a radical liberal measure—the abolition of subsidies for petroleum products, natural gas, electricity, water, public transport, and bread. However, at the same time, this measure was accompanied by social protection—compensation payments to the poor were made at the expense of a special fund, and producers of the goods for which subsidies were reduced were supported.

The Western sanctions regime has also caused other significant adjustments to the formation of the Iranian economic system. The sanctions forced foreign firms to leave the country, which were replaced by domestic state and private companies. The concept of the “economy of resistance” was developed, in which the policy of orientation to private entrepreneurship began to dominate more and more. To this end, a programme of privatisation of 80% of state property, including the banking system, was adopted. The government made it a priority of economic policy to support high-tech companies, primarily engaged in the production of dual-use products, and the trend towards militarisation of the economy was intensified. A significant place in the economy was occupied by companies owned by Islamic Revolutionary Guard Corps (Pasdaran).

However, this programme did not bring the expected result. After the fall in GDP as a result of sanctions, Iran’s economy entered a stage of economic instability, when years of economic growth alternated with years of economic decline (stagflation).

2.4 Turkish Model

Since its creation in 1923, the Republic of Turkiye has tested almost all the main models and strategies of economic development, including etatism, import substitution, and neoliberal models. The most significant influence on the nature of Turkiye’s economic development was exerted by the principles of etatism introduced after the world crisis of the 1930s, which were largely based on the traditionally high role of the state in the Turkish economy. The state took control of the regulation of foreign exchange market and foreign trade, and actively intervened in the regulation of the domestic market. State-owned companies were created. They took monopoly in most industries, largely intending to create import-substituting industries.

After 1960, in Turkiye started a twenty-year period of import substitution, active industrialisation and construction of infrastructure with the help of the state, combining etatism and orientation to activating the private sector. Since 1980, Turkiye has been moving to a strategy of more active implementation of market principles. Back in 1963, the process of joining the EU began, and the list of the main conditions for its accession included carrying out neoliberal reforms. But the reform of the economic model faced great difficulties and was accompanied by economic crises. At the same time, pro-Islamic parties have intensified their activities in recent decades

(and as a result, the Islamist Justice and Development Party came to power in 1995–1997 and still holds it). However, despite the widespread use of Islamic rhetoric in election programmes, the economic course is invariably conducted within the liberal framework of market relations and is aimed at full integration into the world economy.

The shift from the import-substituting model to an export-oriented one has strengthened the role of external factors in development. Accession to the WTO and especially the customs agreement with the EU in 1995 (on industrial goods) accelerated modernisation processes and increased the competitiveness of Turkish products on the world market. At the same time, trying to join the EU, *Türkiye* forced neoliberal modification of its economic model. Nowadays, import duties do not exceed 4% of GDP, and export subsidies (tax refunds, and support for exporters)—1% of GDP, which indicates a high degree of liberalisation. As a result, the export quota has increased from 5.5 to 23% since 1980.

2.5 *The Israeli Model*

In the Middle East, Israel is a kind of enclave, being the only developed economy. The peculiarity of the Israeli economic system is that the state, quasi-governmental institutions and public organisations have become its backbone and engine. As a result, in Israel, in the first decades of its existence, a special structure of a mixed economy developed, where, along with the dominant private sector, extensive entrepreneurial activity was carried out by the state, trade unions and many other public organisations. There was a relative stability in the ratios of the three sectors at the macroeconomic level: the private sector accounted for (with small deviations) half of the country's GDP and employment, and the public sector and the trade union-cooperative sector accounted for approximately the other half in equal proportion. The reform of the three-sector economy began only in the second half of the 1980s when privatisation was recognised as the main direction of property reform.

According to its main characteristics, the Israeli version of the mixed economy differs markedly from the models created in the post-war period by Western countries, although it has absorbed many of their features. In this small migrant country with a low initial level of economic development, a mixed economy was created, which was a kind of symbiosis of a neo-etatist model and a local variant of centralised consent (consent of major social groups) with the inclusion of an unusually developed military-economic component.

Corporatism has become an important component of the socio-economic model, within which regulation is carried out in the form of “tripartism”, i.e., the coordination of their group interests by three participants—the government, business unions represented by the Association of Industrialists of Israel, and the national trade union *Histadrut*. So-called “package agreements” are regularly concluded between the three parties, which determine, at the national level, the size of wages and the degree of

social protection, as well as the measures aimed at achieving maximum employment, economic growth, and financial stability.

In terms of the level of independence of economic agents, Israel is significantly inferior to most OECD countries. The high level of monopolisation and protectionism prevailing in the country limits the interest of economic agents in modernisation. According to the Index of Economic Freedom, Israel has long been ranked in the end of top forty countries of the world. Liberal reforms started only four decades after the state was established in 1948.

At the same time, according to the WEF, since the late 1990s, Israel has moved from the top thirty most competitive countries in the world to 16th place at the end of the last decade and had the highest position among the countries of the Middle East. Lagging behind the countries at the top of this list in terms of public debt, budget deficit, and foreign trade, Israel is noticeably ahead in terms of technological development, especially in terms of innovation capability, as well as high-quality healthcare and tertiary education.

Despite all the impressive, positive results achieved by Israel in the economic sphere over a relatively short historical period, the country has not yet managed to completely overcome some economic problems, both inherited from the era of “catching up development” and those that have arisen in recent years. Among them: a high concentration of production and capital, feeding monopolistic tendencies, a certain lag in the field of economic activity of certain segments of Israeli society, and some problems in the innovative economy.

3 Economic Proportions, Growth, and Investment

The sectoral structure of most Arab countries is characterised by a high share of the service sector (more than 50%), where the majority of the economically active population is employed. Industry and construction account for 35–40%, and agriculture—from 10 to 15% (although a much larger part of the population is usually employed here). In the Arab states, economic development has been accompanied by other imbalances in recent decades. For example, the successful expansion of the industrial potential was accompanied by low rates of agricultural production, which resulted in a strong dependence on food imports.

An example of macro-sectoral imbalances can be Egypt. Its industry sector (which employs 17% of the economically active population), although developing at a faster pace, is still dominated by the food and light industry. The country’s agriculture, which employs 32%, accounts for 15% of GDP, and its major problem is that the total land area suitable for cultivation is less than 4% of the country’s territory. In many ways, therefore, more than half of the food supply is imported.

In the industrial structure of the economy of the Persian Gulf monarchies, there is a skew in the direction of oil and gas production and its processing. The countries are clearly in a hurry to make the most of their unique natural resource, given the ongoing decarbonisation of the world. But the declared diversification is being carried

out slowly. Only Saudi Arabia can boast the greatest results: the number of industrial enterprises there has crossed over three thousand. Nevertheless, the share of the manufacturing industry in the GDP of the Gulf countries has reached 10%, and Saudi Aramco changed traditions and took part in the construction of powerful (1.5 GW) solar and wind power plants for the first time.

The dynamics of Iran's economic development largely depend on the sanctions regime and the situation on the world oil market. During periods of rising oil prices, Iran's economic growth rates are usually higher than Turkiye's. However, if we remove the influence of oil prices on economic dynamics, then Turkiye's growth rate is higher than Iran's. The Iranian economy depends not only on oil prices but also on Western sanctions aimed at limiting purchases of Iranian oil. At the same time, Iran has managed to maintain the rate of investment at an even higher level for a long time (32% in 2018), although privatisation has reduced the share of state on investment down to 1/6. In general, extensive development factors prevail in Iran—the share of investments in construction constantly prevails over the share of investments in machinery and equipment, and this is typical for both the public and private sectors.

Turkiye's economy has shown a fairly high growth rate in the last two decades—about 5%. It was only in 2009 that their sharp decline was observed, and in 2020, against the background of the pandemic, the growth rates, although slowed down, were not negative.

Israel's economy is developing at a good pace for a developed economy—about 3.2% on average in 2001–2010 and about the same in 2011. In 2021, the investment rate was 23% of GDP. At the turn of the 1980s and 1990s, thanks to a set of measures, in particular, partial demilitarisation, financial stabilisation, the structural change of the economy, increasing its openness and institutional reforms, the long-term trend of extensive growth reversed, and a large-scale intensification began, which is confirmed by data on a decrease in labour, capital, and material intensity of production, the growth of its knowledge intensity, and improvement of the structural proportions of development.

Labour productivity here is even slightly higher than in Japan. In turn, this is largely a consequence of the high productivity in the service sector where such traditional service sectors as transport and communications, trade, catering, hotel business, and household services, have lost their positions to modern services (marketing, leasing, engineering consulting, and management services). Israel was gradually turning into one of the main financial centres of the Near East.

4 Business Structure and Economic Policy

In the Middle Eastern world (except Israel), the property is often concentrated in the hands of the so-called bureaucratic bourgeoisie, whose source of power and prosperity is political power and state property. The characteristic features of such a model are unrestrained administration. Although such a model corresponds to

the traditions and way of life of the Near and Middle Eastern society, in reality, it suppresses the entrepreneurial initiative and reduces economic efficiency.

Nevertheless, in the Arab countries, against the general background of the primacy of the state which has historically developed due to the weakness and disorganisation of the bourgeoisie, the authorities are increasingly supportive of private entrepreneurship, both domestic and foreign. As a result of the economic reforms carried out in the 1990s, the share of the private sector, for example, in Egyptian GDP rose to 70%, and it now accounts for three-quarters of investment. However, the main problem of the Egyptian economy, especially its industry, is low competitiveness. This is largely a consequence of the fact that in the private sector, enterprises with less than 15 members of staff produce two-thirds of the entire country's products.

In the economic policy of the Persian Gulf monarchies, which are developing largely according to the same scenario, the privatisation of state-owned enterprises is declared a "strategic choice". Today, however, the private sector's share of the GDP ranges from only 35% in Saudi Arabia to 25% in Kuwait. At the same time, government officials of the Gulf Cooperation Council countries can combine service with personal business. They are provided with access to cheap loans, permits are freely issued for organising industrial zones, and customs duties on their import of capital equipment, spare parts, and some types of raw materials are cancelled. However private capital is very cautious; it operates mainly in the form of trading houses and is concentrated in trade and speculative operations, and also prefers to invest in state-owned companies. The practice of creating free economic zones, i.e., areas where foreign investors are allowed to conduct business without the participation of a local partner, is becoming increasingly popular.

Special mention should be made of the fact that the source of law in the countries of the Persian Gulf is the Qur'an and its religious interpretation. Here, the advantage of ethical values over material values is strongly emphasised, and the sinfulness of money-grabbing, usury, corruption, and unfair ways of enrichment is condemned. At the same time, the stimulation of the direct equity participation of financial capital in projects is encouraged. Such an Islamic business ethic supports private property and market competition, but at the same time strictly monitors the fair distribution of benefits. It is believed that all resources belong to God, who gave them to man for temporary use, so the user must treat natural resources carefully and rationally, preserving nature for future generations. Islam encourages a person to increase his material wealth, and use it for the benefit of society. According to Islam, a person, being an owner, is interested in increasing his wealth, which is the main factor of economic growth. It is believed that state intervention in the economy should have its limits, it cannot encroach on the right of a person to have freedom of choice. Globalisation and the penetration of European economic theories and financial institutions into the Gulf countries have made significant adjustments to their economic practices. However, the reforms carried out in recent years have been cautious and gradual. The state and society in the Arabian monarchies as a whole are not ready for the full acceptance of Western-type market institutions and are trying to design their economic models to comply with the laws and age-old traditions of Islam.

In Iran, as a result of the nationalisation of banks, and large private and foreign property carried out after the Islamic Revolution, the leading positions in the economy have long been occupied by the public sector. Part of the nationalised property was transferred to Islamic foundations (waqfs). However, the current economic policy provides for the privatisation of large-scale property in industry, banks, and insurance companies. The task has been set to leave no more than 20% of the property in the hands of the state. To boost private entrepreneurship in Iran, there is a programme for the development of free economic zones and special economic zones, most of which have been created on the coast of the Caspian Sea and the Persian Gulf, as well as on the borders with neighbouring countries.

Today, the main place in the business structure is occupied by large companies represented on the Tehran Stock Exchange and the Fara Bourse Securities Exchange. At the same time, cross-ownership of shares is widespread in the Iranian model of corporate governance of large businesses, which makes it difficult to analyse the ownership of companies by the final beneficiaries. The Islamic Revolution Guard Corps (Pasdaran) occupies a special place in the structure of large Iranian businesses, which is currently not only the most powerful military structure in the system of the country's armed forces but also a powerful economic structure. As a result of privatisation, his company Khatam al-Anbiya became the largest corporation using state loans in construction, industry, oil and gas development, and the financial sector—through shares of acquired companies.

To support SMEs in Iran, programmes are being implemented to form special industrial zones and industrial centres. In addition to modern forms of SMEs, Iran retains such a medieval organisational form as *sinf*s. Under the control of the *Sinf* Chambers, 15 thousand *sinf*s are currently operating, uniting artisans and merchants according to the sectoral principle. For the most part, they have turned into trade guilds, which are joined by artisans, as well as small enterprises in the service sector. *Sinf*s form the core of the city bazaars, which continue to be a barometer of economic and political life in Iran.

If during the Shah's period the property and the number of waqfs gradually decreased, then after the establishment of the Islamic Republic of Iran, their number began to grow. Now there are several hundred thousand of them. The largest waqf of the country and the Near and Middle East is the Astan Quds Razavi in Mashhad, which has property not only in Iran but also in other countries, for example, Pakistan and India. It owns large landholdings, manufacturing companies, hospitals, a university, madrasahs, sports facilities, a special economic zone and an international airport.

A significant place in the Iranian economy is occupied by semi-state charitable foundations (*bonyads*), created after the revolution based on nationalised property. In recent years, the Setad Foundation (*Setad-e Ejray-ye Farman-e Emam*—the Headquarters for the Execution of the Imam's decrees) has become increasingly influential economically and religiously, which, according to some estimates, has turned into a large holding company with a capital of more than \$100 billion. This fund is partially financed by the Islamic tax—*khums* (a fifth of the income). *Bonyads* and traditional waqfs, as corporate property of the clergy, are organically integrated into the socio-economic structure of Iran, occupying an intermediate position between the private and public sectors.

In Türkiye, micro, small and medium-sized businesses are very well developed, accounting for up to 74% of all employed and approximately 54% of GDP. A characteristic feature of Turkish entrepreneurship is the prevalence of family business—up to 90% of companies are family firms. The business environment is greatly influenced by foreign capital, which became especially active after the adoption of the Law on Foreign Investment in 2003, which abolished restrictions on it. However, it still has problems associated with access to credit (due to the high interest rate), low labour productivity, and low innovation activity.

The business structure in Israel and its economic policy developed differently. As mentioned above, in the early years of Israel's existence, the social-democratic orientation of the country gave rise to a special type of mixed economy—a three-sector model. The transition to a bourgeois policy also changed the model—through privatisation and an active fight against inflation, it gradually turned into a neoliberal one, i.e., with the dominance of private property. By 2020, the aggregate share of the public sector in GDP decreased to 30%. In 2015–2019, this model showed good results for a developed economy—the GDP rate tends to be 3.5–4.0%, and inflation fluctuated between 1% and minus 1% (Israeli inflation rates are lower than the average indicators of developed countries).

However, the inertia of the long-term imbalance of the state-market ratio contributes to the preservation of a strong monopolisation of the Israeli economy, although the purposeful course of the state towards privatisation and decentralisation of monopolies and oligopolies has contributed to increased competition. Nevertheless, the ownership structure in the business sector is still characterised by the highest corporate centralisation and integration, although it has acquired such new features as growing transnationalisation, and continuous restructuring of saleable assets. In the course of economic liberalisation, often only the form of ownership changed, and the place of the state and trade unions as the owner of the largest companies was occupied by representatives of Israeli and foreign private capital. At the beginning of the 2020s, 12 groups of monopolistic financial and industrial associations owned 60% of the total market value of all Israeli companies. It is estimated to be the world's highest concentration of capital in the world.

At the present stage, Israel is dominated by a combination of state and entrepreneurial capitalism, as well as the capitalism of large firms, although the country is noticeably behind even small developed countries in terms of the size of the latter.

5 Human Capital and Innovative Development

The share of the region, with its 550 million people, in the world population is large (8%) and continues to increase due to high growth rates (1.8% per year in the last decade and slightly lower this year). Migration flows are directed to and from the region and within the region: from North Africa, traditionally to Europe, and to the oil-producing countries of the Persian Gulf, there is also a very large inflow of labour

from neighbouring Arab countries and South and Southeast Asia (India, Pakistan, Bangladesh, and the Philippines).

The shortage of labour resources in the Persian Gulf monarchies is explained both by the small number of indigenous people and their generally low professional level, their unwillingness, due to traditional cultural remnants, to engage in many types of professional activities, as well as religious prohibitions on the mass labour of local women. In this regard, in the UAE, Saudi Arabia, Kuwait, Qatar, Bahrain, and Oman, the number of foreign employees reaches 70–90%, and up to 100% in industry, construction, and utility employment. However, under the conditions of the rapid growth of the indigenous population and narrow domestic labour market, with the threat of increasing unemployment, a more active involvement of local labour in production has begun.

In the rest of the Arab countries, the share of the employed population is also small due to a large number of children and adolescents (more than 40% of the population), the weak involvement of women, and the rapid increase in life expectancy. As a result, unemployment is very high in these countries—it is estimated that in Algeria, Sudan, and Yemen it exceeds 30% of the total able-bodied population. It is partially counterbalanced by migration to Europe or Arabia.

Religious and military components are beneficial parts of the teaching programmes of educational institutions in Arab countries. Their science is poorly developed and modern technologies are borrowed, as a rule, from abroad. In Egypt, significant research is concentrated in leading universities, research centres, and large state-owned companies, but it is predominantly applied research. As for fundamental research, local scientists manifest themselves only in cooperation with the leading scientific centres of the world. The Gulf countries also do not take an active part in global R&D.

In Iran, after the demographic boom of the first decade of the Islamic regime when reproduction was strongly encouraged, a family planning programme was adopted in the mid-1990s, thanks to which the population growth rate gradually decreased to the global average. Nevertheless, the proportion of people under the age of 30 is two-thirds of the population, which exacerbates unemployment. It constantly exceeds 20% and is especially high among young people and in rural provinces.

Significant research work in Iran is also concentrated in leading universities, research centres, large state-owned companies, and industrial parks. Much attention in recent decades has been paid to women's education and the development of school education in the backward provinces of Iran. A "scientific jihad" has been declared in the country, but the largest allocations are made to military R&D and dual-use technologies.

In Turkiye, two-thirds of the population is of working age, but the number of jobs is limited, which is a constant concern of the government. A lot of Turkish workers traditionally travelled to Europe to earn money, but in recent years this flow has significantly decreased. At the beginning of 2022, unemployment was 11%, but it is much higher in the eastern regions of the country.

R&D financing is growing rapidly in Turkiye (up to 1% of GDP). But all developments relate to the applied sphere, and in fundamental research Turkish scientists

also manifest themselves only in cooperation with the leading scientific centres of the world. However, such joint ventures have borne fruit in the long term. Türkiye, focusing on military R&D, is currently developing its technologies of drones, as well as developing fifth-generation military aircraft together with the UK. A technopark near Istanbul, comparable with Silicon Valley in the USA, is also promising.

The specifics of the formation and use of Israel's human capital were largely determined by the demographic situation—the massive influx of immigrants from various parts of the world, which provided a large reserve of labour. As a result, the country's population increased from 0.8 million people in 1948 to 9.2 million people in 2020. At the same time, employment rates were high, which indicates the effectiveness of the absorption mechanism created in the country. Almost full employment of the population has been provided here for a long time: unemployment was at a natural level for Israel with its significant immigration—3–4% in the 1960s–1970s and 5–7% in the 1980s–1990s and reacted little to fluctuations of economic cycles and structural shifts in the economy. It was only in the twenty-first century that the link between unemployment and cyclical development became more obvious, but it is still not so evident.

The Israel's resettlement model made it possible to use the great intellectual potential of migrants. Immigration decisively helped Israel to overcome the scientific and technological gap with developed countries and the low initial level of national education. As the country progressed, the national system of education and training became a decisive factor in improving the quality of the workforce.

Besides, over time, Israel created a highly developed scientific and technical potential, which became an important element in the model of society developed by the founding fathers of the Jewish state. Being deprived of any significant natural resources, Israel relied on the full development and use of scientific and technical knowledge and borrowed experience. Up to 4–5% of GDP is allocated annually for research and development only in the civil sector. There are 135 scientists and engineers per 10,000 employed in the economy (twice as many as in the USA, and three times as many as in Germany). In terms of technological readiness, reflecting the degree of penetration of high technologies into the national economy, Israel is third only to Sweden and Singapore.

Despite the relatively high level of scientific and technological development, the small scale of the economy seriously limits Israel's ability to enter the group of world leaders in scientific and technological progress. And therefore, along with its efforts, Israel continues to borrow technologies from advanced foreign countries. In this regard, the resettlement scheme of the country provided it with solid advantages, since scientific cooperation today is one of the central links connecting Israel with the Jewish diaspora in various parts of the world, and its intellectual potential is still a source of assistance from abroad. By the mid-1990s, Israel had become one of the links in the global high-tech research and production network and moved from trading finished high-tech products to direct scientific and technical cooperation.

6 Real Sector

The fuel and energy sector, especially the fuel industry, is of great importance in the economy of most Arab countries. This is not only due to the huge deposits of oil and gas, but also the convenience of their occurrence, as a result of which the costs of their extraction are considered the lowest in the world. Special hopes are pinned here on local natural gas resources. Saudi Arabia, the UAE, and Oman plan to increase natural gas production and export. The benefits of such a decision were confirmed by the experience of Algeria and Qatar, where gas reserves exceed oil reserves and gas exports have long brought more substantial revenues. Besides, in recent years, the world demand for natural gas has been growing faster than for oil.

Within the framework of the fuel and energy complex, the electric power industry was also developing at a high pace, which opened up opportunities for the growth of such energy-intensive industries as metallurgy and organic synthesis chemistry. In Bahrain and Saudi Arabia, there are enterprises for smelting high-purity aluminium from Australian alumina, and the products are exported to Europe.

In the monarchies of the Persian Gulf, the industry is diversified due to petrochemicals. The capacity of the main petrochemical enterprises operating today allows to produce 52 million tons of petrochemical products (primarily in Saudi Arabia), 60% of which are exported. In the chemical industry, in addition to the production of plastics and synthetic materials, a special place is occupied by the production of fertilisers based on local phosphorites, which occur in almost all Arab countries, especially in Morocco and Tunisia. In the conditions of the unfolding construction boom, the production of building materials, especially cement, is rapidly developing.

The development of modern manufacturing industries can only be discussed when it comes to Israel, Turkey, Iran, and partly Egypt. In Israel, the manufacturing industry, primarily mechanical engineering, is the basic one. The face of Israeli engineering is defined by aviation engineering; the electronic and electrical industry; the production of optical instruments and other precision equipment; the chemistry of fine technologies; and diamond cutting. More than 50% of all these products are exported. There are about 400 diamond-cutting enterprises in the country, and Israel accounts for 40% of the world's diamond production. The branches of Israel's international specialisations also include genetic engineering, pharmaceuticals, and the microbiological industry. The military industry in this country (about 60 thousand people are employed in the defence industry) is integrated into the national economy, and high-tech dual-use production is rapidly developing inside and around it.

In Iran, the most developed branches of the manufacturing industry are metallurgy (the country is the second-largest steel producer in the region after Turkiye and relies on its raw material deposits), petrochemicals, and automotive (but it is highly dependent on foreign components subject to Western sanctions). A special place in the Iranian economy is occupied by the defence industry, which produces many types of military equipment. Besides, the country has made notable progress in the development of the space industry—since 2009, several satellites of domestic production have been launched. However, the degree of technological dependence

of Iran on other countries remains high, and traditional crafts still absorb a significant part of the labour force.

In Turkiye, the manufacturing industry has been the engine of economic development in recent decades. In terms of industrial production, the country has entered the top twenty economies of the world. The high rates of industrial growth are based both on growing domestic demand and the export-oriented nature of the industry, in which a significant share is accounted for by the assembly of products from foreign components. In this regard, the share of products with high added value remains low in manufacturing—only about 4% and the share in exports is about the same. Metallurgy, the automotive industry, and the construction sector are developed, but in terms of total production and share in exports, the light and food industries prevail, although there is a sharp increase in exports of the military equipment.

In the rest of the Middle Eastern countries, the leading place in the structure of the manufacturing industry is occupied by such traditional industries as light and food (in Egypt, they account for 25 and 30% of the industry, respectively). Small-scale and handicraft production continues to play an extremely important role, providing the needs of the local population for food, clothing, and household items. At the same time, the share of military-industrial complex in the economy is growing.

A typical feature of agriculture in Arab countries is the emphasis on the production of the traditional food products of the local population, whereas the production of vegetable and animal raw materials for processing is relatively small, except for cotton, citrus, and olives. In the Arab sub-region as a whole, agriculture employs one-third of the labour force and produces up to 15% of GDP. Nevertheless, Arab countries provide themselves with only 60% of their required food, and, according to FAO calculations, by 2025, this figure will be reduced to 30%.

In Iran, agrarian reforms carried out back in the 1960s and significant investment in agriculture have borne fruit, but they have not solved all the problems—up to a quarter of food products are imported. The most difficult problem of Iran's agriculture today is the need to expand and modernise the irrigation system. The country does not have full-flowing rivers, so the sources of drinking water and irrigation water are groundwater reserves, which are gradually being depleted. The drought of 2021 interrupted the supply of water and provoked “water riots”. Due to the decrease in the water level in reservoirs, not only has the production of wheat and other crops reduced but also electricity generation has decreased. In 2020–2021, measures were taken to limit electricity consumption, including cryptocurrency mining.

In the Gulf countries, the acute shortage of freshwater, especially for agriculture (in Arabia 80% of the water is used for agricultural purposes), is a matter of special concern. Tens of billions of dollars have been allocated here for implementing desalination and water purification projects. Saudi Arabia and Qatar have become the world's largest producers of desalinated water. The installations operating there provide 70% of the needs for freshwater, and their costs exceed 1% of GDP since 1 m³ of desalinated seawater costs \$4.50.

In Israel, 90% of the national food needs are met by its own produce, there is a shortage of only grain, beef, sugar, and coffee. More than 80% of agricultural products are provided by rural cooperatives—kibbutz and moshavs, with very

high labour productivity. One farmer can feed 142 people. In winter, Israel acts as the “greenhouse” of Europe, providing uninterrupted supplies of environmentally friendly vegetables, fruits, and flowers.

7 Financial Sector

In Arab countries, the formation of the modern financial sector took place using elements of European and American financial models, but thanks to the economic doctrine of Islam there is a special type of credit institution that have no analogues in the world. These institutions operate under the provisions of Muslim business ethics. Islamic banks reject interest rates, considering it unfair profit, and only their complicity in the economic activities of the loan recipients is encouraged.

According to forecasts, soon Islamic banks should attract up to half of all savings in the Arab world. Moreover, their reliable reputation and their possibility to attract large resources of free capital from Muslim countries, primarily the Gulf countries, allow Islamic banks to join global financial system, as evidenced by the increased interest of reputable American and European financial institutions in cooperation with them.

Stock exchanges are actively developing in the Gulf monarchies, among which the stock exchange of Saudi Arabia (Tadawul) stands out, where the market capitalisation of traded securities in 2021 amounted to \$2.6 trillion (13th place among the stock exchanges of the world). The market capitalisation of other exchanges in the Arab Gulf countries is also growing rapidly.

In Iran, the foundations of the modern financial system were laid back during the Shah’s period, but after the 1979 revolution, the entire credit system was converted to Islamic foundations, i.e., on an interest-free basis. Interest-free funds and cash registers (credit unions) that carry out microfinance have become popular, although the size of their loans is small. The most common type of lending is not investing in production, but “murabaha”—lending to trading operations. Deposit activity is similar to global principles.

Most of Iran’s banks are private, banks with foreign participation are allowed to operate in free economic zones. However, the international activities of Iranian banks are greatly hampered by Western sanctions. The Tehran Stock Exchange is operating (in 2021, its market capitalisation was 1.35 trillion dollars), through which the sale of Islamic sukuk bonds is also carried out.

Only four out of 48 Turkish banks operate under the Islamic system. The concentration of bank capital is very high—the top five accumulate more than 60% of all bank assets. Turkiye is attractive for applying foreign capital in the banking sector due to its stability. A long-term programme “Istanbul—Financial Centre” has been developed with a purpose to create a world financial center in the city.

At the same time, as in other Muslim countries, one of the elements of the modern economic model of Turkiye is the functioning of Islamic economic institutions, mainly special Islamic financial organisations and Islamic holdings, which became

widespread after 1980. But their role in the country's economy is small, they account for only about 7% of total banking assets.

In Israel, the financial sector is one of the oldest and most developed sectors of the economy. The inflow of significant financial resources from abroad (in the form of government loans and subsidies, private donations, personal funds of immigrants, and foreign private investments) created a breeding ground for the development of financial, primarily banking, institutions.

The consolidation of banking reduced the number of commercial banks to 29 (in 1954 there were 116) and the strengthened the "big three"—Bank Hapoalim, Bank Leumi, and the Israel Discount Bank account for about 90% of the assets of banking institutions. Of the next ten largest commercial banks, six are subsidiaries of the "big three". In many ways, a similar picture is observed among special banks and other financial institutions. But in terms of absolute indicators (equity, assets, profit), Israeli banks lag far behind the ones of leading Western countries.

The Israeli stock market has long remained the least developed segment of financial sector. Nevertheless, Israel managed to partially integrate the national stock trade into the world stock market. The main part of the turnover of stock values falls on the Tel Aviv Stock Exchange.

8 External Sector

8.1 Foreign Trade

Given the export-oriented nature of most economies in the region, it is difficult to overestimate the importance of foreign trade for them. For example, from 40 to 90% of the Persian Gulf countries' GDP is exported.

Arab countries specialise in exports of fuel and raw materials. The structure of their exports is traditionally dominated by oil (the Middle East provides more than a third of world oil exports), but the share of natural gas and minerals, early fruits and vegetables, cotton, and leather is also significant. In recent years the share of liquefied gas, aluminium rolled products, fertilisers, and cement has been growing in the export structure.

In the structure of imports from Arab countries, 75% are finished products and more than 10% are food (in Egypt it is 30%). Arms purchases are important to import items not only for Arab countries but also for all countries in the region. Arab importers alone account for 40% of all arms imports by less developed countries. The main supplier of weapons to the region is the United States, and their supplies to some countries are so large that they generate military dependence on the United States and in some cases are equivalent to a military alliance agreement.

Egypt's exports are more diversified compared to its neighbours. Here, as in other Arab countries, the state retains a monopoly on the export of some goods, although their list is now reduced to oil, petroleum products, cotton, and rice. The

most important foreign trade partners of Egypt are the EU countries (35%) and the USA (22%), but their share is gradually decreasing due to Egypt's persistent desire to diversify foreign economic relations. Nevertheless, Egypt became an associate member of the EU in 2004 (like most other Mediterranean countries), thanks to which its exporters enjoy duty-free access to European markets, except for food, cotton, and yarn.

Before new US sanctions were introduced in 2019, oil dominated Iran's exports, but by 2020 its share had drastically decreased. The largest share was taken by the products of the other industries—chemical, petrochemical and metallurgy, including non-ferrous. The import market is dominated by components (about 60%) for transport machinery and household appliances, as well as food products. Due to the sanctions, the geographical structure of foreign trade has changed dramatically and China, India, and Turkey took the place of the USA and EU. The UAE came out on top in imports, through which goods from various countries arrive in Iran. In 2021, the procedure for Iran's admission to the Shanghai Cooperation Organisation began, and a tariff system is being worked out for signing a permanent agreement on the creation of a free trade zone with the Eurasian Economic Union.

Turkiye's merchandise exports are dominated by manufacturing products (95%), which is the most dynamic sector of the Turkish economy. More than half of exports go to the EU, which reflects the growing competitiveness of Turkish products. The Turkish economy still depends on imports of raw materials and intermediate goods (more than 70% of imports), which reflects the aforementioned assembly nature of many Turkish manufacturing enterprises.

In Israel, exports are becoming increasingly service-intensive—The share of the tertiary sector in total exports is steadily increasing from 34% in 2000 to 47% in 2020. In merchandise exports, the share of finished goods was 94% in 2018. The structure of merchandise exports is dominated by chemicals (30%), diamonds and rough diamonds (23%), electronic and electrical equipment (21%), and mechanical engineering goods (10%).

The Israeli high-tech industries (as well as diamond cutting) are focused on foreign markets, exporting about 75% of their products. The defence industry exports 17% of its production (since the late 1990s Israel ranks 4th–6th in the world in terms of arms exports). Agriculture accounts for only about 2% of exports of goods. The United States remains Israel's leading trading partner (about 30% of Israeli exports) and about 25% more are accounted for by European countries, mainly the EU (15%).

8.2 Balance of Payments

In the fuel exporting countries of the Near and Middle East, the balance of payments is traditionally in surplus (although Saudi Arabia often has a negative balance), but most other countries have a deficit (Israel is the most notable exception). In Iran, the balance of payments is positive, despite a sharp (almost three-fold) reduction in oil

exports from 2018 to 2021. For the first time in 2019–2021, the country managed to achieve a greater amount of non-oil exports than oil.

In Egypt, the trade balance over the past decades has been reduced to a large annual deficit, which is partially covered by transfers of Egyptians working abroad. The deficit is also covered by such items as financial aid (primarily from the United States and international Islamic organisations), as well as the inflow of foreign private capital.

In Turkey, the current account deficit is also partially covered by transfers of Turkish workers in the Persian Gulf countries and especially in Europe (more than 1.5 million Turks work there), loans from international organizations, and the inflow of foreign private capital.

8.3 Foreign Investment

In the 1990s, most countries in the region began to pursue a policy of encouraging FDI inflow. In Arab countries of North Africa and the Levant, the most favourable investment climate for foreign entrepreneurs exists in Egypt (in 2020, the volume of inward FDI stock amounted to \$132 billion) and Morocco (\$50 billion). Lebanon and Jordan (\$18 and \$37 billion, respectively) are no less attractive for this capital if we calculate its volume per capita, and their policy is aimed at creating export potential and expanding import-substituting production primarily based on FDI.

Although the Gulf monarchies do not need foreign loans, they need FDI from abroad to gain access to new technologies, and portfolio investments to expand the activities of their international financial centres. A very favourable investment climate exists in the UAE, Qatar, and Kuwait, where there are no income taxes or restrictions on foreign trade and there are no obstacles to international capital movements. That is why the UAE, especially Dubai, was recognised as a regional financial centre focused mainly on the huge financial market of the Asian South. Outward FDI stock of UAE (\$204 billion in 2020) exceeds its inward FDI stock (\$151 billion) as well as FDI stocks of Qatar (\$29 billion and \$48 billion, respectively) and Kuwait (\$14 billion and \$34 billion, respectively).

There was a decisive turn in intensifying the cooperation with foreign capital, even among such “stubborn” countries as Algeria and Saudi Arabia, who for a long time allowed foreign private capital to act only as a partner of national companies. For example, in Saudi Arabia until the end of the 1990s, foreign capital could function only in companies mixed with Saudis as a junior partner. The new investment law adopted in 2000 allowed foreign investors to work independently, with an income tax rate reduced from 45 to 30%, and the government pledged not to levy taxes on new companies until they begin to make a profit. Foreign companies have access to government orders and the right to purchase real estate. The activity of foreign investors in the manufacturing industry and infrastructure sectors is encouraged, but the extraction of raw materials is restricted for them. As a result, inward FDI stock in Saudi Arabia increased from \$18 billion in 2000 to \$242 billion. At the same

time, Saudi Arabia itself has become a major exporter of capital, which is explained (like the rest of the Persian Gulf monarchies) by the inability to absorb huge flows of petrodollars inside the country due to the narrowness of the domestic market, as well as the desire of the elite to financially protect themselves from internal crises. In 2021, the size of Saudi outward FDI stock amounted to \$129 billion.

The size of other types of investments accumulated by these monarchies abroad is even greater—portfolios, loans, and deposits. As a result, according to our estimates, the value of foreign assets of all the countries of the Persian Gulf is estimated at \$2.5 trillion. At the same time, the monarchies of the Persian Gulf actively render aid to other, mainly neighbouring, Muslim countries. The leaders in terms of sending foreign aid in the region are Saudi Arabia (a record 1.2% of GDP) and Qatar (1%), and the major recipients are Iraq, Egypt, Lebanon, Afghanistan, Jordan, and, of course, Israel, which receives aid from the West. For Saudi Arabia, its foreign aid has become a powerful tool of its policy of pan-Islamic and pan-Arab solidarity.

In Iran, the volume of inward FDI stock due to Western sanctions is not great and in 2020 was \$59 billion (mainly due to investment from Asia), which is much less than in Turkiye, where its volume reached \$212 billion. The Law on Direct Investment, adopted in 2003, equalised the rights of foreign and domestic investors, and the country became attractive for FDI. The Turkish government applies a variety of incentive measures to foreign investors, which are designed to facilitate the placement of investments in the country that meets the overall strategy of economic development: investment in export-oriented and knowledge-intensive industries, tourism, logistics, construction, education, and health care are encouraged. One of the elements of the market model is free economic zones created in the early 1990s, and, since the early 2000s, organised industrial zones (OIZ) (there are about 150 OIZs), evenly distributed throughout the country. Various types of free zones can be found in Iran, along the entire perimeter of the borders. They have the most favourable conditions for the work of foreign companies.

In Israel, inward FDI stock has reached a noticeable amount—\$189 billion in 2020 (mainly at the expense of investment from the USA, the Netherlands, and the Cayman Islands), and the stock of Israeli direct investment abroad—\$117 billion. About half of inward FDI stock is concentrated in Israel's high-tech manufacturing and service industries. The country continues to occupy first place in the world in terms of financial assistance per capita.

9 Social Sector

The standard of living of the population varies greatly in the countries of the region. In the monarchies of the Persian Gulf, it is approaching the European level by some indicators. At the same time, in Afghanistan, Sudan, and Yemen their levels correspond to their status as the least developed countries.

In the Persian Gulf monarchies, the state actively intervenes in the social sector not only for improving social stability but also to increase human capital. An effective social security system has been created, including free medical care and education, subsidised food prices, housing at affordable prices, lending on preferential terms, and utilities and transport services for a nominal fee.

There is no such provision in other Arab countries, and the problem of mass poverty is acute. In terms of living standards, Egypt, for example, is far below the top one hundred countries in the world: 40% of Egyptians live on less than \$2 a day. Besides, unemployment in the past decade fluctuated between 9–13% due to rapid population growth (1.9% in 2020). In addition, the population of Middle Eastern Arab countries (Syria, Iraq, and partly Lebanon) suffers greatly from the consequences of armed conflicts. They are characterised by supply disruptions, refugees, and mass unemployment. In Iran and Turkey, the share of the population living on less than \$1.90 (2011 PPP) per day is only 0.4–0.5%, whereas in South Sudan, it is almost 3/4.

The problem of income differentiation is also acute, especially in the monarchies of the Persian Gulf. Nevertheless, there are examples of its mitigation in the region. For example, in Turkey in 1987–1994, the group with the top 20% of highest income increased its share of national income (from 49.9 to 54.9%) at the expense of the other four groups, but by 2002 the share of the highest group had decreased to 46.7% and has remained the same (48.0% in 2019). In Iran, the support that the population receives from various religious organisations—mosques, waqfs, and Islamic foundations—is significant. For the support of the population, especially urban, significant amounts of assistance are allocated at the expense of a voluntarily paid religious tax—khums.

In Israel, the development of a socially oriented economy and the strategic goal of the state to maximise immigration contributed to maintaining a high standard of living and quality of life. In 2022, the country was ranked 22nd in the world on the Human Development Index Life expectancy here has reached 82.7 years (7th position in the world), the average duration of education is 13.0 years (5th position in the world), and healthcare costs amounted to about 8% of GDP.

According to the social structure of its society, Israel is a typical middle-class country, and it differs greatly from most countries of the region and generally corresponds to the models of OECD countries. The average salary roughly corresponds to the level of France, Germany, Austria, Belgium, and the UK. The Gini coefficient decreased from 39.2 in 2015 to 36.9 in 2018. Nevertheless, according to this indicator, Israel, as before, lags noticeably behind small European countries with strong social-democratic traditions and is closer to the United States and the United Kingdom.

10 Conclusions

1. All the states of the Near and Middle East, except Israel, are less developed countries, but they differ greatly from each other in terms of the most important indicators of development and their economic systems. But everyone (again, except Israel) is united by the backward structure of the economy, monocultural specialisation, and dependence on the influx of foreign capital and knowledge.
2. In the region, the property is often concentrated in the hands of the so-called bureaucratic bourgeoisie, whose sources of power and prosperity are political power and state property. A characteristic feature of such a model is unrestrained administration and although this model corresponds to the traditions and way of life of most of the Middle Eastern society, in reality, it suppresses entrepreneurial initiative and affects economic efficiency.
3. The share of the region with its 550 million people is large (8%) and continues to grow due to high growth rates (1.8% per year) in the 2000s and slightly lower ones in the 2010s. Migration flows go to and from the region and within the region: from North Africa to Europe and the oil-producing countries of the Persian Gulf, and there is a very large inflow of labour from neighbouring Arab countries, as well as from South and Southeast Asia.
4. For the most Arab countries, the fuel and energy sector, especially the fuel industry, is of great importance. This is a consequence not only of the huge reserves of oil and gas but also of the convenience of their occurrence, as a result of which the costs of their extraction are the lowest in the world. The monarchies of the Persian Gulf are largely diversified due to petrochemicals. The development of modern manufacturing industries can only be discussed when it comes to Israel, Turkey, Iran, and partly Egypt.
5. In Muslim countries, the formation of the modern financial sector took place using elements of European and American financial models, but thanks to the economic doctrine of Islam there is a special type of credit institution that have no analogues in world practice, and which function in accordance with the provisions of Muslim ethics. Islamic banks reject the interest rate, considering it unfair profit, and only their complicity in the economic activities of the loan recipients is encouraged.
6. Given the export-oriented nature of the economy of most countries in the region, it is difficult to overestimate the importance of external relations for it. For example, from 40 to 90% of the Persian Gulf countries' GDP is exported. Arab countries specialise in the international trade of mainly raw materials, especially oil. The merchandise exports of Israel and Turkey are dominated by the products of the manufacturing industry.
7. The balance of payments of the oil-exporting countries is traditionally positive, while most other countries have a negative balance. In the 1990s, most Middle Eastern countries began to pursue a policy of encouraging foreign direct investment, the radicalism of which varied markedly.

8. The standard of living varies greatly in the countries of the region. It approaches the European level in some indicators and even surpasses it in the monarchies of the Persian Gulf. At the same time, both Sudan and Yemen, correspond to their status as the least developed countries. In the Arab countries of the Persian Gulf, the state actively intervenes in the social sector not only for achieving social stability but also to increase human capital, while in other Arab countries there are no such provisions, meaning the problem of mass poverty is acute.

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Abstract The chapter gives a retrospective analysis of Latin American economies including the evolution of their economic systems, dynamics and proportions of their development, the business structure of these economies, their human capital and innovation abilities as well as the analysis of real financial, external and social sectors.

1 Introduction

The region's weight in world GDP by PPP is about 8%; it is one of the most advanced among the less developed regions of the world (second only to Central and Eastern Europe in per capita income). Brazil accounts for about a third of the region's GDP, Mexico is not far behind it, followed by Argentina, Colombia, Chile and Venezuela. A characteristic feature of the region is the complexity of the economy.

2 Retrospective of Latin American Economic Development

The name “Latin America” comes from the historical influence of Romance languages, culture and customs of the inhabitants of the Iberian Peninsula in this region. Latin America consists of 33 sovereign States and a number of dependent territories. Despite the differences in the size of territories, the natural resource base and the level of GDP per capita, Latin American countries have a number of similar features, which makes it possible to combine them into one region of the world economy (see Table 1).

The economic development of Latin American countries after the acquisition of independence in the century before last can be divided into three stages:

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Table 1 Some economic indicators of major Latin American economies in 2021

	Population, million people	GDP, \$ billion	Share in regional GDP, %	GDP per capita, \$ thousand	The average annual growth rate of GDP in 1991–2000, %	The average annual growth rate of GDP in 2001–2010, %	The average annual growth rate of GDP in 2011–2020, %	GDP growth in 2021, %
Latin America and the Caribbean	659.7	5.196	100	7.9	3.0	3.3	0.5	6.8
Argentina	45.6	491	9.4	10.7	4.2	3.7	(–0.6)	10.3
Brazil	213.9	1.608	30.9	7.5	2.6	3.7	0.3	4.6
Venezuela	28.7	...	...	...	2.2	3.5	(–6.4) ^a	–5.0 (est.)
Colombia	51.2	314	6.0	6.1	2.8	4.1	2.6	10.6
Mexico	130.2	1.296	24.9	9.9	3.5	1.5	1.3	4.8
Peru	33.3	214	4.1	6.4	4.0	5.6	2.6	13.3
Chile	19.2	317	6.1	16.5	6.8	4.2	2.1	11.7

Source United Nations Economic Commission for Latin America and the Caribbean
^a2011–2018

1. the period of early liberalism (export-oriented model), which lasted until the 1930s;
2. the period of the state capitalist model (import substitution model of industrialization), which prevailed throughout the 1930–1980s;
3. the current stage, including the transition to the neoliberal paradigm in the early 1990s and the search for a new model of development since the 2000s.

The characteristic features of the economic development of Latin American countries in the late nineteenth–early twentieth centuries were the presence of remnants of the legacy of the colonial period, which manifested themselves in the agrarian and raw nature of national farms, the preservation of numerous restrictions on economic activity, latifundism (more than 80% of peasants did not own land). The region's economies also remained dependent on the leading economic centres of Europe and North America. In the second half of the nineteenth century, foreign capital began to penetrate into the region through the construction of railways, power plants, the development of the extractive industry and light and food industries. The formation of modern economic structures was carried out at a very slow pace. The Latin American model of the early twentieth century is often referred to in the scientific literature as “belated, dependent capitalism”. The countries of the region acted as suppliers of raw materials—minerals and agricultural products (Ocampo, Ros 2011).

In the 1930s, under the influence of Keynesian ideas, there was a reassessment of values in the economic views of Latin American ruling elites. In the region, one country after another gradually began to move to a model of catch-up development based on import-substituting industrialization, where the leading role in the modernization of the economy was given to the state. The main goals of the state capitalist model were to accelerate the pace of economic development, gain economic independence, the desire to help national private entrepreneurship in its formation, the desire to solve accumulated social and economic problems and implement large-scale economic projects, as well as the thirst to take control of natural resources. The state, represented by the state sector created by it, has become the main factor of economic growth, the basis for the development of the fuel, energy and raw materials base and the basis for the formation, or accelerated development, of a number of industries: ferrous and non-ferrous metallurgy, oil refining and petrochemistry and related, complementary industries. However, the policy of protectionism in the name of protecting the domestic market has led to the monopolization of production and the domestic market; the transformation of a narrow number of large enterprises into the only suppliers of specific types of products. State-owned enterprises could be created from scratch and operate on a par with private firms or with the help of nationalization of assets that were in the hands of foreign capital in strategic sectors of the economy (in 1938, the oil industry in Mexico was nationalized, in 1952, the tin industry in Bolivia, in 1971, the copper industry in Chile, in 1968–1974, oil, mining and fishing industry in Peru, 1975–1978, railway and oil and gas industry in Venezuela and in 1971–1975, bauxite mining industry in Guyana).

The result of the state capitalist (import-substituting) development model was the overcoming of economic underdevelopment, the creation of large enterprises in basic industries, production infrastructure and the creation of state banks. The state has

assumed the responsibility to supply the domestic market with strategically important goods. Public investment acted as an engine of economic growth and a stimulator of private investment. During the period of the policy of import substitution, national market structures became more mature; the private sector turned into an independent economic agent and domestic industrial and financial groups were formed. The flip side of the state capitalist development model was the chronic deficit of the state budget of Latin America and the growth of its external debt. By 1980, the model had lost its dynamism, and the shortcomings of the import substitution policy began to be more and more clearly observed. In the 1980s, the countries of the region plunged into a protracted economic crisis, sometimes called a “lost decade”.

Under the influence of globalization and neoliberal ideas in the early 1990s, most Latin American countries began to move to a new model of economic growth. In accordance with the Washington Consensus, the role of the state in the economy was reduced to a minimum. The economy was deregulated, financial markets and foreign trade were liberalized and restrictions on foreign capital were lifted. Since one of the causes of the crisis was an inefficient public sector, the privatization of state property was carried out. The state has sharply reduced the expenditure part of the budget in an effort to maintain fiscal discipline. There has been a partial reorientation of economic development from internal to external factors.

However, the results of the neoliberal paradigm in Latin America were also unsatisfactory. As a result of the liberalization of the economy and the restriction of the role of the state, the levers of influence on economic growth were lost, destabilization, an increase in unemployment, social stratification of society and a decrease in living standards gradually occurred. There has come a strengthening of the positions of large national and foreign capital in the economy. The main goal of the reforms—to achieve accelerated economic growth and further modernization of economic systems—has not been achieved.

In the new millennium, the countries of the region continue to search for an effective growth model. The neoliberal model has been replaced by a “left turn” in many countries of the region in the wake of populism and criticism of the Washington Consensus. In the early 2000s, the left-leaning governments that came to power in Argentina, Brazil, Bolivia, Ecuador and Venezuela tried to solve the accumulated social problems and give impetus to economic development by strengthening the role of the state, but they also failed. By the end of the second decade of the twenty-first century, a “right turn” began in the region.

3 Mutual Aspects of Latin American Economic Systems. Business Structure

The economic systems of Latin American countries have a common characteristic—hierarchical market economies—which allows them to be distinguished from other middle-income developing countries (Schneider 2013).

The characteristic features of most modern Latin American economic systems are the dominance of oligarchic companies (business groups) and foreign MNEs in them, in which mainly low-skilled labour is employed in conditions of unstructured labour relations.

The dominant form of business in Latin America is large private companies. They can be conditionally divided into two large groups: (a) large national firms managed by one owner, family or economic group; (b) local branches of foreign MNEs, which are traditionally engaged in the engineering industry, and after 1990 they also began to dominate in the financial sector and in the field of services. As a result, a characteristic feature of the Latin American economic model is a hierarchical enterprise management system, since the vast majority of companies are controlled directly by their owners or their family members, if we are talking about domestic firms, or foreign parent corporations, if we are talking about branches of MNEs. The norm is the management of a company for a long period of time or even several generations by one owner or his family. The relations that are being built between Latin American big business and its partners, suppliers and buyers of their products are unequal and also subject to a rigid hierarchy. The hierarchical way of management hinders the development of corporate governance, intra-company relations and both financial and stock markets. There is practically no inter-firm cooperation between MNEs and national business groups.

National business groups in Latin America are family-owned enterprises, which are mainly large capital—intensive and low-risk assets—usually present in four or five different sectors of the economy: mining, manufacturing, construction, services and the financial industry. Latin American business groups usually consist of a large number of subsidiaries, but there are no intra-company relations and technological cooperation between the branches.

Since 1990, under the influence of the liberalization of the economies of the countries of the regions and the processes of globalization, the presence of transnational capital in Latin America has rapidly increased. Traditionally, foreign MNEs have been present in the manufacturing industry, the chemical industry, the production of electrical equipment, vehicles and consumer goods, as well as in finance, services and especially in foreign trade. It is believed that from 1/3 to 2/3 of Latin American foreign trade accounts for intra-company trade within the framework of the MNEs.

Labour relations in Latin America are flexible and disordered, as they are short-term for most workers. Usually, one employee works for no more than three years in one place. On the one hand, labour relations are strongly controlled by the state, but on the other hand, due to the high level of employment of the population, especially young people, in the informal sector, a very small percentage of Latin American workers are covered by social protection.

A characteristic feature of labour relations in the Latin American region is the lack of institutions of interaction between entrepreneurs and employees. In the countries of the region, the role of trade unions is quite small, in addition, the coverage of workers by the trade union movement is low due to high staff turnover and a large percentage of those employed in the informal sector of the economy.

In the 2010s, due to the unsatisfactory results of neoliberal reforms, the role of the state in the economy began to strengthen in many countries of the region, especially in the social sphere. States rich in natural resources, such as Venezuela, taking advantage of the temporarily favourable situation on commodity markets and the high cost of energy resources, have attempted to radically change their socio-economic system with the help of more active state intervention in the economy. The Venezuelan experiment was called “socialism of the twenty-first century”. Time will tell how successful and tenacious the project turns out to be.

4 Human Capital and Innovative Development

The level of human capital development in Latin America lags significantly behind developed countries. On average, the majority of Latin Americans study for only 8.5 years. The raw-material nature of the economies of most countries in the region hinders the development of human capital, since the demand for qualified labour is limited. For the same reason, business investments in professional development of employees or their professional retraining are limited. In addition, due to the high turnover of personnel, there is a risk of their being lured by competitors. The employees themselves also do not see a great need to improve their skills, since in addition to frequent job changes, they also often change the profile of their professional activities.

Another characteristic feature of the Latin American economic model is low R&D expenditures (amounting to about 0.5% of GDP). This can be explained by two reasons. Firstly, national business is mainly concentrated in labour-intensive and capital-intensive industries, where the demand for innovation is not so high. Secondly, in the extractive industry, in the production of raw materials and in the service sector, outdated or uncomplicated technologies are mainly used in combination with unskilled labour. Latin American branches of MNEs rarely conduct independent research work.

5 Structure of Economy

In recent decades, the sectoral structure of the Latin American economy has become more modern, but it is still characteristic of less developed countries (see Table 2).

In the largest countries of this region, the share of agriculture is quite low. In Argentina, Colombia and Peru it is noticeably higher, not so much because of the backwardness of these countries, but because of the strong specialization of these countries in the export of agricultural products (in Peru—seafood). Mexico’s greater focus on exporting finished (largely assembled) products to the United States significantly increases the share of the manufacturing industry in its GDP structure.

Table 2 Structure of Latin American economies' GDP by sector in 2021, %

	Agriculture, forestry and fishing	Industry and construction	incl. manufacturing	Services
Latin America and the Caribbean, total	6.9	30.5	16.0	65.1
Argentina	6.9	24.9	17.0	52.0
Brazil	6.9	18.9	10.0	59.4
Venezuela	5.0 (est.)	37.2 (est.)	12.0 (est.)	51.7 (est.)
Colombia	7.4	25.1	12.0	57.9
Mexico	3.8	31.9	18.0	58.4
Peru	7.7	30.2	12.0	54.4
Chile	3.3	31.7	9.0	54.6

Source World Bank Open Data Note Due to statistical discrepancies the sum of all three sectors is not equal to 100%

6 Real Sector

Despite the decrease in the share of agriculture in the formation of the GDP of Latin American economies over the past 50 years by more than 3 times, it continues to play an important role in the economy of the countries of the region, especially for foreign trade and employment. Agriculture employs from 10% (Uruguay) to 30% of the economically active population (Bolivia, Peru). The largest producer of agricultural products in the region is Brazil, and the positions of Mexico and Argentina are also strong.

Over the past decades, the region has undergone major changes in the structure of crop production: the production of oilseeds (especially soybeans) has increased several times, there has been a significant increase in the production of sugar cane, vegetables and fruits and the production of cereals and coffee has grown at a low rate. Nevertheless, the last two crops remain traditional export goods for the region.

In the countries of the region, especially in South America, animal husbandry is developed, which forms 45% of agricultural products. Latin American countries account for a significant part of the world's livestock production—about 13%. The main activity in this industry is cattle breeding; South American countries (primarily Brazil, Argentina and Uruguay) are world leaders in beef exports (43% of world exports). Extensive development of animal husbandry in many countries of the region was the cause of soil degradation and deforestation. Latin American countries occupy a significant place in the global production of fish and seafood mainly due to Chile and Peru, where this industry is in the hands of large international companies. Peru accounts for 7% of global seafood exports, while Chile accounts for 4.2%.

Modern agriculture in Latin America is characterized to a certain extent by the dualism of its structure. It consists of a small number of efficiently functioning

agricultural companies and a large peasant sector. Heterogeneity and inequality in agriculture are expressed in the concentration of land and income among an extremely small group of agrarians and latifundists, and as a result, most villagers are forced to look for additional earnings outside of agricultural activities, in the city or abroad. The situation is aggravated by the fact that in the 1990s the volume of subsidies to national producers in the agriculture of the region was significantly reduced. As a result of the concentration of state support of export-oriented enterprises, the reduction of customs tariffs on agricultural imports from 150 to 10%, there has been an increase in dependence on imports of certain types of food in the region.

In the twentieth century, Latin American countries, thanks to the policy of import-substituting industrialization, managed to build their industrial base. But, since the 1990s, the opposite trend has been observed in the region—a gradual decrease in the share of industry in the structure of GDP. The rapid opening of the economy to international competition and foreign capital has led to a reorientation of the structure of industrial production to the extraction and processing of minerals. As a result, the process of gradual deindustrialization is taking place in the region.

Latin America has a developed mining industry, which was formed with the decisive participation of foreign capital. Its characteristic feature is a weak connection with the local manufacturing industry, since the vast majority of the industry's products are exported. More than 50% of the output in value terms is accounted for by hydrocarbons. More than 90% of the proven oil reserves are concentrated primarily in Venezuela (17.5% of the world's reserves), as well as in Brazil and Mexico. However, most of the oil (159 million tons in 2020) is produced in Brazil, and mainly on the shelf.

The countries of the region are very rich in ore minerals. Thus, Brazil accounts for almost a quarter of the world's iron ore production and a significant part of the world's manganese production. Tungsten ores are mined in the region (more than half of production is in Bolivia), molybdenum (90% is mined in Chile), nickel and chromium, copper (a quarter of world production) and tin, lead, zinc and bauxite (a quarter of world production). Brazil and Mexico have the largest extractive industries in the region.

The largest steel producers in the region are: Brazil (33.7 million tons), Mexico (17.6 million tons), Argentina (5.5 million tons) and Venezuela (4.2 million tons). A sixth part of the produced products of the metallurgical industry is exported. Non-ferrous metallurgy is one of the leading manufacturing industries in Chile, Peru, Bolivia, Mexico, Brazil and Colombia. In the last century, most of the industry's ownership changed hands twice in almost all countries of the region: in the 1950s and 1970s, the nationalization of metallurgical enterprises was carried out, but in the late 1980s and early 1990s, this property was again transferred to private national and foreign capital. However, in some countries, the State continues to play the role of the leading producer of non-ferrous metals.

Mechanical engineering originated in Latin America at the end of the nineteenth century. During the Second World War and in the subsequent period, its development accelerated significantly. The first enterprises produced household goods, machinery, then rolling stock, agricultural equipment and means of production for textile, flour,

sugar, meat and butter factories. In the 1950s, the production of equipment for heavy industry was established. Currently, the countries of the region meet their needs for machine tool products by 60%.

Mechanical engineering developed in a peculiar way in Mexico, where it is represented mainly by assembly enterprises, the so-called maquiladoras, whose work is mainly exported to the United States, and therefore most of them are concentrated on the border with the United States. Currently, Maquiladoras enterprises specialize in manufacturing in the field of automotive, electrical engineering, as well as footwear, clothing and furniture products. The number of employees in these enterprises, including related production, has reached 10.5 million people. For Mexico, “maquiladoras” are one of the main sources of export income.

The leader of the automotive industry until the mid-1960s was Argentina, after which they were overtaken by Brazil, which today accounts for more than 50% of the production of cars in Latin America. Since the late 1960s, Mexico has been the second largest car manufacturer in the region. The automotive industry in Brazil is equipped with modern technologies and robotic equipment. All types of cars are produced in the country: cars, buses, special vehicles, trucks and trailers. A significant part of these products is exported, primarily to the United States. Brazil is also a major manufacturer of aircraft: its Embraer company ranks fourth in the world in the production of civil aircraft.

7 Financial Sector

In Latin American economies, the main driving force behind the reform and liberalization of the financial system was not private companies, but the State, which tried to adapt local financial systems to the requirements of the time. Another catalyst for change was economic crises, which have become a frequent phenomenon in the modern world economy, especially in Latin American countries.

Starting in the 1990s, the financial system in Latin American economies began to reform rapidly. The implementation of the “Brady Plan” (named for the US Treasury Secretary who proposed it—see chapter “[External Debt](#)”) to restructure the external debt of Latin American countries contributed to solving the problem of external debt, and the liberalization of domestic finance contributed to the reform of the financial system. But, despite the successes in some countries, such as Chile, in general, the results of transformations in this sector are modest. The financial sector has not been able to become a driver of economic development. Moreover, in the 1990s, the financial systems of the countries of the region were exposed to deep financial shocks and capital outflows, as evidenced by the crisis in Mexico in 1994 and in Argentina in 2002. Some countries, under this blow, even abandoned the national currency, switching to the use of the American dollar, for example, in Ecuador (Santiso, Dayton-Johnson 2012).

In the 2000s, the large economies of the region, taught by the bitter experience of the previous decades, began to pursue a more cautious monetary policy, following

the so-called strategy of self-insurance. Its meaning was to accumulate significant reserves on the part of central banks in order to be ready in case of an unfavourable situation to withstand the negative consequences of a sharp outflow of capital and lack of liquidity. This strategy allowed most countries of the region to face the crisis of 2008–2009 relatively calmly. However, despite the conditional “development of immunity” to external shocks, the financial system of Latin American countries is far from perfect and needs further reform.

The size of the financial sector in Latin America is significantly smaller than most developed countries, this applies to both the banking sector and the stock market. The basis of the financial system of the countries of the region is the banking system. With the exception of Chile, the stock market and the size of its capitalization in the countries of the region is small even compared to other developing countries, especially East Asian ones. Frequent financial crises in the region hinder the development in this sphere. The size of the Latin American financial system as a whole is about 150% of the region’s GDP. It is based on the banking system—60% of GDP, the stock market—40% of GDP and the bond market—50%. The main problem of the countries of the region is the small size of the financial sector, the exclusion of a large number of Latin American citizens from the financial system, as well as limited access to the private sector, mainly small and medium-sized enterprises, to foreign capital.

To measure the access of individuals to financial services, it is necessary to compare the proportion of the adult population over 15 years of age with the number of people who have an account in financial institutions. Unlike developed countries, where this indicator is more than 90%, in Latin American countries this value does not exceed 40% on average. Only in Brazil and Costa Rica is this figure more than 50%. The lack of access to financial services among the poorest segments of the population exacerbates inequality in society, putting them in a vulnerable position. Only 30% of Latin American adults use debit bank cards, and less than 20% use credit cards.

If we analyse the situation with legal entities, we can observe great difficulties in accessing the court capital of small and medium-sized enterprises. Only 40% of SMEs have access to bank loans, as due to the higher risk of business activities of SMEs, financial institutions rarely issue long-term loans to small businesses, providing mainly short-term loans.

The characteristic features of the banking systems of Latin American countries are the use of deposits by credit institutions as the main source for obtaining capital, a small level of correlation between deposits received and loans issued, and a low level of conversion of savings into savings. The banking sector, instead of financing the real sector of the economy, is mainly engaged in lending to state organizations: financial investments in government securities are a common practice. Although the privatization and deregulation of the banking industry in Latin America has significantly reduced the share of State-owned banks due to the entry of foreign players into the industry, state-owned banks still play an important role in the economy of the region.

The stock market in Latin America developed rapidly in the 1990s. Thanks to privatization and the influx of foreign capital on local sites, the supply and demand for shares of Latin American companies have increased. Nevertheless, the capitalization of the stock market is still small (see above). The only exceptions are Brazil and Chile, where the value of the stock market is much higher (68 and 73%, respectively, in 2020). The Brazilian B 3 (Brazil Stock Exchange) ranks 20th in the world by the capitalization of securities traded on it.

The underdevelopment of the Latin American stock market, in addition to its low capitalization, is evidenced by another criterion—the exchanges in the region are sufficiently limited. They are mainly quoted government bonds, as well as securities of large companies. Due to the underdevelopment of the Latin American stock market, many large companies, in order to attract additional capital, place their shares on major foreign stock exchanges, for example, in New York and London. The Latin American bond market is also small and, moreover, it is dominated by government securities, which prevent the conversion of savings into savings.

8 External Sector

Despite the strong export orientation of the region, the place of Latin American economies in world trade has been gradually declining since the second half of the twentieth century. The share of the region in the export of goods in 1950–2020 decreased from 11.6 to 5.4%, in the import of goods—from 9.8 to 5.1%.

This process can be explained by the raw materials orientation of exports, in which mineral resources and agricultural goods dominated for a long period of time. Although since 1980 the share of industrial goods in the exports of the countries of the region has increased from 18 to 49%, at the same time the share of knowledge-intensive goods in industrial exports remains at a fairly low level—14%.

The main exporters in the region are Mexico (44% of the total exports of Latin American countries), Brazil (22%), Chile (8%), Argentina (6%), Peru (4%) and Colombia (3%). At the same time, the main trading partners of Latin American countries are non-regional participants, and intra-regional exports of the region's countries account for 13.2% of total exports, intra-regional imports—13.9%.

The main export destinations of Latin American countries are North America (47% of total exports), East Asia (16%) and Europe (12%). The main import partners are North American countries (34% of total imports), East Asian countries (26%) and European states (15%).

Insignificant changes took place in the structure of exports of Latin American countries in the twenty-first century. The share of food products increased from 13 to 17%. The share of raw materials, except fuel, more than doubled—from 6 to 13%, although the share of mineral fuels, lubricants and derivatives from them decreased from 18 to 13%. The share of chemical industry goods remained unchanged—5%, but the contribution of machinery, equipment and mechanisms decreased—from 12 to 9%, as well as means of land transport—from 34 to 31%.

The structure of Mexico's exports differs significantly from the generalized data for the entire region. It is based on machinery and transport equipment—61.6% of the total volume of goods sold abroad. In Brazil, on the contrary, more than 50% of exports are agricultural goods and foodstuffs, as well as mineral fuels, lubricants and goods produced on their basis.

Latin American economies actively participate in the international capital movement. The volume of accumulated foreign direct investment in 2020 amounted to \$2.2 trillion, half of which was invested in the economies of Brazil (\$608 billion) and Mexico (\$591 billion). The countries of the region accumulated much less of their FDI abroad—\$770 billion.

In the international labour movement, the countries of the region act mainly as exporters. On average, migrants' remittances reach 2% of the region's GDP per year.

9 Social Sector

The negative side of liberalization and globalization was the preservation of chronic problems of Latin American countries in the social sphere (see Table 3). The index of human development in Latin American countries is 0.759. Such a low indicator can be explained by the fact that only one of its three components is at a high level—life expectancy at birth is 75.4 years. The remaining components are not very satisfactory: the average duration of training is 8.6 years, and GDP per capita by PPP is \$15,645 in 2020.

According to the UNDP methodology, the group of countries in the world with a very high level of human development includes only seven Latin American States: Chile (0.851), Argentina (0.845), Panama (0.851), Uruguay (0.817), the Bahamas (0.814), Barbados (0.814) and Costa Rica (0.810). The vast majority of the remaining countries (21 states) belong to the next group—countries with a high level of human development. But Guyana and the countries of Central America, with the exception of Costa Rica, belong to the group of countries with an average level of human development, and Haiti belongs to the group of countries with a low level of human development.

The poverty of a significant part of the population remains an acute problem. More than a third of Latin Americans live in poverty (204 million people), and 13.8% in extreme poverty (81 million people). One of the reasons for the high level of poverty is informal employment, which reaches 50% in the region, as well as the lack of pensions for most people of retirement age. Rural residents, indigenous peoples of Latin America and people of African descent are particularly affected by poverty.

According to FAO estimates, in Latin America, more than 42.5 million people (6.6% of the region's population) suffer from malnutrition. This problem is particularly acute in the Caribbean island States: Antigua and Barbuda, and Haiti, as well as in Bolivia, where more than 20% of the population is malnourished. At the same time, the Latin American region has not been spared a disease common in developed

Table 3 Key social indicators of Latin American countries in 2020

	Human Development Index	Expected prod life at birth, years	Expected duration of training, years	Average duration of training, years	GNI per capita, USD 2011 by PPP	Gini index	Population living below the poverty line in %, \$1.90 per day	Unemployment rate in %
Latin America and the Caribbean, total	0.759	75.4	14.5	8.6	13,857	0.460	–	10.5
Argentina	0.845	76.7	17.7	10.9	21,190	0.40	6.3	11.5
Brazil	0.765	75.9	15.4	8.0	14,263	0.52	5.1	13.5
Venezuela	0.711	72.1	12.8	10.3	7045	–	–	–
Colombia	0.767	77.3	14.4	8.5	14,257	0.55	19.2	15.1
Mexico	0.779	75.1	14.8	8.8	19,160	0.45	9.2	4.4
Peru	0.777	76.7	15.0	9.7	12,252	0.46	8.6	7.6
Chile	0.851	80.2	16.4	10.6	23,261	0.47	4.5	10.8

Source UNDP (2020). Human Development Report; United Nations Economic Commission for Latin America and the Caribbean

countries—the problem of obesity. The percentage of children suffering from this disease is growing every year.

Medical expenses in the region amount to 2.2% of GDP, which is not enough to ensure equal access to medical services for the entire population of the countries of the region. In 2000–2018, the infant mortality rate in the region decreased from 27 to 14.

Over the past 20 years, access to primary education has increased significantly in the region, although, according to UNESCO, more than 12 million children and adolescents in Latin America are still not attending school. Usually these are children and young people living in rural areas, or representatives of the indigenous population, or persons of African descent.

10 Conclusions

1. Latin American countries have a number of similar features, which makes it possible to unite them into one region of the world economy. The region's weight in world GDP by PPP is about 8%, it is one of the most advanced among the less developed regions of the world (second only to Central-Eastern Europe in per capita income), although the level of development here varies greatly. Brazil accounts for about a third of the region's GDP, Mexico is not far behind it, followed by Argentina, Colombia, Chile and Venezuela.
2. Under the influence of globalization and neoliberal ideas in the early 1990s, most Latin American countries began to move to a new model of economic growth. The economy was deregulated, financial markets and foreign trade were liberalized, restrictions on foreign capital were lifted and state property was privatized. The state sharply reduced the expenditure part of the budget, trying to maintain fiscal discipline. There has been a partial reorientation of economic development from internal to external factors.
3. The results of the neoliberal paradigm in Latin America were unsatisfactory. The main goal of the reforms—achieving accelerated economic growth and further modernization of economic systems—has not been achieved. In the new millennium, the countries of the region continue to search for an effective growth model.
4. The level of human capital development in Latin America lags significantly behind developed countries. On average, the majority of Latin Americans will study for only 8.5 years. The raw-material nature of the economies of most countries in the region hinders the development of human capital, since the demand for skilled labour is limited. In the last ten years, the sectoral structure of the Latin American economy has become more modern; however, it is still characteristic of less developed countries.
5. Despite the decrease in the share of agriculture in the formation of the GDP of Latin American countries over the past 50 years by more than 3 times, it continues to play an important role in the economy of the countries of the region,

- especially for employment and foreign trade. Agriculture structurally consists of a small number of efficiently functioning agricultural producers and a large peasant sector.
6. Latin America has a developed mining industry, which was formed with the decisive participation of foreign capital. Its characteristic feature is a weak connection with the local manufacturing industry, since the vast majority of the industry's products are exported. The machine structure is developed in the most advanced countries of the region, primarily in Brazil and Mexico.
 7. The size of the financial sector in Latin America is significantly smaller than most developed countries. The basis of the financial system of the countries of the region is the banking system. With the exception of Chile, the stock market and the size of its capitalization in the countries of the region is small, even compared to other developing countries, especially East Asian ones. Frequent financial crises in the region hinder the development of this sphere.
 8. Despite the strong export orientation of the region, the place of Latin American countries in world trade has been gradually declining since the second half of the twentieth century. This process can be explained by the raw materials orientation of exports, in which mineral resources and agricultural goods dominated for a long period of time. Although since 1980 the share of industrial goods in the exports of the countries of the region has grown from 18 to 49%, at the same time the share of knowledge-intensive goods among industrial remains at a fairly low level—14%.
 9. The negative side of liberalization and globalization was the preservation of the historical problems of Latin American countries in the social sphere. The poverty of a significant part of the population remains an acute problem. More than a third of Latin Americans live in poverty, and 10% live in extreme poverty.

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Abstract The chapter emphasises that Sub-Saharan Africa's economies continue to develop within the framework of a mixed economy, combining the market sector with semi-natural farms. In conditions of insufficiently developed private national entrepreneurship, foreign capital continues to occupy important positions in the economy. At the same time, the regulatory role of the state in the economic development of the region is increasing. The gap between the countries of the region, especially in industry, infrastructure, and the social sphere, persists and increases in some indicators

1 Introduction

The Sub-Saharan Africa (SSA) region, with a population of 1.1 billion people (2019), consists of four subregions (West Africa, East Africa, Central Africa, and Southern Africa), and comprises of 46 countries, 33 of which are assigned by the UN to the least developed countries (LDCs) group. In many ways, the factor of natural resources remains key for the economic development of the region, especially since deposits of almost all known types of minerals have been identified here.

Sub-Saharan African economies continue to develop within the framework of the mixed economy, combining the modern market sector with semi-natural farms. In conditions of insufficiently developed private national entrepreneurship, foreign capital continues to occupy important positions in the economy. At the same time, the regulatory role of the state in the economic development of the region is increasing. The gap between the countries of the region, especially in industry, infrastructure, and the social sphere, persists and increases in several indicators.

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2 Economic Systems in the Region

During the 60 years of independent development of the SSA states, their economic development strategies were repeatedly revised and the existing economic systems (economic models) were changed. The erosion of the traditional economic system that had prevailed in most of these countries was influenced by opposing factors: on the one hand, the strengthening position of the national state in the economy, and on the other, dependence on foreign trade conditions and access to external financial resources.

In the post-colonial period, there were four stages in the search for economic development models by African countries:

- 1960–1970: the choice between capitalist and socialist models. Despite the differences between them, the public sector took the leading position in all SSA countries.
- 1970–1980: the implementation of the self-reliance policy, which assumed accelerated industrialisation, was generally unsuccessful due to a sharp drop in world prices for raw materials and the subsequent decline in GDP growth, as well as a significant reduction in agricultural production, which provoked large-scale hunger, malnutrition, and unemployment.
- 1980–1990: implementation of reforms (under the IMF and World Bank programmes) aimed at state property privatisation, foreign trade, and pricing liberalisation. The combination of a gradual increase in world prices for mineral raw materials and the cancellation of debts by international creditors to some African States contributed to the acceleration of their economic growth and the introduction of the principles of free enterprise. At the same time, this increased income inequality, unemployment, and reduced social services.
- 2000–2010: the development of a fundamentally new approach to strategic planning at the national, regional, and continental levels and the implementation of several institutional reforms in the financial, social, and environmental spheres. This had a positive impact on the economic growth (up to 6% per year) and a noticeable increase in real per capita income (from 2.0 to 9.7% per year) in half of the African countries. The traditional and multi-structure system was replaced by a mixed economy combining the market system, with semi-natural farms dominating the agricultural sector and the service sector. This allowed the SSA countries to advance in catch-up development and increase their international competitiveness.

In conditions of insufficiently developed national entrepreneurship, foreign capital continues to occupy key positions in African economies. At the same time, the regulatory role of the state in the economic and social development of African countries is increasing, and new opportunities are emerging for them to conduct variable macroeconomic policies. There is also opportunities for strategic planning through the adopted pan-African development strategies: the New Partnership for Africa's Development (NEPAD, adopted in 2002) and Agenda 2063 (adopted in 2013). This

is a global strategy to optimise the use of Africa's resources for the benefits of all Africans and is designed for accelerated development from the 50-year perspective and technological progress of the continent based on changes in the sectoral structure of the economy, in foreign trade and investment policy, with mandatory consideration of social aspects (About Agenda 2063).

3 Proportions and Efficiency of Economic Development

The state of the key indicators of the SSA countries indicates a significant cross-country unevenness. First, this is evidenced by the value of GDP in general and per capita in different countries of the region (Table 1).

Table 1 Socio-economic indicators of some economies in SSA, 2020

	Population, million	GDP PPP, \$ billion	GDP PPP per capita, \$
<i>West Africa</i>			
Cote d'Ivoire	26.4	144.2	5466
Ghana	31.1	178.5	5744
Mali	20.3	47.5	2348
Nigeria	206.1	1063.1	5186
Senegal	16.7	58.7	3502
<i>East Africa</i>			
Ethiopia	115.0	278.6	2423
Kenya	53.8	248.2	4578
Madagascar	27.7	42.8	1544
<i>Central Africa</i>			
Central African Republic	4.8	4.8	988
Chad	16.4	26.3	1602
Congo DR	89.6	102.3	1142
Gabon	2.2	33.6	15,106
Equatorial Guinea	1.4	25.2	17,941
<i>Southern Africa</i>			
Botswana	2.4	36.4	15,459
Lesotho	2.1	5.2	2444
South Africa	59.3	792.4	13,361

Source World Bank Open Data. <https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD?view=chart>

The sectoral structure of African countries indicates that the vast majority of them have not yet started active industrialisation (which is characterised by a high share of the manufacturing industry), but are at a lower stage. In almost all African countries, the share of agriculture and extractive industries (mining) is very large, amounting to 41–54% of their GDP (Table 2). Their share is lower only in South Africa and Botswana, but rather due to a large share of services than the manufacturing industry.

Therefore, it is not surprising that Sub-Saharan African countries occupied low places in the latest WEF ranking (Table 3).

4 Business Structure

The SSA represents enterprises of various types and forms of ownership, including affiliates of multinational enterprises (MNEs), small and medium-sized enterprises (SMEs), and the state-owned enterprises (SOE). The latter often play a particularly significant role in the African economy, especially in Nigeria, Angola and some other mineral-rich countries. In general, in the region, SOEs are concentrated not only in the mining industry, but also in the electric power industry, transport, foreign trade, and less often in agricultural production (Algeria, Angola, Zambia, Mozambique, and Sudan).

Three Examples of State-Owned Oil Companies in SSA

Nigerian National Petroleum Corporation (NNPC, established in 1977). Africa's largest local oil and gas company, which regulates Nigeria's oil and gas industry by cooperating with oil MNEs through joint ventures and production sharing agreements.

The National Oil Corporation of Kenya (NOK, 1984) is a fully integrated state-owned corporation.

Guinea Equatorial de Petr6leos (GEPetrol, 2001) represents the state in an industry that was created by foreign MNEs. The share of state participation in oil production increased from 3–6% to 20–30%.

The number of public–private enterprises has been growing in the region by combining public and private financial resources, knowledge, and experience—usually in the sectors of ICT; electric power, including the development of renewable energy sources; water supply; education; and healthcare. For example, the total volume of public–private investments in the electric power industry reached \$3.9 billion in the 2010s.

Foreign MNEs invest, as a rule, in long-term projects for the development of the energy and raw materials complex and modern industries, and less often in the creation of fundamentally new high-tech industries (computers, communications, etc.). In some LDCs with high economic, political, and conflict risks, FDI inflow remains insignificant, except in cases of acute competition of MNEs for access to hydrocarbon and uranium deposits (Langan, 2018). In general, enterprises with

Table 2 Contribution of economic sectors to GDP in some African countries, 1990–2020,

Economy	Sector	1990	2000	2010	2020
<i>West Africa</i>					
Cote d'Ivoire	Agriculture	32.5	16.2	17.5	21.4
	Extractive industries	26.3	13.9	16.0	20.9
	Manufacturing	17.5	11.2	9.0	11.2
	Services	41.2	34.7	37.8	42.1
Ghana	Agriculture	44.8	35.3	28	19.3
	Extractive industries	16.8	25.4	18.0	29.7
	Manufacturing	9.8	9.0	6.4	10.5
	Services	37.9	28.8	48.2	45.0
Nigeria	Agriculture	21.6	21.4	23.9	24.1
	Extractive industries	35.4	33.8	25.3	28.2
	Manufacturing	17.8	13.9	6.6	12.7
	Services	42.0	43.8	50.8	46.4
Senegal	Agriculture	18.5	16.4	15.9	17.0
	Extractive industries	22.2	24.0	21.8	23.2
	Manufacturing	–	20.8	15.6	14.0
	Services	51.2	50.6	52.4	49.9
<i>East Africa</i>					
Ethiopia	Agriculture	49.5	44.7	41.4	35.5
	Extractive industries	9.3	11.4	9.4	23.1
	Manufacturing	4.6	5.6	4.0	5.3
	Services	36.3	37.4	41.8	36.8
Kenya	Agriculture	25.3	28.7	17.6	23.0
	Extractive industries	16.3	15.0	18.6	17.4
	Manufacturing	10.1	10.3	11.2	7.6
	Services	–	–	57.0	53.6
Zambia	Agriculture	18.2	16.1	9.4	3.0
	Extractive industries	45.3	23.2	32.2	40.3
	Manufacturing	31.9	9.5	7.6	7.7
	Services	24.8	49.0	52.8	53.6
<i>Central Africa</i>					
Angola	Agriculture	–	5.7	6.2	9.5
	Extractive industries	–	72.1	52.4	45.9
	Manufacturing	–	2.9	4.5	6.8
	Services	–	22.2	41.9	39.6
Congo, Republic of the	Agriculture	12.9	5.3	4.0	9.6

(continued)

Table 2 (continued)

Economy	Sector	1990	2000	2010	2020
	Extractive industries	40.6	72.2	66.2	31.0
	Manufacturing	8.3	3.5	5.3	...
	Services	46.5	22.5	25.4	53.7
Equatorial Guinea	Agriculture	–	–	1.1	3.0
	Extractive industries	–	–	74.7	45.2
	Manufacturing	–	–	21.0	20.7
	Services	–	–	24.7	51.7
Gabon	Agriculture	7.3	6.2	3.9	6.7
	Extractive industries	43.0	56.3	55.2	40.7
	Manufacturing	5.6	3.7	17.1	18.3
	Services	49.7	37.5	30.8	45.7
<i>Southern Africa</i>					
Botswana	Agriculture	4.5	2.8	2.5	2.1
	Extractive industries	56.9	46.3	31.9	27.5
	Manufacturing	4.8	5.6	6.4	5.6
	Services	31.8	42.7	55.0	65.2
South Africa	Agriculture	4.2	2.6	2.1	2.5
	Extractive industries	36.4	28.2	25.3	23.4
	Manufacturing	21.6	19.0	13.9	11.7
	Services	50.5	61.2	64.3	64.6
<i>Sub-Saharan Africa, total</i>	Agriculture	19.4	15.5	15.7	18.5
	Extractive industries	31.3	28.7	27.2	26.4
	Manufacturing	16.0	14.0	9.9	11.2
	Services	43.9	49.3	51.1	48.7

Source World Bank Open Data. <https://databank.worldbank.org/reports.aspx?source=2&series=NY.GDP.MKTP.CD,NV.AGR.TOTL.ZS,NV.IND.TOTL.ZS,NV.IND.MANF.ZS,NV.SRV.TETC.ZS,NV.SRV.TOTL.ZS>

the participation of foreign capital demonstrate high rates of economic growth and business efficiency.

Even in manufacturing, setting aside agriculture and services, more than 70% of jobs are in low-productivity SMEs, mainly related to the informal sector. SMEs are experiencing difficulties in obtaining loans, and organising and operating production due to the imperfection of the legal, primarily tax, system. Their products are mainly supplied to the domestic market, and much less often to the regional market. In West Africa, for example, SMEs produce more than 30–50% of GDP and play a very important role in creating jobs and, accordingly, in reducing unemployment and mitigating acute social problems.

Table 3 Global competitiveness rating of Sub-Saharan countries, 2018

Rating position	Country	Value, in points
49	Mauritius	63.7
67	South Africa	60.8
90	Botswana	54.5
93	Kenya	53.7
106	Ghana	51.3
113	Senegal	49.0
114	Cote d'Ivoire	47.6
115	Nigeria	47.5
118	Zambia	46.1
122	Ethiopia	44.5
125	Mali	43.6
130	Lesotho	42.3
135	Congo DR	38.2
137	Angola	37.1

Source WEF (2018). <https://weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf>

5 Human Capital and Innovations

The problem of the development and use of labour resources in Africa exist due to the huge excess of labour supply (due to the rapid growth of the able-bodied population) over demand. The situation is aggravated by the widespread underemployment, especially in rural areas, the increase in migration from villages to cities, the swelling of the informal economy, the growth of unemployment among educated youth and human capital flight, as well as the enormous amount of poverty and inequality.

The rates of open unemployment much higher than the global average: on average, according to the SSA, it is more than 6%. At the same time, informal employment accounts for about 86% of the total number of employed (it is even higher among working women and youth), which is the highest indicator in the world, including 40% in Southern Africa and more than 90% in Central, East, and West Africa.

According to The Human Capital Index, SSA countries use only 55% of their human potential (the global average is 65%), and the share of highly qualified employees is only 6% (the global average is 24%) (WEF, 2017).

6 Real Sector

6.1 Agriculture

Agriculture plays a major role in the economy of most SSA countries. At the same time, a significant part of agricultural production consists of individual non-commodity farms, the main form and purpose of which is subsistence farming.

Plantation tropical agriculture (the cultivation of cocoa beans, coffee, sisal, tea, root crops, fruits and nuts, natural rubber, and cotton) retains a special place in the agricultural economy of several SSA countries, but at the same time, the region's share in global exports of these crops is not growing.

In conditions of rapid population growth, the production of crops for domestic consumption, especially cereals, cane sugar, meat and dairy, and fish products, often does not even meet the domestic needs of these countries. Accordingly, the food problem is not being solved: in 2019, the SSA recorded the largest number of people suffering from chronic malnutrition among all regions of the world (56.8%). In addition to rapid population growth, climate change, declining agricultural productivity, and accelerating urbanisation cannot but affect this situation (AfDB, 2016). In the context of the growing outflow of labour (mainly young people) from villages, the priority tasks of governments are to reclaim agricultural land and train agricultural specialists, as well as train farmers in modern farming methods.

6.2 Mining

The main mining areas in SSA are those adjacent to the Gulf of Guinea (gold, diamonds, iron, graphite, oil, gas, and various metals); the region between Northern Zambia and Southern Democratic Republic of Congo (the Copperbelt, as well as large reserves of zinc, cobalt, lead, gold, and silver); Southern Africa (the region of Botswana, Zimbabwe, and South Africa with the largest production of gold, uranium, and diamonds).

Hydrocarbon is primarily produced in Angola and Nigeria, as well as in 13 other SSA countries, including DR Congo, Gabon, Ghana, Chad, Equatorial Guinea, and South Sudan. The oil complex plays a crucial role in ensuring the economic growth of Nigeria and Equatorial Guinea.

6.3 Manufacturing

About 80% of manufacturing production is accounted for by 10 countries, among which the highest rates of average annual growth were demonstrated by Gabon, Nigeria, Ghana, Cote d'Ivoire, and Kenya (Table 4).

Table 4 Manufacturing value added (MVA) in leading SSA countries, 2010–2019

	MVA, \$ billion		MVA average annual rate growth, %	Share of finished products in exports, %
	2010	2019	2000–2019	2019
Nigeria	21.1	53.8	5.1	10.7
South Africa	48.8	42.2	1.6	43.0
Congo DR	3.5	10.1	2.3	–
Kenya	4.4	7.6	3.4	30.8
Cote d’Ivoire	3.2	7.0	3.8	9.9
Gabon	2.4	6.8	15.0	–
Ghana	1.9	6.7	4.3	5.2

Source World Bank Open data. <https://wdi.worldbank.org/tables2020>, Tables 4.1–4.4

However, low-tech industries are leading in the structure of manufacturing: agricultural product processing; the production of textiles, clothing, leather, and footwear products; building materials, and woodworking. Products with a high degree of processing play a significant role in the economy and export structure of only two countries—South Africa and Kenya. Nevertheless, there is a tendency in the region to expand the medium and high-tech manufacturing segment, primarily that of electrical and telecommunications equipment, medical and measuring devices, and chemical and automotive assembly industries.

6.4 Infrastructure

While occupying the lowest positions in the world in terms of infrastructure provision, the SSA region needs large-scale financing for this sector. In the 2000s, the African Union and the African Development Bank (AfDB) launched the Programme for Infrastructure Development in Africa (PIDA), designed to develop regional and continental economic infrastructure, primarily transport, until 2030. Among the earliest results were: the construction and modernisation of sectors of the Trans-African Highway network, which includes 10 routes with a total length of about 59,100 km (23,000 km of them are ready); railway construction is the most active in East Africa, the LAPSSET project is designed to provide transport communication between intra-continental markets and the ports of Dar es Salaam (Tanzania), Mombasa and Lamu (Kenya); the formation of a Single African Air Transport Market (SAATM) to provide air traffic between the capitals and create a continental air transportation market. Various projects have also been launched in such areas as subregional energy pools, ICT, and transboundary water resources.

7 Financial Sector

In most African countries, especially in LDCs, more than 80% of all assets of the national financial system are accounted for by the banking sector.

In recent decades, the growing independence of the SSA central banks' monetary policy has increased the importance of market instruments and decreased the role of administrative control methods. Nevertheless, the policy of "credit ceiling" is often implemented in favour of priority industries, such as housing construction, for which financing (for example, in Kenya and Nigeria) in some periods was increased from 20 to 80% of the total volume of bank loans. Regional central banks (Banque Centrale des États de l'Afrique de l'Ouest, BCEAO, and Banque des États de l'Afrique Centrale, BEAC) issue a single currency (CFA franc) and conduct a coordinated monetary policy in their integration communities.

Commercial banks are a key element of the African credit and banking system. The increase in the number of their branches and liquidity, as well as the introduction of innovative technologies (mobile banking, etc.), are associated with the accelerating economic growth of the SSA countries since the 2000s.

The number of local banking groups with branches in several countries (Pan-African banks) has also increased, mainly in the leading countries (South Africa, Nigeria, and Kenya). In the scale of their activities (covering 80% of the SSA territory, with a number of branches in at least 10 SSA countries) they often surpass the leading Western transnational banks, although in terms of capital, assets, etc., are significantly inferior to them.

Microfinance institutions (MFI) are playing an increasingly prominent role in meeting the financial needs of the poor. In the whole region, the share of their assets to GDP is 1.3% (6% in commercial banks), although in some countries—South Africa, Kenya, Benin, Guinea, Tanzania, and Ghana—it is significantly higher.

A few stock exchanges, as well as other non-bank financial institutions (insurance companies, investment companies, real estate firms, pension funds, leasing companies, and postal and savings banks), represent narrow segments of the financial sector. Only the Johannesburg Stock Exchange is of great importance, whose individual capitalisation is many times higher than the combined of all other exchanges in the region.

A notable element of the financial sector in SSA is the activity of established national Development Banks (DBs), in which the state owns from 51 to 100% of the shares, and the rest belongs to private, mostly foreign, shareholders. Although they are inferior in terms of assets to DBs in other regions of the world, most African governments see them as a tool to promote economic development. At the same time, DBs remain significantly dependent on the state budget and transfers, due to a high level of troubled loans and a weak financial position. The SSA also has subregional DBs, which are important tools for coordination and interstate regulation of economic development within the regional economic communities of the SSA countries: West African DB (BOAD), DB of Central African States (BDEAC), East African DB (EADB), and Trade and Development Bank of the COMESA (TDB). The loans

allocated by them are intended mainly for the implementation of large interstate projects in the field of infrastructure, ecology, etc. In the 2010s, the activities of the African Development Bank (AfDB), whose shareholders are 54 African and 27 non-regional countries, intensified. The total assets of the Bank at the end of 2019 amounted to \$49 billion, and the total amount of approved loans, grants, etc., was \$7.0 billion.

8 External Sector

8.1 Foreign Trade

African foreign trade, as well as the economy of the region in general, is dominated by South Africa (in 2020 it accounted for 21.1% of the Africa-wide region's foreign trade turnover), Nigeria (10.6%), as well as Angola (4.3%), Ghana (2.9%), and Côte d'Ivoire (2.3%). The main foreign trade partners of the SSA countries are the EU (27% of trade turnover), China (16%), and the USA (5%)

SSA states have significant differences in the commodity structure, volumes, and price dynamics of foreign trade. Oil exporting countries (primarily Nigeria, Equatorial Guinea, Gabon, and Chad) and numerous mineral exporting countries stand out (Table 5).

8.2 Capital Flows

FDI remains one of the main sources of investment for the region, especially in the extractive industries (Table 6).

The main foreign direct investors in the economy of the SSA countries are currently the leading developed countries, as well as China (accumulated FDI in 2020 reached \$100 billion), UAE, India, and South Africa. The high dependence of African countries on the inflow of foreign private capital often increases instability and constrains economic growth due to excessive public consumption or speculative financial transactions, which complicates the maintenance of the balance of payments and financing the development.

8.3 Foreign Aid and External Debt

The SSA countries are extremely dependent on external financial revenues, especially from the IMF, as well as from transnational banks with 215 branches in the region

Table 5 Commodity structure of SSA countries' exports, 2001–2020

	Main product		The second most important product					
	Product group 1	Share in total exports value, %	Product group 2	Share in total exports value, %				
				2001	2011	2020		
<i>West Africa</i>								
Burkina Faso	Precious metals	0.7	77.43	81.6	Cotton	58.17	11.8	6.06
Cote d'Ivoire	Cocoa	35.92	37.64	41.51	Petroleum products	14.84	24.33	10.28
Ghana	Precious metals	36.95	64.38	42.31	Cocoa	18.45	18.65	16.62
Mali	Precious metals	67.64	71.24	92.84	Cotton	14.01	8.72	0.98
Mauritania	Ores, slag, and ash	58.94	64.18	62.65	Fish	38.65	15.88	22.48
Niger	Ores, slag, and ash	40.77	62	22.86	Precious metals	0.03	8.38	50.61
Nigeria	Petroleum products	99.66	89.16	88.7	–	–	–	–
<i>East Africa</i>								
Kenya	Coffee, tea, mate, and spices	36.15	24.09	24.39	Plants and flowers	10.07	8.71	10.54
Madagascar	Coffee, tea, mate, and spices	25.49	14.8	30.45	Clothing	29.59	22.93	20.01
Malawi	Tobacco	58.31	39.97	52.83	Sugar	14.37	15.08	9.73
Mauritius	Clothing	54.21	39.07	25.45	Sugar	17.86	13.61	12.13
Mozambique	Aluminium	54.55	45.11	22.07	Petroleum products	8.24	16.28	43.06
Rwanda	Coffee, tea, mate, and spices	16.95	32.27	13.75	Precious metals	0	0	68.83
Seychelles	Ready-made products from meat, fish	65.09	26.7	76.26	Petroleum products	0.01	20.37	7.15
Somalia	Live animals	14.84	75.65	23.46	Wood	27.63	9.85	0.01
South Sudan	Petroleum products	–	–	82.6	Precious metals	–	–	13.02
Tanzania	Precious metals	33.16	37.26	49.54	Fruits and nuts	7.52	2.72	6.3

(continued)

Table 5 (continued)

	Main product			The second most important product				
	Product group 1	Share in total exports value, %		Product group 2	Share in total exports value, %			
		2001	2011		2020	2001	2011	2020
Uganda	Coffee, tea, mate, and spices	29.09	25.38	14.48	Precious metals	11.26	0.35	43.86
Zambia	Copper	51.26	75.31	73.52	-	-	-	-
<i>Southern Africa</i>								
Botswana	Gems	85.06	76.76	89.3				
Lesotho	Clothing	53.21	55.81	44.44	Gems	0.02	3.15	32.73
Namibia	Precious metals	33.69	23.83	21.4	Ores, slag and ash	7.29	12.53	13.97
South Africa	Precious metals, Gems	11.8	22.33	23.29	Ores, slag and ash	4.1	13.24	14.87
<i>Central Africa</i>								
Angola	Petroleum products	23.95	98.14	92.94	Gems	68.7	1.82	5.96
Cameroon	Petroleum products	51.9	0.55	44.24	Cocoa	8.3	28.72	18.3
Central African Republic	Precious metals, Gems	65.14	63.18	41.62	Wood	18.6	25.17	18.23
Chad	Petroleum products	-	97.57	81.07	Precious metals	-	-	12.76
Congo, Republic of the	Petroleum products	-	78.65	75.11	Ships	-	18.45	14.3
Equatorial Guinea	Petroleum products	89.27	92.42	89.92	Organic Chemicals	3.13	2.74	6.02
Gabon	Petroleum products	82.95	77.07	58.55	Ores, slag and ash	1.49	6.95	26.65

Source [https://www.trademap.org/Product_SeIProduct_TS.aspx?nvpm=1%7c%7e%7c%7e%7cTOTAL%7c%7c%7c1%7c1%7c2%7c1%7c1%7c1%7c1%7c4%7c1%7c1](https://www.trademap.org/Product_SeIProduct_TS.aspx?nvpm=1%7c%7e%7c%7e%7cTOTAL%7c%7c%7c1%7c1%7c2%7c1%7c1%7c1%7c1%7c1%7c4%7c1%7c1)

Table 6 FDI in Sub-Saharan Africa, 2014–2020, \$ million

	2014	2016	2018	2019	2020	FDI stock
Africa	53,908	46,249	45,374	47,143	39,785	658,343
West Africa	12,121	11,725	8100	11,958	9768	217,280
Benin	406	132	194	218	176	2833
Burkina Faso	356	391	268	163	149	3020
Cote d'Ivoire	439	578	620	936	509	12,237
Gambia, The	36	–28	52	44	46	519
Ghana	3357	3485	2989	3879	1877	41,882
Guinea	77	1618	353	44	325	5063
Guinea-Bissau	29	24	21	72	20	317
Liberia	277	453	129	87	87	8883
Mali	144	356	467	721	308	6011
Mauritania	501	271	773	887	978	9973
Niger	823	301	467	721	308	8189
Nigeria	4664	3453	775	2305	2385	102,094
Senegal	403	472	848	1065	1481	8673
Sierra Leone	375	138	218	368	349	2433
Togo	54	–46	–183	346	639	2690
Southern Africa	17,827	6978	4469	5051	4252	239,061
Botswana	515	143	286	94	80	5454
Eswatini (Swaziland)	26	21	36	130	41	877
Lesotho	95	159	129	118	102	923
Namibia	441	356	209	–179	–75	6071
South Africa	5771	2235	5450	5125	3106	136,735
East Africa	6615	8302	8054	7726	6461	92,730
Burundi	47	1	1	1	6	234
Comoros	5	4	6	4	9	138
Djibouti	153	160	170	222	240	1988
Eritrea	47	52	61	67	74	1196
Ethiopia	1855	4143	3310	2549	2395	27,351
Kenya	821	1139	1139	1098	717	10,010
Madagascar	314	451	353	474	359	8339
Malawi	387	116	959	822	98	1590
Mauritius	456	379	461	471	246	5720
Mayotte	–	–	–	–	–	–
Mozambique	4902	3093	2703	2212	2337	45,384

(continued)

Table 6 (continued)

	2014	2016	2018	2019	2020	FDI stock
Reunion	–	–	–	–	–	–
Rwanda	459	342	382	354	135	2636
Seychelles	230	155	120	144	122	3285
Somalia	261	330	408	447	464	3616
South Sudan	44	–8	60	–232	18	136,735
Tanzania	1416	864	972	991	1013	16,559
Uganda	1059	626	1055	1259	823	14,528
Zambia	1489	663	408	548	234	19,368
Zimbabwe	545	372	745	280	194	5907
Central Africa	5306	5403	9354	8858	9177	109,273
Angola	3658	–180	–6456	–4098	–1866	16,752
Cameroon	727	664	762	1027	488	9026
Central African Republic	3	7	18	26	35	718
Chad	–676	245	461	567	558	7053
Congo, Democratic Republic of the	1843	1205	1617	1488	1647	27,279
Congo, Republic of the	1659	1612	4315	3366	4016	32,962
Equatorial Guinea	168	54	396	452	530	15,094
Gabon	1048	1244	1379	1553	1717	13,957
São Tomé and Príncipe	27	31	23	24	47	314

Sources UNCTAD. World Investment Reports 2015–2020. https://unctad.org/system/files/official-document/wir2021_en.pdf, pp. 248–249

2014 https://unctad.org/system/files/official-document/wir2020_en.pdf, pp. 238–239

Accumulated FDI, \$ billion https://unctad.org/system/files/official-document/wir2021_en.pdf, pp. 252–253

(35 of them are controlled by US banks, and 180 by banks in Western Europe, mainly France and the UK).

The total foreign debt of the SSA countries (mainly the public and publicly guaranteed debts) is steadily increasing (from \$199 billion in 2009 to \$702 billion in 2020) and has almost equalled their GDP. In its service, it annually spends more than 30% of the proceeds from the export.

8.4 Remittance Inflows

In recent years, remittance non-profit inflows by labour migrants from the foreign states to their home country in SSA had increased significantly, surpassing FDI and foreign aid. These funds tend to provide a stable source of much-needed external funding and play an important role in poverty reduction (Table 7).

Table 7 Value of remittances sent to SSA in 2017 and 2020, \$ billion

	2017	2020
Nigeria	22.3	17.2
Ghana	2.2	3.6
Kenya	1.8	3.1
Senegal	2.3	2.6
DR Congo	–	1.9
Somalia	–	1.7
Zimbabwe	–	1.2
Uganda	1.2	1.1

Source Remittances to Sub-Saharan Africa by country 2020|Statista

The highest-cost remittance corridors (2019) within SSA are from South Africa (SA) to Lesotho; SA to Botswana; SA to Angola; Angola to Namibia; and Ghana to Nigeria.

8.5 Labour Migration

The total number of intra-African migrants reached more than 21 million people in 2019. This is primarily due to West and Central African countries, between which strong economic ties remain and integration measures are being intensified (for example, the visa-free travel between the member states of ECOWAS). Labour migrants move from poorer countries (Niger and Mali) to richer countries (Ghana and Côte d'Ivoire), finding employment in sectors with low-skilled employment (domestic work, informal trade, and agriculture), as well as from rural areas to large cities with a rapidly growing population. Seasonal migration is widespread in agricultural areas.

9 Social Sector

The standard and quality of life of the majority of the SSA population are closely interrelated with overcoming poverty. Meanwhile, the number of hungry people in SSA reached 264 million people in 2020, or 22.8% of all residents, and 56.8% do not receive sufficient nutrition.

The problem of social inequality is closely intertwined with the problem of poverty. The Gini coefficient (0–1), reflecting the level of inequality in the distribution of the population's income, retains the highest value among African countries for South Africa (0.63).

10 Conclusions

1. In conditions of insufficiently developed national entrepreneurship, foreign capital continues to occupy key positions in African economies. At the same time, the regulatory role of the state in the economic and social development of African countries is increasing. But even in manufacturing, setting aside agriculture and services, more than 70% of jobs are in low-productivity SMEs, mainly related to the informal sector.
2. The state of the key indicators of the SSA countries indicates a significant cross-country unevenness. First of all, this is evidenced by the value of GDP in general and per capita in different countries of the region. The sectoral structure of African countries indicates that the vast majority of them have not yet started active industrialisation (it is characterised by a high share of the manufacturing industry), but is at a lower stage—in almost all African countries, the share of agriculture and extractive industries is very large.
3. The severity of the problem of the development and use of labour resources in Africa is maintained due to the huge excess of labour supply (due to the rapid growth of the able-bodied population) over demand. The situation is aggravated by widespread underemployment, especially in rural areas, the increase in migration from villages to cities, the swelling of the informal economy, the growth of unemployment among educated youth, and human capital flight, as well as the enormous amounts of poverty and inequality.
4. Agriculture plays a major role in the economy of most SSA countries. At the same time, a significant part of agricultural production consists of individual non-commodity farms, the main form and purpose of which is subsistence farming. As a result, food production in the region does not meet its needs.
5. Low-tech industries are leading in the structure of manufacturing: processing agricultural products, the production of textiles, clothing, leather, and footwear products, building materials, and woodworking. Products with a high degree of processing play a significant role in the economy and export structure of only two countries—South Africa and Kenya.
6. In most African countries, the banking sector accounts for more than 80% of all assets of the national financial system. Central banks often implement a credit ceiling policy in favour of priority industries, and housing construction.
7. African foreign trade, as well as the economy of the region in general, is dominated by South Africa (in 2020 it accounted for 21.1% of the region's Africa-wide foreign trade turnover), Nigeria (10.6%), as well as Angola (4.3%), Ghana (2.9%), and Côte d'Ivoire (2.3%). The main foreign trade partners of the SSA countries are the EU (27% of trade turnover), China (16%), and the USA (5%).
8. The main foreign direct investors in the economy of the SSA countries are currently the leading developed countries, as well as China (the accumulated FDI in 2020 reached \$100 billion), UAE, India, and South Africa. The total foreign debt of the SSA countries (mainly the public and publicly guaranteed debt) is steadily increasing (from \$199 billion to \$702 billion in 2009–2020)

and has almost equalled their GDP. In its service, it annually spends more than 30% of the proceeds from the export.


9. The total number of intra-African migrants reached more than 21 million people in 2019, primarily in the West and Central Africa countries, between which strong economic ties remain and integration activities are being intensified.
10. The number of hungry people in SSA reached 264 million in 2020, or 22.8% of all residents, and 56.8% who do not receive sufficient nutrition. The problem of social inequality is closely intertwined with the problem of poverty.

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Russia and Other Post-Soviet Economies



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Abstract The chapter examines the economic systems of large post-Soviet states. In addition to analysing economic dynamics, proportions and business structure, much attention is paid to human capital. The second part of the chapter examines the real, financial, external and social sectors of these economies.

1 Introduction

After the collapse of the USSR, post-Soviet countries followed the path of building a market economy, but the economic systems of these countries are diverse, which affects their economic dynamics and proportions. The difference in their economic development is largely determined by the difference in their human capital and also affects their real, financial and social sectors. Besides, these states are building their economy under the strong influence of the global economy. The chapter considers most post-Soviet countries besides Baltic states (considered in chapter “[European Union](#)”).

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2 Economic Systems in the Region

2.1 *Russian Economic System*

On the one hand, it is an economy with significant human capital (good innovation potential, a good level of education and ICT), a large market and abundant natural resources. On the other hand, it is an economy with a weak institutional environment (corruption, poor security of property rights), low efficiency of the product market (primarily due to its strong monopolization), an immature financial system (unstable banks, a small stock market) and a not very healthy and almost non-growing population (see chapter “[World Economy Major Trends: Evolution of National Economic Systems](#)”).

The main characteristics of the national economic system (model) are the ratio of business forms and the independence of economic agents, especially the freedom of entrepreneurship (see chapter “[World Economy Major Trends: Evolution of National Economic Systems](#)”). In Russian business, large public and private companies dominate, and the weight of small and medium-sized businesses is low. The state dominates private business not so much directly—through the budget and the public sector (although in a number of highly profitable areas—oil and gas, banking—the public sector is very large), but indirectly—through the state machine. As a result, the freedom of entrepreneurship in many industries is constrained, not so much because of legislation (the creation of new businesses is not difficult) but because of the constant interference of the state in all activities of an already functioning private business and often for corrupt purposes. Moreover, the legislation also contributes to such interference, because many laws in the country are not of direct action, but framework ones that establish only general principles and therefore require by-laws from government agencies.

Dominating private business, the Russian state prefers big business, which is confirmed by the low effectiveness of the antimonopoly policy. State protection of large Russian companies is due, not only to the fact that since Soviet times they have defined the face of many industries, but also to the fact that the top of the Russian bureaucracy are patrons or co-owners of a number of large Russian companies. Speaking in political economy terms, the Russian bureaucracy receives political (administrative) rent due to its large political power, which allows it to strongly control business as well as society.

The desire of the state machine to control business is also explained by the weak property rights in Russia (113th place in the world, according to the WEF), which allows the state to manipulate businesses. Such a situation greatly reduces the entrepreneurial resource, forcing businesses to adapt, not only to competition, but also to government officials, on whom the fate of a particular firm often depends. And as a result, business does not actively seek long-term investments, not actively engaged in innovation and is strongly exposed to rent-seeking behaviour, which can be provided by a connection with the authorities.

Private and semi-public business, which is under the patronage of state power, is not effective enough (“inefficient owner” of its assets). It gets the right to exist from the bureaucracy in exchange for recognizing “the rules of the game” that is beneficial to it, as well as for bribes. But such a business is effective for many private owners and their unofficial co-owners, bringing them considerable profit due to the monopolization of many profitable spheres of economic activity, primarily the extraction of natural resources and the use of state budget funds.

So, the current Russian economic system is characterized by the intertwining of the state machine with business, especially large business, with the dominance of the state. Capitalism is multivariate, and therefore one can call the Russian version of capitalism as state capitalism, adding that due to the noticeable intertwining with big business (highly concentrated in the hands of individuals, called oligarchs in Russia) this is oligarchic state capitalism. It should be noted that the predominance of state power over private owners (the system of power-property, in which political leadership gives the right to dispose of property) has been observed in Russia for many centuries, being an important element of “Eastern despotism”.

Such a type of state capitalism is aimed not so much at modernizing the country by using the power of the state, as at using this power in the interests of the bureaucracy and companies close to it, mainly large ones. This coalition of rent-oriented forces advocates such modernization of the country that would preserve their power over the economy and policy. Hence, the indecisiveness in carrying out economic reforms or their imitation, and as a result, neither pro-liberal nor pro-Keynesian reforms have been carried out decisively in the last two decades. The ruling bureaucracy is more interested in maintaining the status quo than in economic and political reforms.

Largely as a result, Russia is an illustration of “Dutch disease” with all its advantages (large revenues from the export of raw materials) and disadvantages (instability of these incomes and suppression of domestic market-oriented industries, primarily manufacturing). The inability to counter the “Dutch disease” with strong institutions that ensure the transfer of revenues from commodity exports to other industries (as has happened and is happening in developed countries with large commodity exports) has made Russia one of the countries suffering from the “resource curse”.

After the outbreak of warfare in Ukraine and the wave of Western sanctions, the Russian economic system began to undergo transformation, and against the background of a strong decline in GDP, which is estimated by the World Bank at 3.4% in 2022 and 2.3% in 2023. The transformation of the economic system is primarily carried out in three directions: (a) anti-crisis support for the entire economy from the state budget and official reserve assets; (b) active state financing of industries that replace sanctioned imports with their products, i.e., import substitution policy; (c) liberalization of policy towards private businesses (especially small and medium-sized ones) through the mitigation or removal of a number of measures under government regulation. We can consider this transformation as a combination of a more active role of the state in the economy with greater freedom of business, i.e., movement towards an economic system characteristic of many Asian economies (chapter “[World Economy Major Trends: Evolution of National Economic Systems](#)”).

2.2 *The Belarusian Economic System*

The Belarusian model is characterized by the active participation of the state in economic and social life, with the gradual development of the private sector. Unlike other post-Soviet countries, where the transition to market mechanisms in the 1990s was carried out through “shock therapy”, in Belarus, planned economic management tools have been preserved and are still used. The country is also characterized by an active social policy of the state, which ensures low property inequality and large public investments in health and education. The emphasis in the foreign economic sphere is on integration with the countries of the Eurasian Economic Union, which account for half of Belarus’ trade turnover and a third of its accumulated FDI (mainly at the expense of Russia).

Privatization was limited and mainly affected the service sector. Most of the Belarusian industry remains in the hands of the state: the share of organizations in full or partial state ownership is more than 60% of the total production. State control also covers the private sector, in which regulation is carried out by controlling prices, providing benefits to individual enterprises and ensuring employment. The smooth nature of the post-socialist transformation allowed it to avoid mass bankruptcy of enterprises, maintain high employment rates and prevent large social stratification.

A network of infrastructure for the support and development of private entrepreneurship has been created and operates in the country, which, however, mainly covers small businesses. The share of the latter is low and amounts to only 16% of GDP. Political uncertainty, excessive state regulation and low protection of investors’ rights remain serious problems, which, in turn, are causing mass migration of businesses to more prosperous countries.

Belarus returned to economic growth earlier than most post-Soviet countries (already in 1996) and restored the pre-reform volume of GDP by the mid-2000s. In 2001–2008, the growth rate was about 8%, which was one of the highest ones in the region. The basis for developing the economy of Belarus was the production base that had been preserved since the Soviet Union. The demand for potash fertilizers and petroleum products obtained from Russian raw materials from the EU and Ukraine, as well as agricultural goods, machine-building and light industry products from Russia allowed Belarus to develop an export-oriented economy. Preferential energy prices and cheap loans provided by Russia have become an additional drivers of growth. A significant part of the income received from exports was directed to increase the welfare of the population through the mechanisms of budget redistribution.

However, in the 2010s, Belarus entered a prolonged period of stagnation. In 2021, its per capita GDP (PPP) amounted to \$19.7 thousand, having increased by only 7% over a ten-year period. The downside of the successes achieved earlier were the aggravating structural imbalances in the economy. The economic growth was seriously constrained by the simplified structure of commodity exports—the share of raw materials with relatively low added value increased. If in 2000, the share of machinery, equipment and vehicles accounted for 34% of the country’s exports, then in 2020, it was only 19%. This is partly due to the fact that the state does not

have enough funds to develop the most efficient production facilities. The authorities provide assistance to all state-owned enterprises, including unprofitable ones, often resorting to inflationary financing for this. The desire of the state to maintain control over the largest enterprises cannot but affect the investment attractiveness of the country, and high inflation hinders the development of the banking sector, which is poorly involved in lending to industry.

According to many economists, the Belarusian economic system in its current form has exhausted itself. At the same time, changes in its main parameters (state control over leading industrial enterprises, preservation of their labour potential, rejection of large-scale privatization and high level of subsidies from Russia) can lead to a painful restructuring of the economy and negative social consequences. The situation is aggravated by the growth of Western sanctions and the curtailment of economic ties with neighbouring Ukraine. According to the World Bank, in 2022, Belarus' GDP should shrink by 7% and will grow at a low pace in the coming years.

2.3 Ukrainian Economic System

As in most other post-Soviet countries, Ukraine's transition to capitalism, which began in the 1990s, led to a catastrophic deterioration in key economic indicators and a multi-year recession, but more severe and prolonged than in most post-Soviet countries. Such key industries for the economy as mechanical engineering and light industry turned out to be unclaimed on the world market. There has been a shift in the agro-industrial complex to the production of items with low added value. All this provoked the mass closure of enterprises, an increase in unemployment and a decline in the living standard.

The situation was aggravated due to mistakes in the economic policy of the authorities, who followed the path of rapid liberalization ("shock therapy"). The reform of the economy took place against the background of acute political struggle, constant redistribution of property and lack of consensus on further economic development. Ukraine has developed a model of oligarchic state capitalism, and, unlike Russia, oligarchs dominate over the state apparatus. In the mid-2010s, the intensifying socio-economic and domestic political contradictions provoked a systemic crisis and partial disintegration of the country.

Business conditions in Ukraine are bad. The country ranks particularly low in terms of credit availability, the complexity of the tax-paying procedure, obtaining construction licences and the right to enter the foreign market. All this testifies to the weakness of the country's financial system, the dominance of the state in the economy and the high monopolization of the most profitable activities. Besides, investment activity (especially from foreign companies) is constrained by political instability and the threat of renewed hostilities in the eastern regions of Ukraine, which turned into reality in 2022.

The economic dynamics in Ukraine strongly depends on the conjuncture in foreign markets. For example, in the early twenty-first century, the economy was in a phase

of recovery due to high prices and high demand for metals, metal products, mineral products and fertilizers. Additional sources of export revenue were the transit of Russian raw materials. These events were followed by a revival in agriculture and the food industry. However, in the late 2000s—the first half of the 2010s, the crisis trends in the global economy, and then the internal political conflict, provoked the stagnation of Ukrainian exports, a decline in GDP, instability of the national currency and a decrease in household incomes. To stabilize the budget, Ukraine has repeatedly applied for loans from the IMF since gaining independence. These loans are provided on the terms of structural reforms and the transition to a more stringent budget policy. In 2021, Ukraine's per capita GDP (PPP) amounted to only \$13 thousand, which, according to IMF statistics, was the lowest in Europe.

A systemic problem of the Ukrainian economy is the growing backlog in the field of science and innovation, and its consolidation in the international labour division as a supplier of raw materials and low-tech products. A number of manufacturing industries, including the defence industry and civil engineering, are still declining. The share of research and development expenditures in GDP is decreasing, and the share of enterprises investing in innovation is decreasing. The economy is developing by virtue of obsolete fixed assets created in Soviet times. The group of high-tech industries (aircraft, shipbuilding, turbines, electronic devices, etc.) accounts for only 4% of industrial production.

Foreign economic factors will continue to influence the dynamics of economic growth. Regardless of which party is in power, orientation towards the EU is considered as the main vector. In June 2014, an Association Agreement was signed between Ukraine and the EU, involving, among other things, the transition to European standards, technical norms and regulations and the liberalization of mutual trade and capital movement. Association with the EU may provide additional economic incentives, namely the opening of the European market for Ukrainian goods, access to cheaper loans and acceleration of long-overdue institutional reforms. At the same time, it has created new risks for the Ukrainian economy associated with the displacement of national producers from the domestic market, a decrease in the competitiveness of individual industries, an increase in the costs of changing technologies and modernizing existing production facilities, and the loss of the key Russian market for the country.

Another serious challenge is the accelerated depopulation of Ukraine since the mid-2010s, caused by both a reduction in the birth rate and the departure of the most qualified part of the workforce abroad.

With the beginning of military warfare in Ukraine in 2022, the country found itself in a deep crisis. According to the World Bank, the decline in GDP this year may amount to 35%.

2.4 *Kazakhstan's Economic System*

Kazakhstan is the largest and most developed Central Asian state with rich natural resources. After the collapse of the USSR, a large-scale privatization programme was implemented in Kazakhstan and foreign investments, primarily in mining, began to be actively attracted.

At the same time, one of the main features of private (national and foreign) business is the wide participation of central and regional bureaucracy. The close interweaving of business with the state machine, mainly with the upper stratum, makes the principle of “power—property” dominant in the economy, reducing the importance of legal norms. The economic model that has developed in the country can be called oligarchic state capitalism, with even greater dominance of the state machine than in Russia.

The main instrument of state intervention in the economy has become the Samruk-Kazyna holding, which concentrates almost all the economic resources of the public sector, including its shares in private companies, state pension funds, assets in the mining, nuclear, electric power and metallurgical industries, as well as in the field of transport and communications. At the end of the last decade, the public sector accounted for about 30% of GDP.

A strong, and at the same time vulnerable, link of Kazakhstan's model is its raw material nature, which makes the economy dependent on world prices for raw materials, mainly oil. The raw materials' orientation of the economic model can be explained by the fact that Kazakhstan is very rich in natural resources, primarily fuel.

The attractiveness of raw materials for the development of their extraction, processing and supply to world markets has attracted noticeable foreign capital to the country. The orientation of the economic model to the oil and gas sector may slow down the modernization of the economy as a whole, especially since a significant part of oil production is at the disposal of foreign mining companies. Moreover, in recent years, the growth of foreign direct investment has begun to decline, the external debt has equalled the volume of GDP, and more than half of export revenue is spent on servicing it.

Despite the excellent rates of economic growth in the first decade of the twenty-first century and not bad rates in the next decade, there remains a strong stratification and a gap in the standard of living of the urban and rural populations (where the poverty rate is twice as high). Therefore, the social sphere remains a weak point of the Kazakh model, which was demonstrated by mass unrest in early 2022.

Its other weak point is corruption, which has actually turned into a system-forming factor. Although the country is fighting the corruption, it is aimed not so much at eradicating corruption itself as at redistributing property.

The economy is dominated by large enterprises (accounting for more than 40% of GDP), but medium-sized (20%) and small enterprises (17%) hold strong positions. However, the latter is dominated not by the modern, but by the traditional sector. The share of households that produce goods and services for their own consumption is

quite large (about 16% of GDP). They prevail in agriculture, and 41% of the population lives in rural areas. Such problems of agriculture as low labour productivity, poverty, land degradation and water problems have acquired a national character.

The prospects of Kazakhstan's economic system largely depend on the strengthening of the social component of the economic model and the evolution of the political model towards democracy.

2.5 Economic Systems of Other Central Asian Countries

The economic systems of Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan have a number of overlapping features due to the fact that these countries share historical development, geographical location and civilizational features. At the same time, the differences in systems were significantly affected by the uneven distribution of natural resources between countries. Almost all hydrocarbon reserves are concentrated in Turkmenistan and Uzbekistan, while Kyrgyzstan and Tajikistan are entirely dependent on oil and gas imports. At the same time, Kyrgyzstan and Tajikistan account for 90% of water resources of the region, which is extremely important in the context of the water problem that is escalating in the region. However, national economic interests prevail in this sphere to the detriment of regional ones.

During the Soviet period, despite large investments from the all-Union budget, modernization in the Central Asian countries was slow, especially in the sphere of social and labour relations, the influence of religious and local customs was great. All these countries still belong to the economies with the dominance of mining and the large agricultural sector.

After the collapse of the USSR, market reforms (except for Kazakhstan) were carried out at the fastest pace in Kyrgyzstan. In Tajikistan, the implementation of reforms after the end of the civil war (1992–1997) was hampered by the poverty of the population and the outflow of the able-bodied population. Uzbekistan has chosen a course of moderate liberalization. In Turkmenistan, with its most pronounced authoritarian nature of power, the economy still continues to retain the features of a command economy. In the 2022 Index of Economic Freedom, Kyrgyzstan ranked 116 out of 179 countries, Uzbekistan—117, Tajikistan—147 and Turkmenistan—165 (Kazakhstan—39). The dominant feature of their economic models is state capitalism, as a consequence of the political authoritarianism inherent in all countries of the region.

Despite the fact that Central Asia is currently one of the most dynamic regions of the world economy, this fact hides its strong lag from the global average level of development. Kyrgyzstan (\$5288 in 2021) and Tajikistan (\$4288) are particularly lagging behind in terms of the actual size of GDP by PPP, although in Uzbekistan this figure is almost 2 times higher (\$8497), and in Turkmenistan it exceeds \$16 thousand (in Kazakhstan—\$28,600).

In this regard, what is common to all Central Asian economic systems is a low, or very low, standard of living for the bulk of the population, a high involvement of state bureaucracy in the economy and, as a result, a large non-observable economy

and corruption. The share of the non-observed economy in their GDP, according to various estimates, reaches 50–60%. Cronyism and a high level of corruption have become system-forming factors here. According to the 2021 Corruption Perception Index, the Central Asian countries ranked among the last places in the ranking: Turkmenistan—169, Tajikistan—150, Kyrgyzstan—144 and Uzbekistan—140th place (Kazakhstan—102).

Although the share of agriculture in GDP has decreased in comparison with 2000 in almost all Central Asian countries, especially in Turkmenistan (up to 11%), it remains quite high—in Uzbekistan—25%, Tajikistan—24%, Kyrgyzstan—15%. At the same time, small-scale subsistence farming prevails in agriculture, and a low level of productivity is maintained. Limited water resources create great difficulties, which not only complicates the solution of the problem of food security but also increases tensions between mountainous (Kyrgyzstan, Tajikistan) and lowland countries.

The focus on agricultural and raw materials industries predetermines the hindered development of the financial sector in the region, slows down the development of modern forms of production in agriculture and manufacturing, and strengthens the system of family-clan state capitalism, largely due to which a layer of modern small and medium-sized entrepreneurs has not formed.

In conditions of a high birth rate, this exacerbates the problem of unemployment, generating a huge migration of the able-bodied population as a characteristic feature of the region's economy. Up to 80–85% of temporary migrants from Kyrgyzstan, Tajikistan and Uzbekistan work in Russia (more than 2.5 million migrants from Uzbekistan, more than 1 million from Tajikistan and more than 0.5 million from Kyrgyzstan annually). In Kyrgyzstan and Tajikistan, up to ½ of the economically active population is involved in the migration process.

In general, the economic systems that have developed in Central Asian countries are not sustainable, especially in the long term, and may become the basis for a new stage of property redistribution and political crises.

2.6 Economic Systems of the Transcaucasian Countries

The systems of the Transcaucasian countries, despite their geographical proximity and common historical past, currently have more differences than coincidences. Civilizational differences also have an impact on economic systems, and the presence of large enclave ethno-confessional groups in each of the countries has become one of the main factors of military-political conflicts in the region in recent decades.

What is common to the economic systems in the region is the preservation of a large public sector in the economy and the monopolism of large private companies that arose as a result of the primary redistribution of state property, and thus, the insufficient development of the small and medium-sized business sector, except agriculture and traditional services. However, in general, the influence of political authoritarianism on the nature of economic models of countries is less pronounced than in Central Asia. It is more clearly manifested in the Azerbaijani model, which

retains a significant state participation in the economy, and the models of Georgia and Armenia which are more liberal. According to the 2022 Index of Economic Freedom, Georgia ranked 26th, Armenia 58th and Azerbaijan 76th in the world.

The availability of natural resources has a significant impact on the industry structure of models. All oil and gas deposits in the region are concentrated in Azerbaijan, which has made Azerbaijan the most attractive economy for foreign investment in this region.

The presence of large oil and gas resources in Azerbaijan has long held back the privatization processes, but at the same time accelerated the inflow of foreign capital. And therefore, in Azerbaijan, in comparison with other Transcaucasian countries, the reforms were carried out gradually, covering primarily light industry and trade.

The traditions of individual farming preserved in the region, despite the presence of collective farms in Soviet times, ensured the rapid creation of farm-type households. However, the privatization of land areas has provoked the problem of land parcels and the emergence of a large array of small-scale subsistence farming. Although this changed the structure of acreage in favour of basic food crops, it did not ensure sufficient food production.

A fairly significant place in the economies of the Transcaucasian countries is occupied by a non-observed economy, although its share is rapidly declining. The level of illegal trade between the countries of the region and in international relations is quite high. Forms of Islamic business began to be established in Azerbaijan, especially in the banking sector, charitable foundations appeared in the form of waqfs created with the donations from members of the Muslim community.

Corruption continues to be a characteristic feature of the economic models of the region. According to the Corruption Perception Index for 2021, Azerbaijan took 128th place, Armenia—58th and Georgia—45th (there was a radical decrease in the level of corruption mainly due to the law enforcement sphere).

A number of conflicts in the region, as well as the instability of economic growth, have increased migration, mainly to Russia. The total number of migrants in the 1990s amounted to several million people, but then emigration decreased to several tens of thousands of people from Armenia and Georgia.

3 Dynamics and Proportions

3.1 Economic Growth

The economic catastrophe that occurred in the post-Soviet space in the 1990s threw the post-Soviet countries back so much that they were able to restore the absolute size of production of goods and services only two decades later in terms of GDP. And although most countries have done this even earlier, some of them (Ukraine, Kyrgyzstan, Tajikistan) still have not reached the previous GDP per capita. At the same time, the world has not stood still for the last 30 years, and therefore the share

of the region in the world economy has fallen by almost twice as much during this time (although the share of the USSR in the world GDP began to slowly decrease two decades before its collapse).

In the 1990s, the decline in GDP occurred in all the states of the region, both because of their ineffective economic policy (due to the haste and ill-considered market reforms) and the collapse of economic ties, which were quite extensive in Soviet times. In a number of countries, the decline in GDP was particularly strong (from 1/2 to 2/3)—primarily in Ukraine, Moldova, Azerbaijan, Georgia and Tajikistan. It can be assumed that if the decline in Ukraine was aggravated by a very inefficient economic policy, then in the rest of these countries it occurred primarily due to military conflicts in their territories. The countries that pursued a policy of a more gradual transition to a market economy in those years—Belarus and Uzbekistan—experienced a much smaller decline.

In the following decade, all the states of the region had high rates of economic growth. In a number of countries, this is primarily due to the restoration of the economy that was severely destroyed in the previous decade (Moldova, Georgia, Tajikistan), in others—the excellent demand of the world market for their raw materials (Russia, Azerbaijan, Kazakhstan), in the third—a more effective economic policy compared to other countries in the region (Belarus). However, this economic growth was unstable, as it strongly depended on the volume of capital flowing from abroad, and in the countries of the second group—also on the conjuncture of the world market of fuel, raw materials and semifinished products. The following decade clearly demonstrated this.

According to GDP per capita (Table 1), Russia is leading in the region, as in the Soviet years and the countries of Transcaucasia and Central Asia (except Kazakhstan) are lagging behind, as before.

3.2 Savings and Investment

Large post-Soviet economies (except Ukraine in recent years) have a relatively high rate of savings (Table 2). A significant contribution to its formation was made by the current account balance, which was positive for the countries exporting raw materials and fuel. In the rest of the post-Soviet countries, the savings rate was at a lower level.

As for the rate of investment, it was significantly influenced by the capital flow balance by increasing or decreasing it in comparison with the rate of gross savings. This was most noticeably demonstrated by Moldova, Armenia, Georgia and Kyrgyzstan, i.e., small post-Soviet economies—as a result of their comparatively large-scale inflow of foreign capital, their investment rate exceeded the gross savings rate. In Russia and Azerbaijan, with their large capital exports, the situation was the opposite.

Table 1 GDP growth in post-Soviet economies

	Indicator						
	GDP per capita in 1990, PPP (constant international 2017 \$)	Average annual GDP growth, % in 1992–2000	Average annual GDP growth, % in 2000–2012	Average annual GDP growth, % in 2011–2019	2020, %	2021, %	GDP per capita in 2020, PPP (constant international 2017 \$)
Russia	21,483	−4.0	4.8	0.4	−2.7	4.7	26,456
Belarus	8895	−1.2	7.5	1.2	−0.7	2.3	19,187
Moldova	...	−9.2 ^a	4.8	5.4	−8.3	13.9	12,324
Ukraine	16,429	−8.0	3.8	0.5	−3.8	3.4	12,376
Armenia	5180	−2.9	7.6	3.8 ^b	−7.4	5.7	12,620
Azerbaijan	7617	−5.6	14.8	1.4	−4.2	5.6	13,727
Georgia	11,136	7.9	6.8 ^a	...	−6.8	10.4	13,966
Kazakhstan	13,476	−2.7	7.7	4.1	−2.6	4.1	25,363
Kyrgyz Rep	5188	−3.6	4.2	4.6	−8.6	3.7	4715
Tajikistan	4093	−9.4 ^a	7.8	...	4.4	9.2	3658
Turkmenistan	7208	−2.1 ^a	9.0	8.7	−3.0	4.9	15,538 ^c
Uzbekistan	3639	−0.1	7.4	6.6	1.9	7.4	7332

Source World Bank Open Data; IMF. *World Economic Outlook*, April 2020

^aThe author's estimate

^b2012–2019

^c2019

Table 2 Rates of savings and investment in post-Soviet countries, % of GDP

	Indicator							
	Rate of savings				Rate of investment			
	2020	2007	2019	1990	2021	2007	2019	2020
Russia	36	30	30	27	19	24	26	24
Belarus	23	27	32	28	25	34	34	26
Moldova	16	26	13	17	24	38	23	23
Ukraine	24	22	9	12	20	27	19	8
Armenia	−1	34	12	15	19	38	24	19
Azerbaijan	17	45	42	24	21	22	22	24
Georgia	10	11	15	11	27	32	26	24
Kazakhstan	20	28	26	26	18	36	23	27
Kyrgyzstan	15	21	30	27	20	27	32	33
Tajikistan	n/a	14	18	25	9	23	20	25

Source World Bank Open Data

3.3 Industrial Structure of GDP

After the economic shocks of the 1990s, there was no real improvement in the sectoral structure in the post-Soviet countries (Table 3). In the secondary sector, simpler industries have displaced more complex ones (mechanical engineering), which has become the main reason for reducing its weight.

One could regard the growth of the share of the tertiary sector as a positive phenomenon, but this was largely due to the trade. These negative shifts could be witnessed in all countries.

A comparison of the industrial structure of GDP with the structure of employment (Table 4) confirms this conclusion, which is especially evident in the share of employed in the primary sector.

It can be concluded that the share of the primary sector calculated by employment in all the above countries, except Russia, is quite high, which does not allow these countries to be considered even medium-developed economies by this indicator.

4 Business Structure: The Case of Russia

The analysis of business structure in most of the countries studied is difficult, since there are not enough statistics for this. It can only be noted that small and medium-sized businesses dominate in backward post-Soviet economies due to the high rate of employment in small agricultural and traditional services businesses. Large private

Table 3 GDP structure by sectors in post-Soviet economies, %

	Indicator								
	Primary sector			Secondary sector			Tertiary sector		
	1992	2008	2019	1992	2008	2019	1992	2008	2019
Russia	13	5	4	49	38	32	39	57	64
Belarus	21	9	7	50	39	31	28	53	62
Moldova	34	11	10	37	15	23	30	74	67
Ukraine	23	8	9	43	37	23	36	55	68
Armenia	20	18	12	46	45	24	34	37	64
Azerbaijan	31	6	6	40	71	49	29	23	45
Kazakhstan	28	6	4	42	42	42	30	52	54
Kyrgyzstan	28	34	19	45	19	28	27	48	53
Tajikistan	33	18	19	35	23	27	32	59	54
Turkmenistan	–	12	–	–	54	48	–	34	–
Uzbekistan	33	23	26	40	33	33	27	43	41

Source World Bank. World Development Report for the relevant years

Table 4 Share of employed in primary sector in 2019, % of total employment

	Indicator
Russia	7
Belarus	11
Moldova	36
Ukraine	15
Armenia	30
Azerbaijan	36
Georgia	38
Kazakhstan	16
Kyrgyzstan	21
Tajikistan	45
Turkmenistan	20
Uzbekistan	24

Source World Bank Open Data.

business exists only in the largest post-Soviet economies—in Russia, Kazakhstan and Ukraine (but not in Belarus). The place of large national private business in other countries is occupied by state-owned companies and foreign MNEs.

As Russian statistics allow to analyse the business structure of the country it is reasonable to analyse the case of business structure in Russia.

According to a poll conducted in mid-2019 by the Russian foundation “Public Opinion”, 61% of Russian entrepreneurs believe that the conditions for entrepreneurship in the country are unfavourable, 51% believe that they have been deteriorating in recent years, and 41% (the majority) think that the state should regulate business less. The main problems for Russian entrepreneurs (according to the population poll) are high taxes and fees (25% of respondents think so), corruption and bureaucracy (7% each), as well as incorrect economic policy, lack of initial capital, great competition and monopolism of big business (5% each).

Due to the Soviet heritage, large and super-large enterprises occupy an eminent position in Russian economy. Another determinant is a predominance in Russian economy enterprises producing fuel and energy, raw and semifinished products, which, for technological reasons, are characterized by a high concentration of production. In addition, the country’s antimonopoly policy is ineffective.

In Russia, the statistical definition of the size of a business coincides with European, not American standards. As in the EU, in Russia the definition of large business is overstated, since it includes all enterprises with more than 250 employees and annual sales from 800 million to 2 billion roubles. If only the top 600 companies in terms of sales are attributed to large Russian companies, then, according to Russian rating agency RAEX, in 2019, this list included companies with sales of at least 23.7 billion roubles (\$0.4 billion). According to our estimate, they (including public sector companies) produced about 45–50% of the Russian GDP.

By Russian methodology, medium-sized businesses include enterprises with a number of employees from 101 to 250 people and with sales from 120 to 800 million roubles. They, together with large companies that are not included in the above 600, accounted for about 35–40% of the Russian GDP (including public companies).

Most large, and significant part of medium-sized companies, are united in integrated business groups. These are inter-firm associations based on legally fixed property and/or non-property affiliated relations. There are several hundred such business groups in Russia, operating both at the national and regional levels, both in one industry and in several at the same time.

In addition to the high concentration of production, another, even more important feature of Russian private large- and medium-sized businesses is the high concentration of ownership. Unlike developed countries, in Russia, most large private companies and business groups, as well as a significant part of medium-sized businesses are controlled by several individuals (and often one individual) through the possession of a controlling stake. Ten years ago, the top 22 private business groups were controlled by only 40 individuals. It is on this basis that private owners of large companies in Russia are often called oligarchs, and Russian state capitalism is called oligarchic state capitalism.

The high concentration of ownership in Russian large- and medium-sized corporations imposes a noticeable specificity on their corporate governance. Unlike the Anglo-Saxon model with its dispersed ownership and concentration of management in the hands of managers, strategic decisions in Russian corporations and business groups are made by their own people, whose circle is usually narrow. From the point of view of economics, in Russia, property is weakly separated from management. Another specific feature of large- and medium-sized businesses is the close, often informal relations of corporations (especially large ones) with government authorities.

Small business (not more than 250 employees) occupies a modest place in the Russian state-oligarchic model. It employs about 10–15% of employees (including external part-timers and those working under civil contracts) and produces about the same part of the GDP. These are mainly trade and household services as well as construction and manufacturing industries. Although the tax burden was significantly reduced for small businesses in the 2000s and tax administration was facilitated, however, they continue to suffer due to the lack of preferential lending, large administrative barriers and corruption. Compared to large- and medium-sized companies, small businesses suffer these problems especially hard because of their low financial and production capabilities. To support this business, tax incentives are being provided for the self-employed, and preferential loans for various categories of SMEs, as well as priority access to public procurement and procurement of state-owned corporations.

The public sector in Russia has both traditional and specific features. Its traditional features include its concentration in the social infrastructure (social security, healthcare, education, housing and community services), science and culture, as well as production infrastructure (transport, communications and electric power).

As to the specifics of the Russian public sector, it has a noticeable presence in the mining and manufacturing (primarily in the defence industry), construction and the banking sector. Another specific feature is the vague boundaries of the public sector, since there are many companies in Russia in which the state doesn't own all the shares, but only the majority (for example, Gazprom), as well as companies in which the state has fewer shares or even only a "golden share" (it actually gives the state only the right to veto in strategic decisions for the company). These two features—the presence of the public sector in non-traditional industries and the vagueness of its borders—are a consequence of both the excessive role of the state in the Russian economy and its active use of state regulation (for example, through the same "golden share").

The public sector is based on government and municipal agencies, government unitary enterprises and companies with full or predominant state participation. These agencies, enterprises and companies (with a predominance of state ownership) account for about 1/4 of the main funds of the country, and they employ 1/4 of all employees. In general, the public sector produces 20–25% of the Russian GDP (the rest is accounted for by the private sector, including companies with non-dominant state participation). Since the 2000s, the previously continuously falling share of the public sector in Russia has ceased to decline.

5 Human Capital and Innovations

5.1 Demographic Situation

In the last three decades, the demographic situation in the post-Soviet space has developed ambiguously. Although the population in the post-Soviet space has grown—from 290.1 million people in early 1991 (including 148.5 million people in Russia) to 300 million in early 2022 (145,6 million people in Russia), its share in the world population has decreased. This was due to the Eastern European countries of the former USSR (the population of Ukraine decreased by 1/4, Moldova—by 2/5), while the population of various Central Asian countries increased by 1.5–1.8 times (by 80% in Tajikistan).

The demographic problem in the Eastern European countries of the region is solved mainly through immigration. The peak of this immigration occurred in 1994, when almost 1.2 million people arrived in Russia, mostly ethnic Russians from other post-Soviet countries. Since the second half of the 2000s, immigration to Russia has been mainly at the expense of "indigenous" residents of other post-Soviet countries. As a result, Russia, as the largest post-Soviet economy, is the centre of immigration in the region, occupying 2–5 places in the world in the last decade in terms of the number of migrants settled in it (13.4 million people at the beginning of 2022).

Migration to permanent residence is accompanied by even greater temporary labour migration, the scale of which reaches 10–15 million people annually

(excluding multimillion illegal labour migration). The specificity of migration flows in the region is that they are more focussed on the post-Soviet space itself, rather than other states located outside it. Contacts between people are the most important factor linking the post-Soviet republics into a special economic space. For Russia, the main donors of foreign labour are the CIS countries with which Russia has a visa-free regime, as well as the states of the Eurasian Economic Union (EAEU) with free employment in any of its member states. The vast majority of temporary migrant workers in Russia (about 50%) are employed in construction and trade, where there is a great demand for low-skilled labour.

The number of economically active population in the post-Soviet space is growing and in 2021 amounted to 140 million people (76 million people in Russia). The majority are employed in the service sector (from 55.9% in Kyrgyzstan to 67.5% in Russia in 2021), the share of those employed in the primary sector varies greatly (Table 4). The processes of deindustrialization in Transcaucasia and Central Asia have affected the reduction of the share of people employed in their secondary sector, some of whom have moved to self-employment in agriculture, and also to the service sector, mainly small retail trade.

At the same time, the labour force in the post-Soviet space is characterized by a relatively high level of education. More than a third of the employed in the region (36%) have university education, more than a quarter (26% of the employed) have secondary vocational education, and those without secondary (full) education make up only 3% of the number of employed. Taking into account the sectoral structure of employment, it can be concluded that the demand for jobs requiring high qualifications is low in the region. As a result, a significant part of highly qualified employees has to work outside their specialty, which contributes to an external and internal “brain drain”.

5.2 Knowledge and Innovation

The Knowledge Economy Index, which has been calculated by the European Bank for Reconstruction and Development (EBRD) since 2014, demonstrates a strong differentiation of post-Soviet countries in terms of the degree of development of innovative institutions and national innovation systems and innovative skills of the population, as well as a functioning ICT infrastructure (Table 5).

The high gap between the post-Soviet countries and the OECD member countries, according to the EBRD, is primarily due to the weakness of the innovation institutions in the post-Soviet countries. Their scale of R&D financing plays a significant role in this lag.

Although the region still ranks 4th in the world in terms of the total number of R&D personnel employed and 6th in terms of the number of researchers, it has significantly reduced the R&D funding needed to create innovative products. If in 1990, the USSR allocated about 3.5% of its GDP for this (including military R&D

Table 5 Knowledge Innovation Index score for post-Soviet countries, points (10 is the best)

	Knowledge Economy Index	Institutions for innovation	Skills for innovation	Innovation system	ICT infrastructure
Belarus	5.21	5.50	6.05	3.27	6.01
Russia	4.93	4.83	5.74	3.41	5.73
Kazakhstan	4.85	5.80	5.68	2.69	5.23
Armenia	4.51	5.44	5.24	3.12	4.24
Ukraine	4.29	4.33	5.44	2.84	4.56
Kyrgyzstan	3.98	4.38	5.02	2.39	4.15
Uzbekistan	3.82	3.48	4.72	2.57	4.51
Tajikistan	3.23	3.47	4.73	2.96	1.77
Turkmenistan	2.26	3.42	2.47	1.71	1.43
<i>Memo:</i> OECD average score	7.36	8.08	7.14	6.48	7.73

Source EBRD (2019). Introducing the EBRD Knowledge Economy Index. www.ebrd.com/documents/policy/download-the-ebdrs-knowledge-economy-index.pdf?blobnocache=true

expenditure¹), today, as shown in Fig. 1, their share in all countries with the exception of Russia, Lithuania and Estonia does not exceed 1% of the GDP. As a result, the number of organizations and employees in the field of R&D has reduced, and certain scientific areas are not developing anymore.

Although there has been an increase in the number of enterprises with research units and experimental productions, nevertheless, the hope for an increase in the importance of the corporate research and development sector has not been justified, and currently, most of the institutions, funding and personnel engaged in research and development are concentrated in the public sector (Fig. 2).

Another feature is the low role of higher education institutions in R&D, which did not increase even during the period of rapid growth in the number of universities in the 2000s (Fig. 2).

Analysing the structure of research and development costs in the areas of science and technology development, it can be said that the lion's share (more than 70% of funds) falls in technical sciences, which indirectly indicates the industrial nature of the post-Soviet economy and good schools in these scientific fields. The Soviet Union was among the world leaders in the field of natural sciences (physics and mathematics); it held strong positions in oceanology, seismology, metallurgy, magneto-hydrodynamics and chemical catalysis. The smallest amount of funds is allocated to

¹ In Soviet times, the R&D expenditure statistics also took into account the costs of military research and development. In Russia, defence R&D spending is currently allocated as a separate line in the budget. In 2021, according to experts, total government spending on research and development (including military) in Russia was close to 2% of GDP.

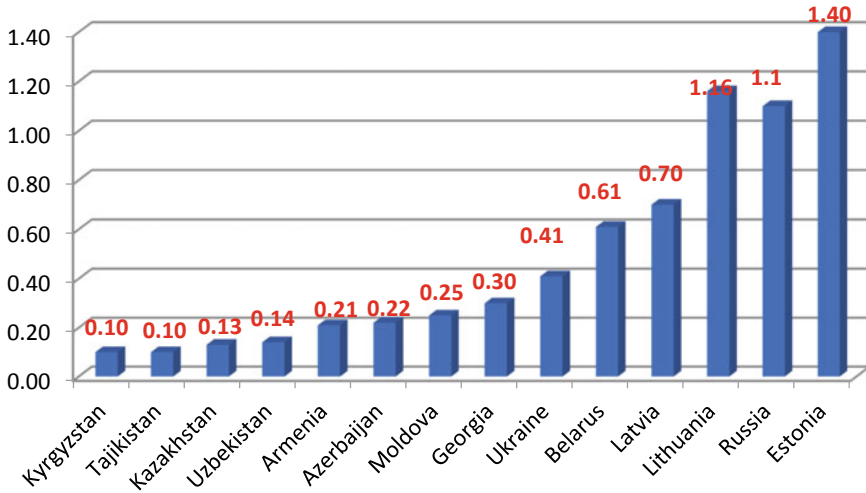


Fig. 1 R&D expenditures in the ex-USSR countries, % of GDP, 2021 (or the latest year available) (Source World Bank Open Data; The UNESCO Institute for Statistics [UIS])

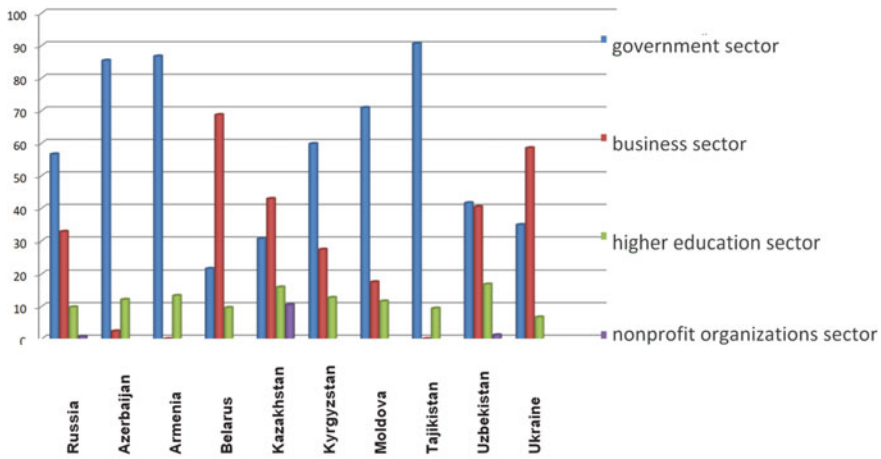


Fig. 2 R&D expenditure, by performing sector (Sources Rosstat; World Bank)

research in the humanities; in the post-pandemic period, the role of medical research is growing everywhere.

The effectiveness of R&D in post-Soviet countries, judging by the indicators of publication activity, remains low. In the early 2020s, the countries of the former USSR accounted for about 3% of the global number of scientific articles, with a 5% share in 1989. The scientists of the post-Soviet countries are most active in the natural sciences, due to the scientific traditions in this field.

Table 6 Some indicators of education in post-Soviet countries, 2020 (or the latest available)

	Education expenditures, % of GDP	Gross enrolment ratio in tertiary education, %	Number of students, per 10 thousand population	Share of international students, %
Russia	4.6	86.4	43	7.8
Belarus	5.0	86.6	41	4.3
Moldova	6.4	58	35	5.6
Ukraine	5.4	82.7	32	3.5
Armenia	2.7	51.5	37	17.5
Azerbaijan	2.7	35.2	28	2.2
Georgia	3.9	66.7	41	11.0
Kazakhstan	2.9	70.7	59	3.3
Kyrgyzstan	5.4	46.5	48	9.0
Uzbekistan	4.9	15.9	22	0.2

Sources World Bank Open Data; Rosstat; UNESCO

5.3 Education

The level of education spending in the region ranges from less than 3% to more than 6% of the GDP. These good enough rates are achieved primarily due to the wide coverage of education of the population, as well as to the high availability of education (Table 6).

Russia is one of the world leaders in the coverage of the population with higher education. In the USSR, higher education became widespread in the early 1980s. Then about one-fifth of all young people received higher education, in the Russian Soviet Federative Socialist Republic this share was 25%. According to the OECD, in the early 2020s, 62% of young people in Russia aged 25–34 had a higher (tertiary) education. Education in Russia remains attractive for foreign students, especially for students of the ex-USSR republics and, first of all, for the people from Central Asia. The most popular areas of training among foreign students are engineering and medical specialties.

5.4 Information Resources

Post-Soviet countries, and especially Eastern European countries, are not much inferior to developed countries in terms of saturation with traditional information resources (television, radio, newspapers and fixed telephony).

If we take the Eastern European countries of the former USSR, the level of saturation with modern information resources is also quite high. Russia ranks fifth in the

world in terms of the number of households using the Internet, after China, India, the USA and Brazil. According to the World Bank, in 2020 fixed broadband subscription (per 100 people) in Russia, Belarus, Moldova and Ukraine was 23.3, 34.5, 17.8 and 18.6, respectively, in comparison with 15.9 all over the world and 35.1 in OECD countries.

The situation with this indicator was not bad in Transcaucasia—14.5 in Armenia, 19.7 in Azerbaijan and 24.3 in Georgia. However, the situation in Central Asia was unsatisfactory—here the indicator ranged from 14.0 in Kazakhstan and 14.4 in Uzbekistan to 0.1 in Tajikistan.

6 Real Sector

In the post-Soviet space, over the past three decades, competitive real sector industries have been reoriented to the world market, partially compensating for the decreased demand for their products in the domestic market. These industries kept their fixed assets in working order and even modernized them, although they did not increase their capacity. The industries that had worked mainly for the domestic market were unable to significantly modernize even their noticeably reduced capacities, although there are many exceptions (food industry, communications and trade).

6.1 *The Agro-Industrial Complex*

This complex has lost most of the tractor and agricultural machinery over the past three decades. For example, in Russia, the production of tractors in 1986 amounted to 264,000 units, in 2021—less than 7000 and the production of combined harvesters during this time decreased from 112,000 to 7000 units.

As a result, compared to Soviet times, the machine base of agriculture has deteriorated. For example, in Russia, the number of tractors and combine harvesters per thousand hectares of arable land (crops) has decreased by almost a third. The previous volumes of mineral fertilizers have not been restored (from 107 kg per hectare of sown area in 1987 to 65 kg in 2021), although their production in Russia and Belarus has grown due to export supplies. The small size of private farms in most post-Soviet countries also depresses the opportunity to use large agricultural machinery and complicates chemicalization. In almost all post-Soviet countries, with the exception of Belarus, there was a decrease in the volume of previous state support for agriculture.

Despite these negative trends in the development of agriculture, the export of agricultural products has grown in recent decades. Russia, Ukraine and Kazakhstan are among the top ten grain exporters in the world, and Azerbaijan is among the top ten cotton exporters.

Among the most urgent challenges facing the agro-industrial complex of post-Soviet countries, the problem of increasing food security (relevant primarily for Russia, Azerbaijan and Uzbekistan); the environmental problem due to soil contamination with fertilizers and lack of fresh water (typical for Central Asian countries); the problem of using modern agricultural technologies and digitalization (primarily in logistics areas).

6.2 *The Fuel and Energy Complex*

This complex has been developing successfully (for Russia until 2022), which is explained, on the one hand, by significant reserves of energy resources, and, on the other hand, by the growing demand for energy in the world.

The total proven oil reserves in the territory of the post-Soviet countries, primarily located in the territory of Russia, Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan exceed 8% of world reserves. These countries possess even greater reserves of natural gas (30% of world reserves, almost 2/3 of which are concentrated in Russia).

Combined with large hydropower resources (second in the world after China, located mainly in Russia, Kyrgyzstan and Tajikistan) and uranium reserves (primarily in Kazakhstan) this allows the post-Soviet area not only to fully meet its own energy needs (in most post-Soviet countries, almost the same amount of electricity is produced as in Soviet times, although mainly at old facilities) but also to export it, primarily to the EU and China. Trade in energy resources is one of the main forms of economic ties between post-Soviet countries and an area of increased interest in them from the leading world powers-importers of energy resources.

6.3 *The Metal, Chemical and Timber Complex*

The significant reserves of iron ore in Russia, Ukraine and Kazakhstan, non-ferrous and precious metals in Russia and Central Asia, alongside a steady decline in demand for metals within the economies of post-Soviet countries allowed them to increase export volumes. However, the expansion of exports compensated for only part of the losses of the domestic market; as a result, the volume of production of most metals is below the level of 1990. In 2021, less than 92 million tonnes (including 66.4 and 21.3 million tonnes in Russia and Ukraine, respectively) of rolled ferrous metals were produced, whereas in 1989 it was 116 million tonnes. Nevertheless, the growth of export revenues contributed to the modernization of a significant part of the fixed assets of ferrous and non-ferrous metallurgy.

The chemical and forestry complex has reduced the production of non-exported types of products, although some industries are experiencing a rise. An example is the Russian pharmaceutical industry, which was not sufficiently developed in Soviet times, but is successfully developing thanks to active state support.

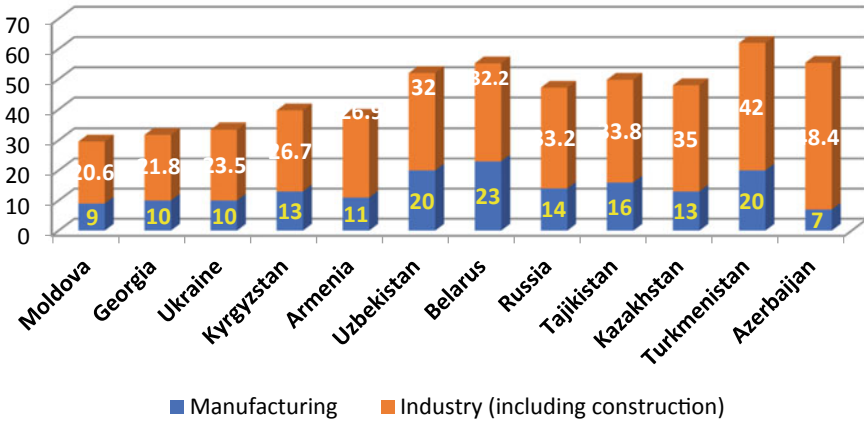


Fig. 3 Industry, value added (% of GDP) in post-Soviet countries, 2021 (or the latest available)

6.4 Manufacturing

Over the past 30 years, almost all post-Soviet countries have demonstrated a significant decline in the share of manufacturing industries in GDP (Belarus was the least affected). At the same time, the most technologically complex industries suffered the most; primarily mechanical engineering, which could not recover after a catastrophic decline in its share of GDP in the 1990s. Even in Belarus, where its share is the highest, it decreased from 38.2% in 1990 to 23.0% in 2021 (Fig. 3).

As a rule, industries with low added value remained the most competitive and increased their share in the GDP of post-Soviet countries. At the beginning of the 2020s, approximately 20% of the value added of the manufacturing industry of the post-Soviet countries accounted for medium- and high-tech industries (ranging from 2% in Kyrgyzstan to 43% in Belarus), slightly more than 25%—for the production related to processing raw materials, almost half (50%) of the value added was created in low-tech industries.

As for the forecasts of further development of the real sector in the post-Soviet area, the existing trends of production localization, the implementation of self-sufficiency and import substitution policies should continue, which, in turn, can stimulate the accelerated development of industries with higher added value and increase the technological level of production in the real sector.

In the transport complex, only the length and capacity of export pipelines are growing rapidly. Although the port economy is being updated and expanded, new roads and railways are being built on a small scale and old ones are being reconstructed, but the tonnage of ships and the fleet of railway locomotives and wagons has greatly decreased and the aviation and automobile cargo fleet has sharply decreased, since fewer people and cargo are transported through the preserved transport network (in Russia, there are half as many others in 2021 as in 1992). If we take passenger transport, the main reason for the flow of passengers to reduce was the increased cost

of tickets (previously subsidized by the state), rather than the increased motorization of the population (this is confirmed by a decrease in passenger traffic over medium and long distances, where personal cars do not compete with railways, buses and aviation). For freight transport, the main reason is a decrease in demand for its services from the manufacturing industry due to the deindustrialization of most post-Soviet countries.

Communications and telecommunications are one of the few complexes where there has been clear progress over the past two decades. Although traditional types of communication (primarily mail) cannot boast of this, telephony and the Internet have become more widespread in almost all post-Soviet countries, especially in the most developed ones. No less successful is trade and repair (especially cars) —long held back by Soviet planning, they are rapidly increasing their funds.

7 Financial Sector

The monetary system is one of the weakest points in the economy of most post-Soviet countries. This is evidenced by both the low coefficient of monetization of the economy (the ratio of broad money to GDP) and the small volume of loans issued by local banks. In addition, financial capital resources are subject to constant severe depreciation due to high inflation in most post-Soviet countries (Table 7).

Table 7 Some monetary indicators in post-Soviet countries

	Indicator			
	Broad money in 2020 (% of GDP)	Domestic credit provided by the financial sector in 2020 (% of GDP)	Consumer price index in 2021 (2010 = 100)	Consumer price inflation in 2022, % (projections)
Russia	70	87	199	13.8
Belarus	35	46	587	16.5
Moldova	52	30	181	28.5
Ukraine	44	51	289 ^a	20.6
Armenia	54	83	140	8.5
Azerbaijan	40	15	172	12.2
Georgia	62	87	154	11.6
Kazakhstan	35	40	201 ^a	14.0
Kyrgyzstan	48	–	165 ^a	13.5
Tajikistan	31	14	–	8.3
Uzbekistan	18	–	–	11.2

Source IMF. *World Economic Outlook*, April 2022, October 2022; World Bank Open Data

^a2020

In the 1990s, there was high inflation in post-Soviet countries, caused by the rapid liberalization of low Soviet prices. Although inflation was reduced over the next decade, it still remains high. The root cause of high inflation is the shortcomings of the economic mechanism: in some countries, it is high monopolization (Russia, Belarus, Kazakhstan), in others—the state budget deficit (Armenia) and third—both (Ukraine).

High inflation makes the monetary authorities of the post-Soviet countries restrain the growth of the money supply, which results in a low monetization coefficient. As a result, bank assets and, accordingly, the ability of local banks to issue loans are slowly growing. The situation with loans in the country becomes better if the country opens its banking system to branches of foreign banks (in Armenia, about half of the banking assets belong to branches and subsidiaries of foreign banks, in Kazakhstan—more than a third). Another way out, especially in the countries that are less willing to accept foreign banks (Russia, Ukraine), is for local companies to obtain loans abroad, but this increases the external debt of such countries. In general, the credit systems of post-Soviet countries are poorly coping with their main task—the issuance of loans, if we compare them with credit systems of BRICS countries.

When analysing the fiscal system, priority attention is paid to the balance of the budget. If we take the post-Soviet countries, this indicator varies greatly (Table 8). At least two trends can be traced. Firstly, budget revenues and expenditures are highest in the most developed post-Soviet countries. Secondly, in the 2000s, there was a tendency to reduce budget deficits in countries with budget deficits, which was then cut short by the global economic crisis and COVID-19 pandemic (Table 8).

Table 8 General government fiscal balances, % of GDP

	Indicator							
	2000	2005	2010	2014	2019	2020	2021 (est.)	2022 (projections)
Russia	1.9	8.1	−3.4	−1.1	1.9	−4.0	0.8	−1.9
Belarus	−0.6	−0.7	−2.6	0.1	0.6	−1.7	0.0	−1.1
Moldova	−1.0	1.5	−2.5	−1.6	−1.5	−5.3	−1.9	−6.1
Ukraine	0.6	−1.8	−6.0	−4.5	−2.0	−5.6	−4.0	−17.5
Armenia	−4.9	−1.9	−5.0	−1.9	−1.0	−5.1	−4.3	−5.8
Azerbaijan	−1.0	−0.7	−0.9	2.7	8.4	−6.5	4.2	6.4
Kazakhstan	−0.1	0.6	8.0	2.5	−0.6	−3.1	−3.0	−2.7
Kyrgyzstan	−2.0	0.2	−4.9	−3.1	−0.1	−4.2	−0.3	−5.3
Tajikistan	−0.6	0.2	1.3	−2.0	2.3	−3.1	−1.5	−3.4
Uzbekistan	...	...	...	0.0	0.0	−4.5	−6.2	−4.0

Sources World Bank (2022). Europe and Central Asia Economic Update: War in the Region. Spring; IMF. *World Economic Outlook* for the relevant years

Unlike developed countries, in many post-Soviet countries, public debt does not pose a big problem. In 2020, in relation to GDP, it was 19.3% in Russia, 26.3% in Kazakhstan, 36.4% in Uzbekistan, 48.0% in Belarus, around 50% in Moldova and Tajikistan and over 60% in Ukraine, Armenia, Georgia and Kyrgyzstan.

8 External Sector

Half of the countries under consideration, except for the fuel-exporting countries—Russia, Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan—have a current account balance almost consistently negative, which is a serious problem for them (Table 9). They partially compensate for this deficit with a positive balance on the second part of the balance of payments (financial account). However, in almost all post-Soviet countries, the inflow of foreign capital is based not so much on foreign direct investments as on large borrowings abroad, which increases the foreign debt.

The severity of the country's external debt is indicated by the ratio of total debt service (its repayment and interest payment) to exports of goods, services and primary income. In 2020, Azerbaijan (10.8%), Belarus (11.2%) and Moldova (17.5%) had the best indicators, while Armenia (34.9%), Georgia (35.3%) and Kazakhstan (56.3%) had the worst. This is mainly the debt of the private sector.

The growth of private external debt was facilitated by the structure of foreign capital inflows to post-Soviet countries—mainly loan assets (in the balance of payments statistics they are listed as other investments). Portfolio investments abroad and from abroad do not play a big role in post-Soviet countries: the securities market is weak here; besides, it is highly volatile. The existing shortage of capital in these

Table 9 Current account balance in post-Soviet countries, % of GDP

Country	2000	2020	2008	2016	2019	2020	2022 (projections)
Russia	11.1	11.0	6.1	2.7	3.8	6.9	12.2
Belarus	-3.3	1.4	-8.4	-8.6	-1.8	2.7	-1.5
Moldova	-1.8	-10.3	-19.4	-6.3	-8.9	-10.5	-12.8
Ukraine	3.7	2.9	-7.2	-2.6	-0.7	-1.1	...
Armenia	-9.5	-1.0	-12.6	-7.7	-8.2	-2.4	-5.5
Azerbaijan	-0.9	1.3	35.5	14.7	9.2	15.2	31.7
Georgia	-6.4	-11.1	-22.7	-10.1	-5.5	-9.8	-7.2
Kazakhstan	-5.4	-1.8	5.3	0.3	-3.6	-3.0	3.0
Kyrgyzstan	-1.5	2.8	-6.5	-14.2	-9.1	-5.2	-12.5
Tajikistan	4.9	-2.7	-8.8	-4.7	-3.3	2.8	3.8
Turkmenistan	1.7	5.1	19.6	-1.9	5.1	2.0	2.5
Uzbekistan	-1.0	7.7	13.6	0.1	-5.6	-7.0	-3.3

Source IMF. *World Economic Outlook* for the relevant years

countries is mitigated by the influx of other investments rather than portfolio and direct investments. During the years of economic recovery, positive aspects of this policy prevail—the inflow of loan capital from abroad largely compensates for the weakness of national banking systems, but during the years of economic crisis, negative aspects prevail—it becomes much more difficult to repay previously taken loans and credits.

As for FDI outflows, 80% of these are investments from Russia, although other countries, primarily Azerbaijan and Kazakhstan, as well as Ukraine, participate in the export of these investments. The foreign direct investment accumulated in post-Soviet countries is more diverse. Although Russia is the main object of foreign direct investment in the post-Soviet space, other countries (primarily Kazakhstan, as well as Azerbaijan, Turkmenistan and Ukraine) were also attractive to foreign capital.

Military actions in Ukraine and Western economic sanctions should reduce the weight of Russia and Ukraine in FDI outflows and inflows, as well as affect FDI stocks of both countries, and maybe also the neighbouring post-Soviet countries. Therefore, the volume and geography of FDI in the coming years should differ markedly from the one shown below (Table 10).

In the statistics of most post-Soviet countries, there is no complete data on the size of their participation in international labour migration, an important form of foreign economic relations. Nevertheless, one can use the UN forecast on migration (all types, not only labour) for permanent residence (Table 11).

The table shows that Russia is one of the leaders in the world in terms of the influx of migrants. Comparing this data with the experts' estimates, one can conclude that Russia is the centre of attraction primarily for migrants from Transcaucasia and Central Asia, while migrants from Eastern European post-Soviet countries also move to the EU.

Table 10 FDI stock of post-Soviet countries in 2020, \$ bln

	Indicator	
	Outward stock	Inward stock
Russia	379.6	446.7
Belarus	1.5	14.5
Moldova	0.3	4.8
Ukraine	2.9	48.9
Armenia	0.5	5.2
Azerbaijan	26.8	32.8
Kazakhstan	14.2	151.4
Kyrgyz Rep	0.9	4.2
Tajikistan	0.2	3.1
Turkmenistan	–	39.3
Uzbekistan	0.2	10.3

Source UNCTAD (2021). World Investment Report. New York: United Nations Publications

Table 11 Net migration in post-Soviet countries in 2015–2020, thousand people

	Indicator
Russia	912
Belarus	44
Moldova	–7
Ukraine	50
Armenia	–25
Azerbaijan	6
Georgia	–50
Kazakhstan	–90
Kyrgyzstan	–20
Tajikistan	–100
Turkmenistan	–25
Uzbekistan	–44

Source UN (2019). World Population Prospects, <https://population.un.org/wpp/Download/Standard/Migration/>

Personal transfers coming into the country from abroad (this is the main financial indicator of the importance of labour migration for the country) are a huge source of income for many post-Soviet countries. According to 2020 data, these transfers in relation to GDP range from 0.2% (Kazakhstan) and 0.7% (Russia) to 9.8% (Ukraine), 10.5% (Armenia), 11.6% (Uzbekistan), 13.3% (Georgia), 15.7% (Moldova) and even 26.7% (Tajikistan) and 31.3% (Kyrgyzstan).

Now we should consider foreign trade in goods. The data in Table 12 allow us to conclude that if in the fuel-exporting countries (Russia, Azerbaijan, Kazakhstan) exports radically exceed imports, then in other countries the picture is the opposite.

An analysis of the post-Soviet countries' structure of foreign trade (only 22% of their exports fall on finished products) shows that most of them are experiencing the problem of monoculture and (or) primitive exports: they mostly deal with agricultural products, raw materials and fuel, metals, wood and wood products and textiles. As a result, these countries have a limited range of goods in trade with each other, and therefore mutual trade makes up a significant, but not predominant part of their foreign trade: mutual trade accounted for 25% of imports and 18% of exports in the countries' foreign trade in 2019. For comparison, we note that this indicator was 65% in the EU, 48% in the USMCA, 26% in ASEAN and 15% in MERCOSUR. This means that the problem of monoculture and primitive exports turns into a problem of weakness of intraregional trade.

Table 12 Post-Soviet countries: merchandise trade in 2021, \$ bln

	Exports	Imports	Share of other post-Soviet countries in trade turnover, % ^a
Russia	494.0	303.9	14.5
Belarus	40.0	41.6	60
Moldova	3.2	7.2	21
Ukraine	68.1	72.5	17
Armenia	3.0	5.4	31
Azerbaijan	21.7	11.6	14
Kazakhstan	60.6	40.2	27
Kyrgyzstan	1.7	5.6	46
Tajikistan	2.0	4.5	55
Uzbekistan	14.1	23.7	32

Source WTO Stats. Merchandise trade, https://stats.wto.org/dashboards/merchandise_en.html; CIS STAT <http://www.cisstat.com/pagetop.htm>

^a2019

9 Social Sector

The demographic problem in the post-Soviet countries is one of the most acute ones affecting the development of the social sector. The rapid population growth in the Central Asian countries contributes to the growth of tension in their labour markets, the scale of unemployment and an increase in external migration. On the other hand, slow population growth or decline in the post-Soviet countries of Eastern Europe creates a shortage of labour, partially offset by immigration.

Migration flows, primarily labour migration, are largely due to the significant differentiation of per capita income between post-Soviet countries, as measured by GDP PPP per capital in constant prices (Table 1). In Russia and Georgia, this indicator has increased slightly compared to the beginning of the 1990s, and in Ukraine, Kyrgyzstan and Tajikistan (and probably in Moldova) it has decreased compared to the Soviet level, which gives rise to another social problem—mass poverty. Ukraine and Moldova are the poorest countries in Europe, while Tajikistan and Kyrgyzstan have approached African countries with their GDP per capita.

Although extreme poverty is rare in most countries of the region (the share of the population with incomes below \$1.90 in most post-Soviet countries does not exceed 0.1%), but if we take Central Asia, Tajikistan had a significant figure at the end of the last decade—4.8%, while in Transcaucasia, it was high in Armenia (2.1%) and Georgia (4.5%).

The unresolved problem of poverty is aggravated by strong social stratification. In post-Soviet countries, there is an unequal distribution of income between the least and most affluent segments of the population. As can be seen from Table 13, the highest stratification of the population (judging by the Gini coefficient) is observed

Table 13 Differentiation of income in post-Soviet countries, 2021 or the last year available

	The income ratio of the upper and lower quintiles, difference in the times	Gini Coefficient
Russia	8.4	0.403
Belarus	4.0	0.266
Moldova	6.4	0.346
Ukraine	3.7	0.261
Armenia	8.2	0.381
Azerbaijan	2.6	...
Kazakhstan	4.2	0.291
Kyrgyzstan	5.9	0.344
Uzbekistan	4.5	0.276

Source Interstate Statistical Committee of the Commonwealth of the Independent States

in Russia, Moldova, Armenia and Kyrgyzstan; the lowest is in Belarus and Ukraine. At the same time, it should be borne in mind that in post-Soviet countries, a significant part of the income of the rich population is hidden due to the shadow economy and the movement of legal entities-recipients of income to offshore.

10 Conclusions

1. The economic catastrophe that occurred in the post-Soviet space in the 1990s threw the post-Soviet countries back so much that they were able to restore the absolute size of the production of goods and services only two decades after the decline in GDP production that began in the USSR since 1990.
2. Small and medium-sized businesses dominate the private sector of post-Soviet countries in two cases—in the most backward countries due to the concentration of extra employees in small agricultural and commercial enterprises, as well as in more developed small countries due to the small size of their economies—in the Baltic States. Large private business has a noticeable spread only in the largest post-Soviet economies—in Russia, Kazakhstan and Ukraine (but not in Belarus). The place of large national private business in other countries is occupied by state-owned companies and foreign MNEs.
3. Despite the significant differences between the post-Soviet countries, their human capital remains the strength of the region as a whole; however, the level of its economic development is still low. Nevertheless, the peculiarities of the structure of their economy and, above all, the real sector do not allow the effective use of accumulated human capital.
4. In a number of countries, the population continues to decline, as in the previous two decades (Belarus, Moldova, Ukraine). In other countries (Azerbaijan, the

countries of Central Asia), it is growing rapidly. The lack of jobs and low wages are pushing employees in these countries to emigrate, especially temporarily. Migration flows in the post-Soviet space have become one of the most noticeable in the world. It can be concluded that labour migration is the main form of economic ties between post-Soviet countries.

5. In the post-Soviet space, over the past two decades, competitive industries have reoriented their capacities to the world market, partially compensating for the decreased demand for their products in the domestic market. These industries, mainly producing raw materials, fuel, materials and semifinished products, maintained their fixed assets in working order and even modernized them, although they did not increase their capacity. The industries that worked primarily for the domestic market were unable to significantly modernize even their noticeably reduced capacities, although there were many exceptions (food industry, communications, trade).
6. The monetary system is one of the weakest places in the economy of most post-Soviet countries. This is evidenced by both the low coefficient of the economy monetization (the ratio of money supply to GDP) and the small volume of loans issued by local banks. In addition, the resources of the financial capital are subject to constant severe depreciation due to high inflation in most countries.
7. Half of the post-Soviet countries, except for the fuel-exporting ones, have a stable negative current account balance, which is a serious problem for them. They partially compensate for this deficit with a positive balance on the second part of the balance of payments (the financial account). However, in all post-Soviet countries, the inflow of foreign capital is based, not so much on foreign direct investment, as on large borrowings abroad, which increases the external debt.
8. The growth of external debt was facilitated by the structure of foreign capital inflows—mainly loan assets. During the years of economic recovery, the positive aspects of this policy prevail—the inflow of loan capital from abroad largely compensates for the weakness of national banking systems, but during the years of economic crisis, negative aspects prevail—it becomes much more difficult to repay previously taken loans and credits.
9. Analysis of the commodity structure of foreign trade of post-Soviet countries (and only 22% of merchandise exports of post-Soviet countries fall on finished products) shows that most of them have a problem of monoculture and (or) primitive exports: they mostly deal with agricultural products, raw materials and fuel, metals, wood and products from it and textiles. As a result, the CIS countries have a limited range of goods in trade with each other and therefore mutual trade makes up a tangible, but not a predominant part of their foreign trade. Therefore, mutual trade accounted for 25% of imports and 18% of exports in all foreign trade of the CIS countries.
10. The social sphere of the post-Soviet countries is saturated with various problems, but probably the main ones are the demographic problem, the problem of mass poverty, and the problem of social stratification.

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International Business: Macro and Micro Aspects

Balance of Payments



Alexander Bulatov 

Abstract The chapter analyses the fundamentals of the balance of payments, its contents and theories, as well as balance of payments management.

1 Introduction

The third part of the book—about international business—begins with a chapter on the balance of payments as a document that gives an idea of the size of international business in any country.

2 Fundamentals of the Balance of Payments

The balance of payments is a report on all transactions of residents of the country with non-residents (i.e., international transactions) for a certain period (usually 3 months, 6 months and 12 months). In turn, a resident is an economic agent who has a permanent residence in the country (as opposed to a non-resident). The term “balance of payments” appeared in 1767 in a book by Smith’s contemporary James Stewart, but the first official balance of payments was compiled in the USA in 1923, although the term “international accounts” was used for a long time.

The balance of payments covers the movements of assets (their flows) between countries. The balance of payments speaks about the inflow or outflow of assets, rather than assets already accumulated by non-residents in the country and its residents abroad. However, one can find these data in the appendix to the balance of payments under the name “International Investment Position”.

The initial data for the balance of payments is usually collected by the main statistical body of the country, and the balance sheet is usually compiled and published by the central bank. At the international level, the IMF collects, summarises and

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publishes data on the balance of payments of its member countries. It also periodically issues recommendations on the compilation of the balance of payments (since 2008, the sixth edition of the Balance of Payments Manual [BPM6] has been in operation, closely coordinated with the new version of the System of National Accounts prepared by the UN in the same year).

2.1 Principles of the Balance of Payments

This is primarily the principle of the double-entry system of bookkeeping, i.e., the splitting of residents' transactions with non-residents into two columns called "credits" and "debits", the difference between which is called "net (balance)".

The export of goods and services, as well as the receipt into the country of income from exported capital and labour, are recorded in the balance of payments as credit transactions, and the import of goods and services, the transfer abroad of income from imported capital and labour are recorded as debit transactions. The current transfers to the country are recorded as credits, the current transactions out of the country—as debits. All the above operations are considered current, as they are usually completed within a year, and therefore they are allocated to the section (part) of the balance of payments called "current account".

The acquisition of assets abroad by residents (for example, making investments abroad) is recorded as credit transactions (after all, this is an increase in residents' assets), after deduction of assets they previously acquired abroad and then sold. The inflow of non-residents' assets into the country (minus sale of their assets they previously acquired in the country) is recorded as debits since this is considered an increase in the country's obligations towards non-residents (after all, the country has to return their capital to them if they take it back abroad i.e., the country incurs liabilities).

The longer-term (in comparison with goods, services, wages, investment income and transfers) nature of the movements of non-financial and financial assets between countries makes it necessary to allocate them into two separate sections of the balance of payments called "capital account" and "financial account". The first reflects the movements of non-produced non-financial assets (mainly various property rights) and capital transfers (consist mainly of debt forgiveness and migrants' capital transfers). The second reflects the movements of all other types of capital. In economic analysis (but not in statistics), they are sometimes combined under the names "capital transactions", "capital account" and "capital movements account", which reflects their close essence (Table 1).

Another principle of the balance of payments is the fixation of transactions at the time of their commission. For example, when a product is exported, its value is recorded in the balance of payments in the "credits" column. If payment for the goods is made later, for example, when the goods are delivered in instalments, then the cost of the goods delivered abroad is simultaneously recorded as an export credit in the "debits" column.

Table 1 Rules for reflecting transactions in the balance of payments

Transactions	Credits	Debits
Goods and Services	Exports of goods and services	Imports of goods and services
Primary Income	Remuneration of residents working abroad and income of resident investors abroad	Remuneration of non-residents working in the country and income of non-resident investors in the country
Secondary Income	Receipt of current transfers	Transfer of current transfers
Capital Account	Receipt of capital transfers and non-produced non-financial assets	Transfer of capital transfers and non-produced non-financial assets
Financial Account	Net acquisition (net changes) of assets abroad by residents	Net incurrence (net changes) of liabilities in the country to non-residents

Illegal transactions are also included in the balance of payments. For example, the central bank records fictitious transactions for which it has information in the article “Non-classified transactions” of the financial account, and the movements of capital for which it has no information are estimated based on the section “Net Errors and Omissions”. Estimates of the smuggling of goods and services are included in the trade balance.

Another principle of the balance of payments is that it is most often made up in US dollars, the main international currency. When preparing the balance of payments, data in the national currency can also be used, but they are recalculated at the exchange rate in effect at the time of drawing up the balance of payments.

2.2 Balance of Payments Scheme

The balance of payments consists of four sections—Current Account, Capital Account, Financial Account, Net Errors and Omissions.

The current account covers the movement of the following:

- Goods and services, and unlike customs statistics, imports of goods are estimated at FOB prices, i.e., without taking into account the cost of transportation, storage and services, which will be taken into account in the article “Transport services” of the balance of payments. In addition, the import and export of goods also include estimates of the import and export of goods by tourists, etc.;
- The primary income, which consists of the remuneration of non-residents in the country (primarily temporary migrants) and residents of the country abroad, the income of foreign investors in the country and domestic investors abroad, separately allocating income from the rent of assets;
- Secondary income, which includes current transfers. These are mainly personal money transfers from abroad, international humanitarian and technical assistance,

contributions to international organisations and the maintenance of government employees abroad—in embassies, military bases, etc.

The capital account, despite its capacious name, is usually small and reflects only the transfer of non-produced non-financial assets and capital transfers, in particular:

1. Transfer of rights to natural resources (for example, fishing rights), contracts, trademarks and brands;
2. International assistance in the form of investment grants (for example, transfer of equipment, military equipment for free);
3. large payments that do not have a regular nature, on account of compensation (for example, for an oil spill);
4. Transfer of assets abroad by individuals when changing residency, gifts and inheritance;
5. Forgiveness of external debt.

Balance from current and capital accounts (net lending (+) / net borrowing (–)) sums up the balance of the two previous accounts. This sum represents the net lending (surplus) or net borrowing (deficit) by the economy with the rest of the world as a result of current transactions.

The financial account measures how that balance (net lending to or borrowing) is financed. The financial account covers the movements of financial assets, primarily investment from abroad (the investment income is included in the current account), as well as the movement_{LI} of reserve assets. This is a very large section of the balance of payments, comparable in size to the current balance. In it, liabilities (net incurrence of liabilities) refer to the inflow of capital into the country, and assets (net acquisition of assets) refer to its outflow.

Net errors and omissions represent the difference between balance from current and capital accounts, on the one hand, and balance from the financial account, on the other hand. The magnitude of net errors and omissions, usually with a negative sign, is especially high in countries with a large capital flight, which, due to the often illegal nature of this flight, is not fully reflected in the capital account and financial account.

The balance of payments can be constructed not only in the standard, so-called neutral presentation described above but also in an analytical presentation. In the analytical presentation, the financial account does not include changes in the size of the country's reserve assets, but allocates them to a separate section of the balance of payments, so that it can be seen whether the balance of payments was in surplus or deficit: if the reserves increased, then with a surplus, and if they decreased, then with a deficit.

2.3 *Balances from International Accounts*

Like any balance sheet, the balance of payments in the standard presentation ends up at zero. However, balances of its sections (accounts) are usually in surplus or deficit and represent a subject for macroeconomic analysis.

First of all, this applies to the balance of the current account. It is considered so important that it is often used to analyse the entire balance of payments situation (balance of payments situation, balance of payments results, positive/negative balance of payments). Therefore, when these terms are used in economic publications, they usually mean current account balance. Such identification arose because current transactions, on the one hand, have a rapid (current) impact on the country's economy and, on the other hand, determine the state of the financial account. For example, a country with a positive capital account balance is usually a net exporter of capital (or, like China, increases reserve assets) and when the capital account balance is negative, the situation is usually the opposite.

The joint balance of the current account and the capital account is less analysed since adding a usually small capital account balance to the current account balance does not change the value of the latter much.

The analysis of the balance of the financial account is not so easy, since it is affected not only by the movements of private but also public capital. This movements can go in opposite directions—the balance of the movements of private capital can be with a preponderance towards the import of capital (as in China for almost all years), while the balance of the movement of public capital can be with a preponderance towards the export of capital, because the state actively provides loans abroad.

For analytical purposes, the balance of movements of reserve assets can also be considered as an indicator reflecting the actual result of the country's balance of payments (although one should be aware that a loan taken abroad to prevent a balance of payments crisis can also be spent on the growth of reserve assets).

A balance of payments crisis occurs when a systematically large negative current account balance is covered by reserve assets and (or) attracting foreign loan capital. In this case, the country's sovereign credit rating deteriorates markedly due to decreased creditworthiness and increased external debt.

However, a systematically negative current account balance does not always indicate a balance of payments crisis because it can also be systematically covered by the excess of capital inflow over its outflow, which does not increase external debt (i.e., mainly due to the import of foreign direct investment). The opposite situation, when a systematically positive current account balance is balanced by the outflow of capital and the growth of reserve assets, also does not indicate a balance of payments crisis. In both of these cases, we can talk about the balance of payments equilibrium.

3 Analysis of Balance of Payments and International Investment Position

The sections of the balance of payments consist of standard components (items). To consider these items, we can turn to the balance of payments of China (Table 2).

The current account in the Chinese balance of payments is positive (in surplus), which is explained by the rapid growth of Chinese merchandise exports. At the same time, the article “Services” has a deficit since the beginning of the century due to the

Table 2 Balance of payments of China in 2021, \$ bln

Current account	317.3
<i>Goods</i>	562.7
Credit	3215.9
Debit	2653.1
<i>Services</i>	−99.9
Credit	338.4
Debit	438.4
<i>Primary income</i>	−162.0
Credit	274.5
Debit	436.5
<i>Secondary income</i>	16.5
Credit	49.2
Debit	32.7
Capital account	0.1
<i>Balance from current and capital accounts</i>	317.4
Financial account	150,0
<i>Direct investment</i>	−205.9
Assets	128.0
Liabilities	334.0
<i>Portfolio investment</i>	−51.0
Assets	125.9
Liabilities	176.9
<i>Financial derivatives (balance)</i>	−11.1
<i>Other investment</i>	229.8
Assets	387.3
Liabilities	157.6
<i>Reserve assets</i>	188.2
Net errors and omissions	−167.4

Source State Administration of Foreign Exchange. The time-series data of Balance of Payments of China, <https://www.safe.gov.cn/en/2019/0329/1496.html>

rapidly growing import of transport, insurance, tourism services and charges for the use of the intellectual property.

Primary income also has a deficit primarily due to the excess of foreign investors' income in China (\$417.4 billion in 2021) over the much smaller income of Chinese investors and employees abroad (\$253.6 billion). The balance of secondary income is positive.

In China's financial account, the export of capital prevails over its export. However, this is not due to direct investment (in which the investor owns not less than 10% of assets) and portfolio investment (less than 10%), but due to other investments (deposits, loans, trade credit and advances etc.) and the accumulation of huge official reserve assets (their growth in the balance of payments is interpreted as the export of capital).

In most countries, the balance from the financial account is not equal to the balance from the current and capital account. Bui in China this gap is enormous—\$167.4 billion in 2021 (\$218.6 billion in 2016). There are various explanations for this phenomenon, including both the shortcomings of accounting for foreign economic transactions in China and the huge unaccounted capital outflow from the country, including the purchase of foreign currency by the population.

Ultimately, all assets and liabilities accumulated during foreign transactions are recorded in the international investment position of China (Table 3).

As can be seen from the table, the net international investment position of China is positive—assets prevail over liabilities as a result of huge reserve assets. Like in other Asian economies, Chinese reserve assets consist of foreign currency reserves and the share of monetary gold is modest—3%.

Table 3 International investment position of China in end-2021, \$ billion

Net International Investment Position	1983.3
Assets	9324.3
Direct investment	2581.9
Portfolio investment	979.7
Financial derivatives	15.4
Other investment	2320.5
Reserve assets	3426.9
Liabilities	7341.0
Direct investment	3623.8
Portfolio investment	2155.4
Financial derivatives	10.3
Other investment	1551.6

Source State Administration of Foreign Exchange. The time-series data of the International Investment Position of China, <https://www.safe.gov.cn/en/2018/0928/1459.html>

4 Balance of Payments Adjustment

The state of the balance of payments has a noticeable impact on the entire national economy. Therefore, economic theory and practice pay considerable attention to the adjustment of the balance of payments.

4.1 *Theories of the Balance of Payments and Its Adjustment*

The classical theory of automatic balance of payments equilibrium, put forward by Adam Smith's friend, philosopher David Hume, then faded into the past along with the gold standard at which exchange rates were fixed. However, in recent decades, the importance of this theory has increased again. If, in previous conditions, the role of an automatic regulator was assumed by the article "Reserve assets", now, in conditions of floating exchange rates, the exchange rate of the national currency becomes such an automatic regulator—it decreases when the balance of payments deteriorates and increases when it improves, which automatically changes current operations and partly in capital ones.

The neoclassical approach to the balance of payments, developed by Alfred Marshall, Joan Robinson, Abba Lerner and Fritz Machlup, describes the impact of devaluation on the current account. It proceeds from the fact that the core of the balance of payments is foreign trade, the balance of which is determined primarily by the ratio of the levels of export and import prices (terms of trade index) multiplied by the exchange rate. The foreign trade prices are regulated not by the country, but by the world market, but a country can regulate the foreign trade balance by changing the exchange rate of its currency. The devaluation stimulates the physical growth of exports: if a Mexican exporter earns the same \$100 for his barrel of oil on the world market before and after the devaluation, then before the devaluation (for example, at the rate of 15 pesos per dollar), he received 1500 pesos when importing this revenue to Mexico, and after the devaluation of the peso to 20 pesos per dollar this sum already equals 2000 pesos. At the same time, the devaluation restrains the physical growth of imports: if before the devaluation, a Mexican importer spent 1500 pesos on importing a \$100 men's suit, now he will spend 2000 pesos on it.

In the neoclassical approach, indicators such as (a) price elasticity of foreign demand for exports and (b) price elasticity of domestic demand for imports are used to calculate the impact of the exchange rate on exports and imports. The first indicator is a percentage change in the physical volume of exports in response to a percentage change in the exchange rate, e.g., a 16% increase in exports in response to the devaluation of the national currency by 40%, i.e., $0.16 / 0.40 = 0.4$). The second is a percentage change in imports due to a percentage change in the exchange rate, for example, a 20% decrease in imports due to devaluation, i.e., $0.20 / 0.40 = 0.5$. It is clear that price elasticity indicators depend on the structure of exports and imports, for example, consumers cannot significantly reduce the volume of imports,

since it is determined, say, by the import of medicines, not suits. According to the Marshall-Lerner condition, a change in the exchange rate of the national currency can improve the current balance of payments only if the elasticity of foreign demand for exports and the elasticity of domestic demand for imports are more than 1 in total (this usually happens when exports grow faster than import reductions). In our abstract example, this condition will not be met, because $0.4 + 0.5 = 0.9$, and, therefore, devaluation would be impractical. Devaluation in other sizes may lead to different results. Moreover, these results are different at different time intervals—in the short-term (especially up to six months), the elasticity of exports and imports is much less than in the medium-term (up to two or three years), i.e., the effect of devaluation is more medium-term than short-term. After all, in the short-term, producers do not have time to increase the volume of exports and consumers do not have time to adjust to new prices.

The neo-Keynesian approach to the balance of payments is based on the work by Sidney Alexander based on the ideas of Nobel laureates James Meade and Jan Tinbergen. This approach connects the balance of payments (primarily the trade balance) with such elements of gross domestic product Y as a domestic consumer (C) and investment demand (I), the sum of which is called by the term “absorption”— A . The balance of payments (more definitely, current account balance, CAB) can be positive only when Y exceeds A , i.e., $CAB = Y - A$, and to improve CAB , the devaluation should increase Y relative to A , which is possible in an economy with resources not fully used (below the production possibility frontier). However, in an economy with full use of economic resources (for example, with full employment and fully loaded production capacities), devaluation in the medium-term increases not so much Y as it decreases A (for example, due to the price rise of imported goods that cannot be replaced by locally produced goods), which leads to a decline in CAB . The neo-Keynesian approach correlates with the neoclassical one, for example, the Marshall-Lerner condition for devaluation is met, and exports grow faster than imports only when Y can grow faster than CAB .

The monetarist approach to the balance of payments was laid down in the works by Jaque Polak, Harry Johnson and Robert Mundell. The main attention in the monetarist approach is paid, of course, to monetary factors, primarily the impact of the balance of payments on monetary circulation in the country. Monetarists believe that it is the imbalance in the country’s money market that determines the imbalance of payments. Hence, their main recommendation is as follows: one should not interfere radically not only in monetary circulation but also in international settlements of the country. After all, if there is more money in circulation than necessary, then they try to get rid of it, including buying more foreign assets, goods and services. To eliminate the balance of payments deficit, only tight control over the growth of the money supply is required.

4.2 *The Relationship of the Balance of Payments Balance with Other Macroeconomic Indicators*

In economic theory, they operate with the concept of basic macroeconomic identity:

$$Y = C + G + I + NX \quad (1)$$

where Y is the gross domestic product;

C —private consumption;

G —government consumption;

I —investment;

NX —balance of foreign trade.

The identity can be transformed into some others that will demonstrate the relationship between the balance of payments and other indicators of the national economy (as is done, for example, in the absorption approach).

Let's make two assumptions—let's reduce the frequent and government consumption into total consumption C , and expand the trade balance to the current account balance (CAB), because in most countries of the world it is determined by the trade balance. Then the basic macroeconomic identity will look like this:

$$Y = C + I + CAB \quad (2)$$

Then the identity (2) can be transformed as follows:

$$CAB = Y - (C + I) \quad (3)$$

It follows from the identity (3) that with a positive current account balance, the country creates more products than it consumes and invests, and less when it has a negative one. Therefore, a consistently large positive balance (as, for example, in the case of China, Japan and Russia) does not at all indicate the economic success of the country, although it is preferable to a negative balance. It more often testifies to underconsumption in the country—insufficient consumer demand (as in China) or investment demand (as in Russia). At the same time, the example of Germany with its positive balance of payments indicates rather a great demand in the world for German exports, mainly high-tech.

Then we should note that GDP is equal to the sum of consumption and savings:

$$Y = C + S \quad (4)$$

where S is savings.

By comparing the identities (2) and (4), we can make a new identity:

$$S = I + CAB \quad (5)$$

from which it follows that:

$$\text{CAB} = S - I \quad (6)$$

This means that a country's current account balance is determined by the difference between its savings and investment. If savings in the country exceed investment ($S > I$), then the current account balance will be positive, and vice versa, if $S < I$, then the balance will be negative.

The current account balance is also related to the condition of the state budget. The state budget deficit D is usually financed by savings S and, therefore, identity (6) can be modified in this way:

$$\text{CAB} = S - I - D \quad (7)$$

From which it follows that the value of the current account balance depends not only on how a country's savings correlate with its investment but also on its state budget deficit (if there is one).

Finally, the current account surplus/deficit affects the size of the money supply in the country. With a large balance of payments surplus, the amount of foreign currency imported into the country by exporters exceeds the needs of importers in this currency. Therefore, a noticeable amount of foreign currency after its sale to importers remains in the hands of exporters, and they change it in banks for the national currency, which the central bank has to issue specifically to buy their foreign currency balances from exporters. As a result, on the one hand, the country's reserve assets are growing rapidly, and on the other hand, the money supply is growing rapidly, which is fraught with inflation.

4.3 Balance of Payments Adjustment Practice

A systematically negative current account balance is considered potentially dangerous, as it requires equalisation in the form of a systematically positive financial account. This is more difficult to implement because of the greater volatility of international capital movements than international trade (see chapter "[World Economy Major Trends: New Normal, The Forth Industrial Revolution, Globalization, Sustainable Development](#)"). Therefore, when adjusting the balance of payments, they primarily regulate the current balance of payments and especially its core—the trade balance, using both foreign trade measures (primarily measures to restrict imports and promote exports (chapter "[Multilateral Trading System and Global Trade Regulation](#)")) and currency (primarily devaluation).

However, a systematically large current account surplus also indicates undesirable moments in the economy. After all, with such a surplus, the country systematically produces more goods and services than it consumes and invests. Of course, at the same time, its external assets which bring income (in most countries even reserve

assets are held mainly on deposits and in foreign securities) are growing rapidly, but, as practice shows, in the long run, this is a less effective way compared to investing assets in its own economy.

The ideal situation is when the balance of payments is in equilibrium in the long term. However, it is not easy to achieve this situation because it may conflict with the goals of economic policy. For example, in the countries of East and Southeast Asia, the use of the Japanese model with its emphasis on export-oriented production of goods and services is aimed at economic modernisation, and the resulting stable surplus of their current account balance is, in fact, a side effect of this modernisation model.

With a current account surplus, it is spent on the growth of reserve assets and capital outflow. How is the current account balance financed if it is in deficit? Of course, first, by the inflow of foreign capital. It is considered to be the most preferable inflow of foreign direct investment, which, unlike portfolio investment and especially other investments, do not turn into a subsequent capital outflow and carry with them such economic resources as entrepreneurship and knowledge. However, it is hard to increase the inflow of direct investment into the country, especially in the short-term and medium-term periods. The inflow of investment from abroad into the shares of national companies depends on their prospects, and the inflow of foreign investment into domestic bonds and bank deposits is largely determined by the national interest rate, the increase of which is attractive for such foreign investment and domestic savings but slows down investment activity in the country. Finally, a large inflow of foreign short-term capital can increase the money supply in the country, as well as inflation, and most importantly, it is fraught with a sudden stop of capital inflows when the national economy, accustomed to using foreign loan capital, suddenly loses it, which happened, for example, during the crisis of 2008–2009. If, in 2007, the net inflow of portfolio and other investments to less developed economies amounted to \$194 billion, then the following year it was replaced by a net outflow of \$349 billion.

Therefore, to adjust the balance of payments crisis, the devaluation of the national currency is most often carried out, taking into account all the above-mentioned points, as happened, for example, in Mexico in the conditions of creeping, gradual devaluation of the peso in the twenty-first century. In addition, although less willingly, countries resort to short-term financing of the deficit at the expense of reserve assets. Finally, in case of a balance of payments crisis, so-called emergency financing is resorted to (chapters “[Foreign Aid](#)” and “[External Debt](#)”).

4.4 Global Imbalances

In the course of international payments and global capital flows, global (international) imbalances arise, i.e., an imbalance in the movements of capital between countries, as a result of which some countries become net exporters (Germany, Japan, Russia) while others become net importers of capital (USA, UK, France, India). In turn, this is a consequence of the imbalance of their balance of payments (a positive current

account turns into a positive financial account if we consider, as such, the excess of capital exports over its imports).

The imbalance of the balance of payments (and as a result, the imbalance of capital flows between countries) is ultimately explained by the imbalance of domestic savings and investment—in some countries, savings exceed investment, in others vice versa, and only the inflow of financial capital from abroad allows them to compensate for the lack of assets to finance domestic investment. For example, in 2021 in Germany, savings accounted for 30% and investment for 23% of GDP, and in the USA, on the contrary,—20 and 21%, respectively. As a result, the United States compensated for the lack of domestic savings by net capital imports, including from Germany, which was a net exporter of capital.

Recall that savings are an unspent part of GDP for consumption, and the rate of savings is the ratio of a country's savings to its GDP. In some countries, this rate is not much more than 20%, in others, it is close to 30% (for example, in Germany), and in China, it is more than 40%. Such a large differentiation of the savings rate is explained by many reasons. For example, the low savings rate in the United States is a consequence of the policy of encouraging consumption in every possible way as the main engine of the American economy. On the contrary, in China, the high savings rate is explained by the need to finance huge investments, as well as by the underdevelopment of the social security system, which is why many Chinese need to rely on their savings rather than state pension and health insurance.

From the point of view of international economics, the leading cause of fluctuations in the amount of savings is the state of the current account balance, formed primarily by the difference between imports and exports in foreign trade. After all, a positive balance is added to the country's savings, a negative one reduces them. From this point of view, the low savings rate in the United States is primarily a consequence of the American foreign trade deficit, and the high rate in China, Japan, Germany and Russia is a consequence of the Chinese, Japanese, German and Russian foreign trade surplus.

In turn, the surplus in foreign trade is explained not only by the high competitiveness of exported products and the high global demand for them (as in the case of Germany) but also by the combination of this competitiveness with an undervalued exchange rate of the national currency, such as China. China's official exchange rate, firstly, is set administratively, rather than on the stock exchange, and secondly, it is underestimated concerning PPP by about 2 times. Countries that have a large deficit in trade with China (this is primarily the United States) believe that this is a consequence of the undervalued yuan.

At the same time, only an artificial underestimation of the exchange rate of national currencies cannot be explained by a consistently positive current account. In Germany, there is no national currency at all and the euro exchange rate is not lowered. Here, the stable positive current balance is a consequence of the high competitiveness of the main export goods—machinery, equipment, vehicles and chemical goods.

5 Conclusions

1. The balance of payments is a report on all transactions of residents of the country with non-residents for a certain period (usually 3, 6 and 12 months). In turn, a resident is an economic agent who has a permanent residence in the country. The balance of payments covers the movement of funds (their flows) between countries and not the absolute value of accumulated foreign assets and liabilities (the latter are reflected in the country's international investment position).
2. The balance of payments consists of four sections—current account, capital account, financial account, errors and omissions. The payment balance can be constructed not only in the standard, so-called neutral representation described above but also in an analytical representation. When presented analytically, the financial account does not include changes in the size of the country's reserve assets but allocates them to the separate, fifth section of the balance of payments.
3. The classical theory of automatic balance of payments equilibrium is suitable for modern conditions: if in previous conditions the article "Reserve assets" assumed the role of an automatic regulator, now, in conditions of floating exchange rates, the exchange rate of the national currency becomes such an automatic regulator that it falls when the state of the balance of payments gets worse and increases when it improves, which automatically provokes changes in current operations and partly in capital ones. The neoclassical approach to the balance of payments describes the impact of devaluation on the current account. The neo-Keynesian approach to the balance of payments is based on the idea that with the full use of a country's economic resources, devaluation can increase not so much GDP as consumption and affects the current account of the balance of payments. The monetarist approach to the balance of payments proceeds from the fact that to eliminate the balance of payments deficit, only strict control over the growth of the money supply is required.
4. Fearing a balance of payments crisis, many countries are striving for a positive current account balance. To do this, they regulate, foremost, its basis—the trade balance, using both foreign trade measures (primarily measures to restrict imports and promote exports) and foreign exchange (primarily devaluation). But in the conditions of foreign economic liberalisation, it is hard to actively use foreign trade measures and, therefore, currency measures become the main ones.
5. However, a systematically large positive current account balance also indicates undesirable moments in the economy. After all, with such a balance, the country systematically produces more goods and services than it consumes and invests. Of course, at the same time, it has rapidly growing external assets that generate income (even reserve assets are held on deposits and in foreign securities), but, as practice shows, in the long run, this is a less effective way compared to investing assets in its economy.

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Global Economic Governance and International Economic Organizations



Vladimir Zuev , Elena Ostrovskaya , and Marina Simonova

Abstract After the analysis of international economic organizations' role in global economic governance and its concepts and theories, the chapter focuses on modern trends and challenges in a framework of this governance. Particular attention is paid to the challenges faced by global trade, financial, and energy governance, which is followed by a short review of statistics and analytics on international business.

1 Introduction

Global economic governance can be defined as a system of soft regulation by different actors within the global economy comprising above all international and regional economic organizations (both formal and informal), sovereign states, MNEs, and different types of non-governmental organizations (NGOs). This framework provides for a set of norms and rules for governments and international business and is in constant search of a solution to its key problems through the adoption of various agreements and their implementation. All major actors of the global economy listed in chapter “[World and Global Economy, Global Business Environment, and International Business: Nature, Formation, and Structure](#)” and, above all, national economies led by their governments, are regarded as participants of this system.

The system of international economic organizations is profoundly influenced by the social, cultural and especially political spheres. As compared with the last decade, this system faces more challenges, primarily due to the fact that the world is becoming more divided. Only a decade ago governments seemed to be aligning in their vision of global values supporting market economy, democracy, supremacy of international law, free trade, protection of environment and climate, and global governance. As

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of today, there is no global universal approach. Rather than working together to find solutions to global problems and to mitigate common threats, many states are moving towards unilateral solutions or are deeply divided over multilateral arrangements. Amid serious concerns over security issues, governments are denouncing one international agreement after another, introducing sanctions, launching trade wars, and quitting or blocking the work of international and regional organizations.

New lines of a serious split can be witnessed between developed and developing countries, even among the Western countries, and even among the EU countries that used to be considered the most aligned in their policy and vision. These demarcation lines have a profound impact on all areas of global governance, especially economic security, trade, finance, and energy.

2 Global Economic Governance: Theories, Trends, and Challenges

2.1 The Structure of the System of Global Economic Governance

Most international economic organizations were founded after the Second World War. The United Nations (UN) certainly lies at the center of the system. The UN itself generated a whole “family” of specialized organizations to deal with the international business. Later many other intergovernmental organizations (within or beyond the framework of the UN) joined this family. Based on the areas of the most intensive economic activity analyzed in this chapter (trade, finance, energy) major international economic organizations are represented by:

- in international trade—the World Trade Organization (WTO), United Nations Conference on Trade and Development (UNCTAD), World Customs Organization (WCO), International Chamber of Commerce (ICC);
- in international finance—International Monetary Fund (IMF), World Bank Group headed by the World Bank (WB), Bank for International Settlements (BIS);
- in global energy—International Energy Agency (IEA), Organization of Petroleum Exporting Countries (OPEC), Gas Exporting Countries Forum (GECF), International Atomic Energy Agency (IAEA).

An important feature of the system of international economic organizations is the emergence of a vast variety of informal organizations and fora. The G7 and the G20 turned out to become crucial elements of the system. Other institutions such as Financial Stability Board (FSB) or Basel Committee on Banking Supervision (BCBS) and many others have gained prime importance in the respective areas of global economic governance. Numerous fora, like the World Economic Forum (WEF), support the global institutions by trying to bring positions of different actors closer to a common denominator.

The regional level of the global system is no less important and some solutions are increasingly found within the regional organizations, for instance, in trade. Regional partnerships are more likely to perform well due to more homogeneous policy priorities. The most advanced and integrated regional organization is the EU which member-states unanimously agreed to share their sovereignty in some key areas of economy like a single market and a single currency (for the Eurozone members). Other examples include ASEAN, MERCOSUR, USMCA, and others (chapter “[World Economy Major Trends: International Economic Integration](#)”).

States and governments are not the only active participants in global governance. Non-state actors such as global professional associations, NGOs, different associations, regional authorities, cities, political parties, and movements are becoming more visible and well-heard in their willingness to bring about positive changes at the global landscape. Finally, the MNEs, especially the newly established e-platforms with great coverage and a huge impact on millions of users are also becoming an integral part of the regulative system at a global level.

2.2 Objective Necessity for Global Governance and Principal Challenges

Since national economies remain interdependent on each other, individual nation-states are incapable of ensuring effective governance at the time of globalization. Globalization has, hence, shaken the efficiency of the traditional self-reliance approach or nation-to-nation bilateral governance arrangements, as the ability of individual countries to solitarily address global problems has seriously diminished.

However, many countries have recently started to undertake policies to achieve self-sufficiency and to reduce their dependence on global markets. These policies cover a broad range of sectors and products, from semi-conductors to energy supplies. This lust for self-sufficiency could be another serious test for the global governance. In case the level of interdependence goes down, the necessity to arrive at common solutions within institutions may also be weakened. We think there's a chance it may happen in some sectors. Nevertheless, the overall level of interdependence is deemed to remain high, especially in global and regional security, climate change and environment, global finance (including global debts), innovations, and data flows. Hence, global governance solutions will remain a top priority on the global agenda.

2.3 On the Theories of Global Economic Governance

The concepts and theories of global economy (chapter “[Concepts and Theories of Global Economy](#)”) contain some concepts on global economic governance.

One of them departs from the assumption that the system of governance in order to be well organized and efficient should be based on the strong leadership (Krasner 1983). As the world is moving away from a unipolar system with the USA as a leader to a multipolar structure with various centers including above all China, this assumption could be considered as a factor weakening the foundations of global economic governance.

Partially we can accept this argument, however, it is not about the emergence of new power poles, but rather the nature of political and economic constitution of the new centers of power. When the USA, the EU, and Japan were considered as three major power centers of the world economy the situation was different. They all belonged to the same system of market economies and democratic regimes. To boost their economies the newly emerged centers of power rely less on the market forces but rather on strong state support. The function of the democratic institutions in such economies is downgraded, the system of checks and balances does not work and the key responsibility for the political development belongs to one leader, rarely superseded, as alternatives from opposition are non-existent. Under such circumstances, the leader would not be inclined to submit or share part of this authority with any international institution. Hence, the willingness to cooperate with international institutions lessens.

Based on regime theory (Keohane & Nye 1987), and in line with liberalism and constructivism approaches, there are two other concepts of global economic governance. The one explains the creation of international economic organizations as a product of competition among major international actors for the ability to shape the rules of the international regime. The other puts forward the argument of the advantages of international coalitions. However, in view of the ongoing confrontation and conflicts in international relations, it appears that both concepts are less viable for the current situation of aggravating conflicts and the crisis in multilateralism.

Both concepts are partially opposed by the theory of realism. Structural realist scholars, represented by Waltz, support the idea that the struggle for power and for security raises survival imperative among states (Waltz 2010). As members of international organizations, states seek to guarantee their survival through promotion of their relative and absolute gains. Along with the wish to safeguard relative gains, states constantly engage in interactions trying to promote their absolute gains through participation in international organizations. Interest-maximization motivation brings states back to chaos and anarchy. Therefore, international organizations tend to become the arena for battles for authority and security.

Another proof of the realistic vision amid contemporary conflicts and disputes among states can be found in the ideas of Mearsheimer (Mearsheimer 1995). He argues that the international organizations have no power rather than that given by the member-states. Therefore, international organizations only constitute the playing field for the states. Neo-realist scholars see the international organizations as unable to overcome international disputes, as conflicts cannot be resolved unless states reach their relative gains and ensure their security and stability. With all the abovementioned it can be concluded that today international organizations are best captured by the realism concept through the ideas of self-centrism, and concepts of absolute and

relative gains. Therefore, under the current circumstances, the actual importance of liberalism and constructivism is fading away, at least for the moment.

3 Global Trade Governance

3.1 *Globalization and Trade*

International trade is undergoing a dramatic change under the pressure of current challenges. Geopolitics disrupts trade by massive introduction of restrictions and sanctions. Corona-crisis blocked the conventional trade flows for health security reasons. The rise in nationalistic sentiments leads to introduction of barriers to trade in a wave of protectionism, re-shoring, and disruption of global value chains. Climate change and environmental concerns add up to the strain on trade links urging the states to limit the negative impact of trade on environment. While the challenges to trade remain mostly global, the response to these challenges is again mostly limited to national or at the best—regional measures, which only highlights inadequate functioning of the global economic governance system and its inability to generate efficient solutions to outstanding global problems. The lack of a major agreement within the WTO Doha round and a deadlock in the functioning of the Dispute Settlement Body of the WTO undermine commitments by the leading economies (chapter “[Multilateral Trading System and Global Trade Regulation](#)”).

Experts keep elaborating on de-globalization explaining a downturn in trade expansion by rise in protectionism. Accepting the argument of protectionism, one can notice, on the other hand, the fast development of e-platforms which expose local and closed markets to global competition. 3D printing reduces the need for the replacement of conventional industrial machinery. Amid the increased number of products, physical delivery is no longer required. Data sets, digital music, or videos travel large distances fast through cables and wires or even without them via satellites. As a result, the contribution of these products to trade lessens. These costs constitute a substantial share of trade costs and therefore their reduction results in lower trade value.

We can already witness two conflicting trends. On the one hand, the rise of protectionism causes markets fragmentation that hinders globalization. On the other hand, a multiplication of digital products and services and an increase in e-commerce flows that support globalization. It is interesting to evaluate what is or what will be a more important factor impacting globalization: protective measures or new technologies. The initial guess is that historically protectionism has always appeared to be a temporary measure and it may be offset any time soon (maybe not as soon as we wish, in view of the serious geopolitical tensions we face today). In contrast, technological progress will definitely continue to play an ever bigger role in the evolution of trade.

Another set of conflicting trends will result from the current geopolitical situation. On the one hand, the value of trade will diminish on account of digitalization and

increased competition. On the other hand, current geopolitical tensions and conflicts will trigger a rise in prices for many products, including food or energy. Again, it is difficult to estimate the final overall impact on the value of global trade flows. Finally, the increase in the volume and value of the newly traded goods could have been reported at much higher levels had the statistics captured the new flows of trade at an adequately advanced technological inventory level.

3.2 Regulative Response to Trade Challenges

Regulative response of international economic organizations to the global trade challenges was large in scope, but not efficient in substance.

- Regulators could not catch up with the rapid pace of tech change. Customs offices apply traditional instruments to regulate trade the way it used to be decades ago. However, trade has changed and it needs to be accounted for and regulated by appropriate methods and instruments (Coyle 2018).
- Entering the digital phase, trade has become further globalized. The need for a joint global response to new challenges of e-trade, platform-enabled trade, blockchain-based trade is clearly visible. However, far from uniting efforts countries are becoming more divided.
- The reform of major global institutions is long-time needed. The activities of organizations (such as the UN, WTO, or the G20) are largely frozen by consensus rule. In view of growing divide, the consensus is not possible and the system becomes idle.
- The split among countries will eventually become greater on account of growing divisions. The inequality, the digital divide and security concerns within the increased multipolarity imply that the chance to reach common ground is weaker rather than stronger.
- Regulators are late to respond to geopolitical tensions that affect trade in a negative way.

3.3 New Regionalism, Compensating for the Gaps in Multilateral Trade Regulation

The hope to fill in the gaps in global trade regulation rests a lot both on the expansion of the regional trade agreements (RTAs) and on the quality of regulation within them. Reliance on RTA is growing worldwide. More than 350 RTAs are still effective and their number is rising. We guess today it is appropriate to use the term “global” in conjunction with “regionalism” as all the states conclude regional trade agreements and they go far beyond geographical regions (mega-regional trade agreements). Not only the mega-trade deals are an important feature of this trend, but multiple free trade

areas (FTAs) create an interconnected global RTA network and can be considered a basis for the new global regionalism.

Modern RTAs are very different from what they used to be only a decade ago. RTAs are becoming more extensive and comprehensive, embracing new topics. Apart from tariffs and quantitative restrictions they also cover non-tariff barriers, intellectual property rights, public procurement, investment regimes, ecology and environment protection, labor standards, and even human rights. The lack of compromise at a multilateral level looks less like a tragedy for the global trade regulation as the role of the RTAs is constantly growing and the quality of regulation within them is much higher than that at the multilateral level. For instance, if we look into the digital trade agenda, we find out that around a hundred regional trade agreements already address this issue. The provisions embrace a general regulation of e-commerce, rules for telecommunication services, intellectual property rights protection, e-government, and technical assistance. Cooperation on e-commerce was originated within RTAs and facilitated the introduction of a moratorium on customs duties on electronic transactions at the multilateral level. We can conclude that trade regulation which emerged and was pushed forward within RTAs can be considered as a compensation for the normative weakness at the multilateral level. However, it does not imply we expect no progress in trade regulation at the WTO level. The global regionalism is not sufficiently global to fully substitute multilateral arrangements.

3.4 Current E-Commerce Regulation Agenda

Trade regulation used to be not efficient enough in relation to conventional trade barriers (non-tariff barriers) before the start of the digital era. Today, the challenges are greater and the multilateral governance turns out even less efficient in dealing with transformed trade.

There comes a big uncertainty as to public policy rationale, especially in countries where governments are not accountable to people and businesses, whether tasks on cybersecurity, data protection, and safeguarding public morality will not be abused and used as a pretext to introduce excessive limitations on internet usage or excessive protectionism for domestic markets. Governments considering such restrictions may find themselves in what we call a “digital trap”. No government wants to be a laggard behind digitally advanced countries. With widening digital divide, to catch up in the future will be more difficult. To be a part of the digitally advanced economies a country has to be fully integrated into the world economy. The more barriers to free flow of goods and services, data and innovations exchange, unlimited circulation of ideas, and the lower is the chance to join the club of successful and prosperous nations.

As a result, governments are becoming increasingly aware of the need to facilitate and liberalize digital trade and trade as a whole. But the dominant protectionist mood and self-sufficiency concepts prevent opening up domestic markets. The outcome is

uncertain. Whether the politicians turn out to be wise enough to digest the realities of the day will predetermine to a large extent the future global governance order.

4 Global Financial Governance

4.1 The Need to Transform the Global Financial Governance System

The global financial crisis of 2008–2009 revealed serious flaws in the system of global financial regulation and served as an impetus to its reform. To a particular extent, it was caused by a huge imbalance between the rapid and uncontrolled development of the financial sector in the wake of liberalization, which preceded the crisis, and outdated methods of soft financial regulation, both at the national and global levels. It provoked the accumulation of systemic risks, both in the banking sector and at the state level, associated with a negative balance of payments, the emergence of “soap bubbles” in financial markets as a result of liquidity oversupply, and the long-term depreciation of the US dollar. The regulators’ activities were also complicated by the use of sophisticated schemes to apply derivatives, information concealment, and non-transparency of reporting (shadow banking). Most of the risks were global in nature, but the response was given at the national and regional levels.

4.2 Setting up the System of Institutions for Global Financial Governance

The modern system of global financial regulation can be represented in the form of an extensive hierarchy of international economic organizations (institutions) that closely interact with each other to ensure financial stability (Fig. 1).

After the global financial crisis, international institutions started to pay considerably more attention to financial stability. They actively introduced various anti-crisis instruments to safeguard financial and economic stability. This huge regulatory joint effort contributed to developing new principles and norms for the functioning of the global financial system. The IMF, one of the pillars of financial regulation, dramatically increased its financial assistance packages, launched various flexible instruments of support, and started monitoring financial stability.

In addition to the formal international organizations, we witnessed an emergence of informal institutions that have gained importance. A special spot among them is occupied by the G20, which initiated and coordinated the new set of international financial standards, producing the guidelines for efficient financial governance. It stands as another pillar of global financial governance. For example, the G20 initiative

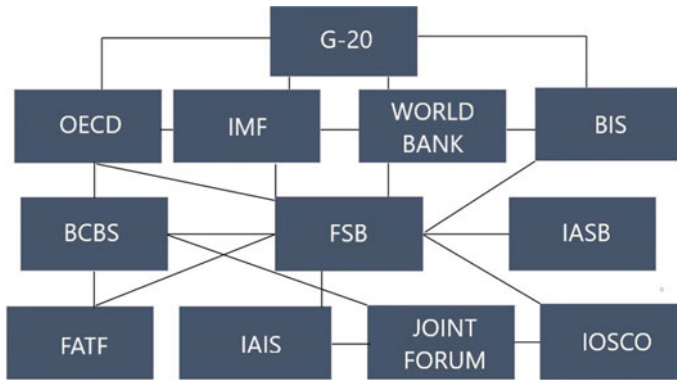


Fig. 1 Architecture of global financial regulation (Source Compiled by authors)

in 2009 laid the foundation for the Financial Stability Board. Acting alone or as a part of the “troika”—the FSB, IMF, and the Basel Committee on Banking Supervision (BCBS), it has become a unique platform for the interaction of governments and international financial institutions promoting global financial governance. The FSB has become an efficient informal structure to facilitate global financial supervision reforms.

The BCBS formed another pillar of the financial sector regulatory system. The committee put forward the bank capital requirements packages, known as the Basel Accords, which amended international standards on the capital banks need to hold to guard against financial risks. In addition, the Committee introduced and continuously improves accounting procedures, risk management concepts, and other requirements related to financial activity, thereby increasing the reliability of the banking system.

It is worth mentioning some other institutions. The International Organization of Securities Commissions (IOSCO) comprises national bodies responsible for the regulation of the securities markets. IOSCO plays the leading role in the introduction of regulatory norms for the sector. Most professional accounting organizations (approximately 150) cooperate under the auspices of IOSCO. The International Association of Insurance Supervisors (IAIS) unites national insurance regulators and supervisory authorities. The association includes about 200 national insurance supervisory authorities and market regulators from 140 countries, which represent around 97% of the world market in this area.¹ As insurance is an important part of the financial services market, by bringing order into the global insurance market IAIS sets a goal of promoting global financial stability. The Association became the main global institution developing and promoting general international principles of insurance supervision.

¹ IAIS Annual Report 2019–2020. http://www.iaisweb.org/2019-20_Annual_Report.pdf.

4.3 Interaction of Global Financial Regulatory Institutions

All these institutions interact on a regular basis and their main goal is to develop appropriate regulatory networks in close cooperation with one another. One can note the high level of policy coordination, harmonization, and interaction of these institutions. For instance, several institutions demonstrate very close cooperation when performing the functions of macroprudential supervision. FSB has joint programs with IMF and WB for early warning crisis situations based on assessments of systemic risks and identification of possible regulatory and supervisory measures to eliminate these risks. The FSB also actively cooperates with a number of informal institutions, including the International Accounting Standards Board (IASB), by monitoring and ensuring unification of national financial reporting standards.

The cooperation of FSB with the BCBS in elaborating measures to ensure banks' capital adequacy has resulted in the justification of a set of measures to G20 summits and promoted the idea of an agreement on high-quality bank capital creation. This collaboration contributed to the adoption of the new set of rules for banks known as Basel III. This close inter-institutional cooperation becomes formally institutionalized as in the case of the Joint Forum of International Financial Regulators, which was established under the auspices of the BCBS, and included the IOSCO and the IAIS, to address issues common to the banking, securities, and insurance sectors. Apart from that, the Forum aims to identify problem areas in regulation, which lack control due to legislative inconsistencies in the interconnected areas. IASB acts in line with the FSB while monitoring and coordinating national financial reporting standards.

Adding numerous informal institutions to traditional intergovernmental international economic organizations (IMF, WB, OECD) allowed to provide for the necessary efficiency and flexibility of the entire system of financial regulation and ensure significant progress in its development.

Having analyzed the scope and the substance of the regulatory activities of the formal international organizations together with the informal institutions as new actors, and studied the way they interact, we can conclude that the system of the global financial governance has emerged and fundamentally consolidated over the last decade.

4.4 Reforms

According to the "Action Plan" (adopted in 2009 by the G20), the IMF continued to play the role of a key institution in overcoming the implications of the global financial crisis, primarily by providing financial aid to states. With the support of the Group of 20, the IMF has substantially increased its reserves, launched many new flexible lending mechanisms, and put much more focus on monitoring.

However, the IMF itself needed to be reformed. The management model, along with the authority and financial structure of the Fund, was subject to revision. The redistribution of quotas in 2021 and the increase in the IMF's capital gave greater voting rights to developing countries. The IMF managed to expand the package of assistance to member countries to an unprecedented level of \$1 trillion.

The World Bank, initially focused primarily on providing financial assistance to developing countries, has gradually turned into a comprehensive development institution providing financial and technical assistance for economic restructuring and developing mechanisms to secure financial risks in developing countries. The IMF, together with the World Bank, began to monitor the state of national financial systems through the joint Financial Sector Assessment Program (IMF—WB Financial Sector Assessment Program [FSAP]).

The main financial tasks of the OECD were to liberalize cross-border capital flows in accordance with the Code of Capital Movement Liberalization and to prepare analytics and some financial statistics. The OECD remains an important platform for international negotiations on various financial regulation issues.

In the decade following the crisis, as a part of a new institutional framework for financial regulation, it underwent significant reforms. A special role in this system was assigned to the FSB, the creation of which was an important step towards securing and strengthening financial stability, since the main objective of the FSB's work, in cooperation with the IMF and the World Bank, was the development of an early warning mechanism for financial and economic crises (macroprudential supervision and countercyclical regulation). The FSB's activities can be characterized as the emergence of a new key institution to promote reforms in the global regulation of the financial sector.

The adoption of the Basel III bank capital adequacy package has significantly improved financial stability in the banking sector by tightening capital, liquidity, and leverage requirements (risk coverage). The introduction of stress tests in the banking sector was of particular importance as well.

The IASB, under the auspices of the FSB, develops special financial reporting standards for the operations of financial institutions in coordination with other institutions of the financial system. The regulation of hedge fund operations and derivative markets is in the pipeline. IOSCO together with BIS has developed the Principles for Financial Market Infrastructures and drawn up a number of other documents.

At the same time, international informal institutions actively participated in the establishment of new rules for financial markets. For example, the Committee on Payment and Market Infrastructures contributed to improving the efficiency of payment and clearing systems, and the Committee on the Global Financial System contributed to its strengthening by monitoring the most significant risks the systems face. Much has been done in the IAIS insurance markets. Particular attention was paid to the fight against money laundering through the OECD and the Financial Action Task Force (FATF).

Thus, informal institutions were not only at the forefront of the movement to reform the system but also engaged in many specific aspects of establishing rules, norms, and standards of financial regulation in its various components. And all these

efforts ensured the construction of a financial regulation system at a qualitatively new level, not only by filling the system with various institutions and thanks to active interaction with each other but also through in-depth and detailed study of the subject areas of this regulation from establishing bank capital adequacy standards to approving financial reporting standards. In general, we can see significant progress in reforming and strengthening the system of global financial regulation.

4.5 New Problems and Challenges to Financial Stability.

Despite the successes achieved, the risks of financial instability are still high. One of the main threats is the global debt problem (chapter “[Business Cultures in International Business](#)”). Debt is breaking records. According to the Institute of International Finance, the global debt bypassed a record \$303 trillion in 2021 (Wilkes 2022). Both internal and external debts are growing, and this is the case for the corporate and banking sectors, and the sovereign debt as well. Debt interdependence has reached such a critical level that a collapse (default) in some part of the system bears significant risks to the global financial mechanism as a whole.

The emergence of new financial institutions in rapidly developing economies, primarily through the efforts of China, on the one hand, injects significant liquidity in international markets, and, on the other, may carry additional risks to financial stability. Financial problems were also exacerbated by the pandemic crisis, the sanction standoff, the contraction of international trade, risks to food and energy security, and migration challenges.

Solving all these crisis situations involves enormous financial costs and, consequently, will incur an additional financial burden on business and state budgets. The debt problem will become even more acute, which will require the build-up of an additional financial safety net at the regional and especially global level, explained by the need for a “safe heaven” as a last resort to solve debt problems.

The problem of regulatory arbitration (shifting financial institutions to more liberal jurisdictions and moving to the “shadow” sector) remains largely unresolved. The regulation of “shadow banking” is at its infant stage. Moreover, the financial system is constantly being modified, which creates new challenges. Financial players are looking for ways to circumvent the regulatory framework and increase profits thereby causing new threats to financial stability.

These threats come to the attention of international financial institutions with great delay. This is the case for international trade (WTO and e-commerce) and international energy (traditional energy institutions and energy transition), as well as for the climate, cryptocurrencies, and the financial system. Unfortunately, anticipating events is not typical for most regulators. This is especially true in such new areas as cybersecurity, new financial technologies, ecosystems, the launch of cryptocurrencies, coins, and tokens, and processing and transfer of financial data.

Despite the significant strengthening of the system of global financial regulation institutions over the last decade, it cannot be stated that there are fewer threats

to financial stability and the financial world has become much more stable. The undoubted merit of the global financial regulation system lies in the fact that despite the devastating waves of recent crises and serious geopolitical threats, the world economy has not plunged into another financial crisis similar to that of 2007–2009. However, this fact should not give rise to excessive optimism.

5 Global Energy Governance

5.1 *Energy Geopolitics: Between Security and Sustainability*

Just recently the global energy landscape has faced another shock. Europe turned out to be in the center of a typhoon provoked by the Russian “special military operation” in Ukraine. The outbreaks of this tsunami spread around from the EU to the USA, from America to Asia and Africa. And it resulted not only in the energy sector turbulence but touched upon many related areas such as food security and transportation, causing massive inflation and shortages of various products.

The EU, the largest energy importer in the developed world, had to radically rethink its energy security strategies. It covers every aspect of energy use, from a change in the energy mix to a shift in the choice of suppliers and strive for the energy efficiency. This rethinking is inward and outward-looking which means that the global energy order will look different in the years to come and the system of energy governance will never remain the same. The new global system of energy governance is being developed under the great influence of such fundamentals as technological change, a multiplication of new sources of energy, a rise in new products from new destinations, coupled with the development of the vast modern infrastructure and an increased efficiency in energy use. Each and every component of the system is undergoing a radical change that brings about the contours of a new energy global order.

One core element of the current transformation is the transition from fossil fuels to renewables, especially in those parts of the world that do not possess sufficient natural reserves of these fuels. Western countries used to be heavily dependent on oil imports from the Middle East, and gas and oil imports from Russia. However, nowadays we see a new phenomenon that can be called a “reversed dependence” or asymmetrical interdependence. This time, developing countries producing fossil fuels are becoming increasingly income-dependent on consumers from the major developed and emerging economies. The higher the share of renewables is in the future energy mix, the lower amount of fossil fuels will be needed. If that happens (and there is a high chance it will, in view of the EU accentuated conflict-induced transition policies), this may mean a serious blow to the developing countries’ energy-generated incomes, affecting many economies and re-shaping geopolitical landscape.

So far, OPEC does not look much worried. It forecasts a rise in global energy demand by 28% to 2045. Oil is forecasted to retain its position with the largest share

in the global energy mix until 2045.² According to the statements by the OPEC officials, after the conflict in Ukraine, the fundamentals of the oil energy markets will not be shaken.³ Other experts do not agree with that. However, for energy-exporting developing countries, the need for restructuring is growing both because of the geopolitical risks, coupled with an emerging stronger regulatory framework on climate change and because of the intensified energy transition.

Energy security, perceived as an important element of military and political security, has been one of the top priorities of each government. Today, it has become the number one priority. Rapidly growing share of renewables provides room for a different geopolitical thinking, focusing more on economic and sustainable aspects of energy, rather than primarily on military and political aspects of energy security. The shift can also be traced by using the Energy Trilemma Index of the World Energy Council which is aimed to help countries to formulate better policies through balancing energy security, equity and environmental sustainability. In other words, the more energy self-sufficient the countries become (most of the renewables can be produced practically everywhere), the better the chance is both for security and sustainable development.

It is not only the rise in renewables that is the key to understanding the new energy system. It is not a mere transition from one energy source to another. In each sector energy production and consumption are becoming different: more efficient, reliable, safe, affordable, eco and climate-friendly. The technology-driven transformation of the energy sector has revolutionized the way developed economies consume and produce energy. By combining renewable energy, digital technologies and advanced materials, supported by appropriate infrastructure, the world can modernize the energy ecosystems and reduce the flow and the waste of primary resources. Overall, energy use is becoming or at least should become sustainable.

5.2 *Global Energy Governance*

The market and technologies create preconditions for the introduction of new principles into energy governance. Geopolitical threats create new challenges. In order to keep economic development in line with the sustainable scenario, and meeting the new security challenges at the same time, it is imperative to have an appropriate system of governance at hand.

A sustainable development goal on energy, formulated as access to affordable, reliable, sustainable, and modern energy for all was adopted at the UN by 193 governments (chapter “[World Economy Major Trends: New Normal, The Forth Industrial Revolution, Globalization, Sustainable Development](#)”). The principles of sustainability and climate protection were set in the UN Framework Convention on Climate

² Investing in a Secure Energy Future. OPEC Bulletin 03.22. www.opec.org/opec_web/en/press_room/6840.htm.

³ 27th OPEC and non-OPEC Ministerial Meeting, 31.03.22. https://www.opec.org/opec_web/en/press_room/28.htm.

Change and further maintained by mechanisms in the Kyoto protocol and the Paris agreement on climate. The UN has a broad coverage of countries. However, there are some shortcomings: consensus is hard to reach, decisions are difficult to implement and big deals are rarely finalized. That is the reason other institutions undertake a leading role in fulfilling the mission of global energy governance.

The G20 stands next to the UN by the scope and coverage of the sector, as its members represent about 85% of the global GDP. The G20 as an informal institution is much faster to react on the burning issues in energy governance, and energy was in the focus of recent G20 summits. Energy security and efficiency, and environmental concerns came to be fully integrated into the G20 sustainable energy development concept.

With an extended mandate to fix oil production quotas OPEC enjoys a special role in global energy governance. Although officially the goals are set to keep prices stable and reasonable, in reality, they are aimed more to protect the interests of producers. The 2022 surge in prices is another proof of that. A decade ago, the deficit of impact on the global production level and ultimately the prices was offset by the OPEC+ format. The military conflict in Ukraine constitutes a new big test for OPEC unity. The EU is interested to shift oil supplies away from Russia to other OPEC and non-OPEC countries that have always been eager to expand their global market share. As the discipline within OPEC has been weak, the chance for consolidated actions is low. On the other hand, OPEC wants to bring more countries to decide upon the global oil agenda. Inviting China into this format is another visible change reflected in several high-level meetings of the OPEC-China Energy Dialogue.

The fast spread of liquified natural gas (LNG) facilities has led to fast globalization of the gas markets. According to the International Energy Agency (IEA), within the next 30 years, LNG's share in total gas demand is projected to rise from 20% in 2018 to 40% in 2040. Global governance response to these fast changes is slow and appears to be inadequate so far. It is not right to claim that the Gas Exporting Countries Forum (GECF) is becoming a type of new OPEC for the gas markets. Though under the Declaration, adopted at the first GECF Summit in November 2011, member-states agreed upon the need for fair pricing. However, no mechanism to safeguard pricing was stipulated. The idea of gas prices indexation to oil prices, or support of the long-term gas contracts, put forward at the 2nd Summit in 2013, came into conflict with fast development of the global gas market that is experiencing a spot sales boom. There was simply no need to arrange the gas production in a way similar to oil production.

Another important element of global energy governance is the US energy policy. The USA, not being a part of the OPEC or OPEC+ deal, is undergoing a spectacular transformation from a net importer to a net exporter of oil and gas following the shale revolution. The USA alone comes capable to make up for the reduction in the oil production quotas of all OPEC and non-OPEC countries altogether, which diminishes the regulative power of OPEC actions on oil production. The same relates to the gas markets. The USA came first to agree to supply the EU with an extra 15

bln. m3 of LNG in 2022. Washington and Brussels announced a task force to reduce Europe's reliance on Russian fossil fuels.

The renewables surge can be largely attributed to the regulators' deliberate policies to push forward the sustainable energy agenda. The International Renewable Energy Agency (IRENA) is a global organization that supports countries' transition to sustainable energy facilitating technology transfer. IRENA promotes the widespread use of all forms of renewable energy in pursuit of sustainable development and energy security. The adoption of the Agenda 2030 (chapter "[World Economy Major Trends: New Normal, The Forth Industrial Revolution, Globalization, Sustainable Development](#)") together with the Paris Agreement on Climate Change in 2015 provided a powerful impetus to the energy transition. Since then, IRENA membership has doubled to 154 countries demonstrating bigger importance of the Agency for global energy governance. The International Energy Agency (IEA) also aims to reduce dependence on oil and develop alternative energy sources.

5.3 Setting Up a Global System of Sustainable Energy Governance

The United Nations has its special place in the center of the system, setting up concepts, goals, and institutions, providing a legal basis for energy governance by concluding conventions and agreements and serving as a framework for cooperation of all major international energy organizations.

The G20, G7, OECD, and IEA ensure the global coordination for sustainable energy. They put joint efforts working on concepts and ways to facilitate the transformation. The IEA has actively contributed to all energy-related activities of the G20, including those on energy security, energy data, market transparency, renewable energy, energy access, energy efficiency, and phasing-out fossil fuel subsidies. The G20's work on financing energy efficiency in 2019 in Tokyo was evidence of intense cooperation between the general competence organizations and specialized energy institutions. This work was coordinated by the UN Environment Finance Initiative and the International Partnership for Energy Efficiency Cooperation as co-hosts of the G20 Energy Efficiency Finance Task Group to find a common way forward in energy governance. The World Energy Council is another venue where national committees from 100 countries and about 3,000 energy-related organizations work together to promote the sustainable use of energy. The World Energy Congress, which is held every three years, is a focal point for international discussion of trends in the rapidly changing energy sector.

The IEA is another case of intense cooperation with a broad range of international organizations. Its headquarters in Paris hosts several multilateral organizations, including the Clean Energy Ministerial Secretariat and the Energy Efficiency Hub.

Each year, the IEA, the International Energy Forum (IEF), and OPEC work together within a joint Symposium on Energy Outlooks. The symposium brings together senior analysts and delegates from energy-producing and energy-consuming countries, representatives of oil companies, banks, and experts in the field to discuss the IEA World Energy Outlook and OPEC's World Oil Outlook. A major dialogue between the IEA and OPEC is critical to ensuring global energy security. Some other important agreements, like the European Green Deal, were supposed to set up a sound legal basis for cooperation between the energy-producing and energy-consuming countries.

It is necessary to stress again that technology transfer lies at the heart of the global energy sector transformation. The Kyoto Protocol and Paris agreement, the abovementioned international organizations, and all of the existing energy-related conventions and organizations do support in an open and clearly defined way the transfer of advanced energy technologies as an important avenue to arrive at a sustainable economy. However, balancing between security and sustainability challenges is becoming a new priority for the system. That is a current distinctive feature of the emerging system of global energy governance.

6 Statistics and Analytics on International Business

As for international business, economists are primarily interested in information and research conducted by international, regional, and industry organizations and major economies as well.

7 UN Publications and Databases

International Trade Statistics Yearbook is an information and analytical publication consisting of two parts. It contains statistical data and analysis of the commodity and geographical structure of exports and imports by the world and countries. Since international trade in services has problems with the classification of services, of particular interest is Part III on service trade profiles.

The UN Comtrade database is updated in real-time, it visualizes the commodity structure of exports and imports by region and country, prices and dynamics of fuel imports, exports of finished products, export and import indices, export deliveries "origin–destination of goods" (annual, quarterly and monthly frequency), etc. in tables and graphs. The Monthly Bulletin of Statistics Online MBS and UN SDG indicators are of particular interest.

UN analytical reviews such as Sustainable Development Goals Report, Energy Statistics Yearbook, Electricity Profiles, Energy Balances, etc. contribute a lot to the study of international business.

7.1 International Economic Organizations

One of the functions of the World Trade Organization (WTO) is to collect extensive statistical data on international trade in goods and services and analyze it. The data on exports and imports of goods and services of the UN Statistics Division UNStat may differ from that of the WTO since the latter has a more extensive source of information. If there are discrepancies, it is better to focus on the statistics of UNStat. The key statistical publications of the WTO are the yearbook *World Trade Statistical Review*, *World Trade Profiles*, *World Tariff Profiles* with their data on volume, structure, and tariffs, *World Trade Report* analyzing world trade, and *Global Value Chain Development Report* covering value chains.

The UN Conference on Trade and Development (UNCTAD) publishes statistics on the international trade in its *Handbook of Statistics*. Equally important are the publications of UNCTAD on international trade, including the *Trade and Development Report*, *Commodities and Development Report*, and the annual *World Investment Report* on direct investment.

Bank for International Settlements analyses financial stability and international monetary relations in its *Annual Economic Reports*, *BIS Bulletins*, quarterly reviews, and other studies.

7.2 Analytical Publications and Online OECD Database

OECD analytical publications are primarily represented by OECD *Regional Development Studies* and *OECD Investment Policy Reviews*, as well as regional (for example, *Latin American Economic Outlook*) and industry reviews (*World Energy Outlook*). Working and Policy Papers on international investment, tourism, finance, and other areas constitute an important source of data for research. The online database of the OECD (OECD.Stat) includes more than 20 sections and covers various aspects of the socio-economic, scientific, and technical development of the organization and its member-states.

7.3 The System of Publications of the European Union.

EU Statistical Commission—Eurostat (ec.europa.eu/eurostat) issues statistical and analytical publications, including the Eurostat regional yearbook, *Key figures on Europe*, *Sustainable development in the European Union*, *Globalization patterns in EU trade and investment*, *International trade in goods*. The statistical database of the organization (<https://ec.europa.eu/eurostat/web/main/data/database>) also contains many of these details. Research on current topics of international business is presented in statistical reports, books, and working papers.

7.4 Publications of International Industry Organizations and Agencies

The International Energy Agency (IEA) collects and analyzes data on resource reserves, energy balances, production, and international trade of all types of energy. The monthly Gas Trade Flows, periodicals Oil Data Service (MODS) Supply, Demand, Balances, and Stocks; Renewables datasets are of particular interest to international business. The forecast data is contained in Projections: Energy Policies of IEA Countries. The research aspect with forecast elements is covered by World Energy Outlook, Oil Market Report, System integration of renewables, and Global Energy Review. Statistics, annual reports, and reviews on conventional and renewable energy are also released by the International Renewable Energy Agency (IRENA),

The International Migration Organization (IMO) is an important source of statistics and analytics in the field of migration flows. Its regular informational and analytical publications are World Migration Report, Return and Reintegration Key Highlights, and International Migration Journal.

MNEs play a prominent role in publishing statistics and analytics on international business. Examples are British Petroleum with its annual BP Statistical Review of World Energy on reserves, production, and world trade in coal, oil, gas, renewable energy, and electricity, as well as Pricewaterhouse Coopers, which issues a Paying Taxes report on the tax burden and its structure for businesses around the world.

National analytical and statistical agencies have their databases and release numerous publications on international business. For example, the US Bureau of Economic Analysis (BEA) has an extensive online economic information base on the system of macroeconomic indicators for economic sectors, exports and imports of goods and services, cross-border transactions, tourism, the balance of payments and international investment (in particular, the U.S. International Transactions, U.S. International Investment Position). Another example is the French Institut national de la statistique et des études économique (INSEE) with its extensive statistical database in English which generates many statistical and analytical publications on international business.

8 Conclusions

1. Global economic governance can be defined as a system of soft regulation by different actors within the global economy comprising above all international and regional economic organizations (both formal and informal), sovereign states, transnational corporations (TNCs), and different types of non-governmental organizations (NGOs). This framework provides for a set of norms and rules

for governments and international business and is in constant search for a solution to its key problems through the adoption of various agreements and their implementation.

2. The system of international economic organizations is profoundly influenced by the social, cultural, and especially political factors. As compared with the last decade, this system faces more challenges, primarily due to the fact that the world is becoming more divided.
3. While challenges to trade remain mostly global, the response to these challenges is mostly limited to national measures, which highlights the inadequate functioning of the global economic governance system and its inability to generate efficient solutions to outstanding global issues. The hope to fill in the gaps in global trade regulation rests a lot both on the expansion of the regional trade agreements and on the quality of regulation within them.
4. The modern system of global financial regulation can be represented in the form of an extensive hierarchy of international organizations that closely interact with each other to ensure financial stability. Having analyzed the scope and the substance of the regulatory activities of the formal international organizations together with the informal institutions as new actors, and studied the way they interact, we can conclude that the system of the global financial governance has emerged and fundamentally consolidated over the last decade. Even in view of the significant strengthening of the system of global financial regulation institutions over the last decade, it cannot be stated that there are fewer threats to financial stability, and the financial world has become much more stable.
5. It is not only the rise in renewables that is the key to understanding the new energy system. It is not a mere transition from one energy source to another. In each sector energy production and consumption are becoming different: more efficient, reliable, safe, affordable, eco and climate-friendly. The technology-driven and security-targeted transformation of the energy sector have revolutionized the way developed economies produce, gain access to and consume energy. By combining renewables, digital technologies, advanced know-how, modern equipment, and materials, based on strong infrastructure, the world can modernize the energy systems and reduce the waste of primary resources.
6. Data and publications of international organizations, industry organizations and agencies, multinational companies, and national statistical bureaus are the most important primary sources of reliable information reflecting the latest trends and challenges in the world economy and international business.
7. Global development and to formulate proper strategies and make informed policy decisions in international business.

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Global Capital Flows



Alexander Bulatov 

Abstract The chapter discusses the basics of international capital movements and their prerequisites, motives, and determinants. A separate paragraph is devoted to the theories of international capital movements. At the end of the chapter, the major indicators of the country's investment climate are analysed.

1 Introduction

By size, this form of international business is comparable to international trade: in 2007, world exports of goods and services were estimated at \$17.3 trillion and capital exports at \$11.6 trillion. But while international trade grew slowly over the next decade (exports of goods and services totalled \$22 trillion in 2020), capital exports declined, falling to about \$6 trillion in 2020. The changing nature of globalisation and the new normal affected primarily this form of international business.

2 Fundamentals of Global Capital Flows

International capital movements (global capital flows, capital outflow and inflow, capital export and import) include the investment and subsequent operations of capital invested abroad.

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2.1 Forms

The first, from historical point of view, form of international capital movements—lending capital—covers primarily loans and credits, as well as bank deposits abroad and in foreign currency at home. It also includes aid to foreign countries, both directly and through international organisations. Due to the variety of lending capital, statistics terms it as “other investment”. Note that this form of international capital movement in most cases results in the return of imported capital to its country of origin and external debt for the recipient country.

Portfolio investment is an investment in foreign securities and those that do not allow a foreign investor to participate in management control over the object of investment. This form is represented by bonds and other debt securities, as well as single shares (units) or their small portfolios.

Statistics distinguish financial derivatives as a separate form of international capital movements, which are derivatives of securities issued previously and contractual obligations. This form also covers options for employees of companies to receive bonuses in the form of shares of these companies. To avoid double-counting, financial derivatives are listed in international capital movements statistics with a sign opposite to portfolio investment.

By statistics, foreign direct investment (FDI) covers those that allow an investor to participate in managerial control over the object of investment (as a rule, this requires at least 10% of the share (unit) capital). FDI remains for a long time, if not forever, in the host country and does not generate external debt for this country. Major FDI owners—MNEs—create affiliates in foreign countries (chapter “[Multinational Enterprises](#)”) and build global value chains (chapter “[Global Value Chains](#)”).

Sometimes a country’s reserve assets are allocated to a separate form of international capital movements since in most countries of the world they consist mainly of foreign currency reserves. Part of it is invested in deposits in foreign currency, but the main part, as a rule, is invested in reliable foreign securities (mainly government bonds of the United States and other major developed countries). But in the analytical presentation of the balance of payments, this form is not included in the international movements of capital (chapter “[Balance of Payments](#)”). Quite often, but not in the statistics of international capital movements, foreign aid is also singled as a form of these movements. It is represented by preferential loans, gratuitous loans, assistance in the form of goods and services for free etc (chapter “[Foreign Aid](#)”).

In addition, it should be taken into account that capital is exported both in legal and illegal forms (this is the main reason why the exports of capital registered worldwide in statistics are usually less than its imports (Table 1). Capital can be illegally exported in violation of the legislation of the countries of origin of this capital. This happens mainly through fictitious transactions, through transfer prices (when the value of exported goods is underestimated and part of the proceeds from their sale is invested abroad), in the form of cash without any registration abroad. If we take the balance of payments, it is included in “Non-classified transactions” and “Net errors and omissions” (chapter “[Balance of Payments](#)”).

Table 1 The scale and structure of international capital flows in 2020, \$ billion^a

	Capital outflow (assets)	Capital inflow (liabilities)
Foreign direct investment	768.2	1050.9
Portfolio investment	2516.8	2206.0
Financial derivatives	-798.2	-462.2
Other investment	2543.2	3005.5

Source IMF. Balance of Payments and International Investment Position Statistics (BOP/IIP). Summary of International transactions data.imf.org/regular.aspx?key = 60,947,559

^a Without reserve assets

The illegal export of capital is often referred to as “capital flight”. But this is a narrow meaning of the term, and its broad notion covers both illegal and legal capital exports. The application of the latter in the capital-exporting country itself is difficult due to its investment climate.

There are few methods to estimate the size of capital flight on the macroeconomic level. Most of these methods use the balance of payments statistics and first of all a net residual method of the World Bank built on the broad notion of capital flight. By this method, the capital flight from a country equals the net between the inflow of other investment and FDI to a country (foreign debt increase + FDI inflow) minus the use of this capital (current account deficit + official reserves increase). This formula applies to countries with both deficit and surplus of current account as well as with increasing and decreasing foreign debt. For instance, by this formula, the accumulated volume of capital flight in 2015–2020 from Russia in \$ billion was the following:

(-130.1 foreign debt increase with minus due to decrease of foreign debt + 96.9 FDI inflow) - (-338.0 current account deficit with minus due to surplus + 151.1 official reserves increase) = 153.7.

During the same period, the accumulated volume of capital outflow from Russia was \$312.3 billion. When comparing these two figures one can conclude that capital flight from Russia in the period was 1/2 of the whole capital outflow. When comparing the accumulated volume of capital flight (\$153.7 billion) with the accumulated GDP of the country for the same period (\$ 9,042.6 billion), the ratio is equal to 1.7%.

2.2 *Scale, Geography, and Statistics*

The geographical structure of international capital movements is characterised by the dominance of developed economies both in the export and import of capital. But the situation is different within this group of countries. The United States, remaining the largest exporter of capital after Western Europe, has turned into a stable net importer of capital. Japan continues to be a major exporter and a small importer of capital. Western Europe retains its position as the main exporter and importer of capital in the world, but mainly due to mutual investment.

The share of less-developed economies in international capital flows is growing: in capital exports—from 5.5% in 2002 to 11% in 2007 and 27% in 2018, in imports—from 8% in 2002 to 15% in 2007 and 33% in 2018. The still low, though the rapidly growing share of less-developed economies, is primarily due to their level (stage) of economic development. Sufficient capital resources have not yet been accumulated here, and most importantly, at the stage of industrialisation, the need for capital in the domestic market is enormous. As for capital inflow, the insufficient level of development of these countries (usually correlated with the investment climate—see below) also hinders their capital imports.

The main source of statistics on the scale and structure of capital import and export are the balance of payments of the countries of the world, which are summarised by the IMF (Table 1).

2.3 *Major Participants and Channels*

All economic agents participate in the movements of capital between countries. FDI movements are dominated by multinational enterprises (including banks); portfolio investment is dominated by companies, banks, and institutional investors (through them households participate indirectly in the international capital movements); other investment is dominated by companies, banks, government agencies, and international organisations.

The movements of capital in the world are carried out directly, i.e., between the investor and the object of capital application with minimal participation of intermediaries (for example, loans, mergers and acquisitions, acquisition of foreign real estate) or indirectly, through the global financial market (chapter “[Global Financial Market](#)”).

3 Prerequisites, Motives, and Determinants

The main prerequisites for international capital movements include:

- uneven allocation (placement) of capital around the world and the resulting movements of capital from countries where it is abundant to those countries where it is scarce and therefore expensive;
- the discrepancy between savings and investment in many countries and the resulting excess or shortage of financial resources for investment, stimulating net exports or net imports of capital into or out of the country (i.e., global imbalances—chapter “[Balance of Payments](#)”);
- the differences between countries in the investment climate, i.e., conditions for the application of capital (see below), including different sizes of taxes as well as costs of labour, raw materials, fuels, semifinished products, and borrowed capital;
- the different efficiency of the use of capital by its owners (even in the same country in the same industry) and the desire of owners of other capital, including from foreign countries, to take the place of less efficient owners of capital;
- high mobility of capital as an economic resource, which is also growing due to the globalisation of the world economy.

On this basis, specific motives appear among potential participants in the export of capital. Capital is exported primarily to maximise profits, but not only for this. When investing capital abroad, its owner rarely wants to receive only profit. For example, in addition to profit, the lender also wants the secure loan placement, the portfolio investor also wants assets to be liquid, and the direct investor is guided by an even greater number of motives. For these reasons, FDI is often divided into access-oriented:

1. to resources (labour, knowledge, raw materials);
2. to sales markets;
3. to increase the economic efficiency of the investor company.

Global value chains often combine all these private equity motives (chapter “[Global Value Chains](#)”).

One of the most common motives among investors is to diversify their assets at the expense of foreign ones. Such diversification (for example, the placement of its assets both in yuan and in dollars and other currencies) is explained by an even more profound motive—the desire to minimise economic risks in general. Hence the acquisition abroad of even less profitable and not always less risky assets, which, however, can balance the risks available in the capital-exporting country. An example is the expansion of oil companies abroad to countries with less rich deposits than in their homeland and less stable political regimes.

Why do we see that more capital is exported and imported in some countries than in others? To answer this question, the circumstances (determinants, factors) of the international capital movement are investigated. They are divided into the pull and push factors pulling foreign capital and pushing out domestic capital. The

main determinants attracting foreign capital in the form of foreign direct investment, especially in less-developed economies with their high risks, include:

- the availability of often abundant economic resources;
- a large domestic market, which allows foreign MNEs with the help of wholesale (shops) and manufacturing (for example, car assembly) affiliates in such a country to carry out large domestic sales;
- a high rate of profit in a foreign country, usually due to its good economic growth rates.

Such circumstances mean a lot for foreign capital, often outweighing the disadvantages of the investment climate. Brazil (\$593 billion inward FDI stock in 2021) and Mexico (\$579 billion) surpass, for example, Japan (\$257 billion) with its larger GDP and better investment climate, if it is evaluated only by risks, without taking into account the profit received.

Among the factors pushing out direct investment from less-developed economies, we can distinguish the following:

1. the maturity of domestic companies in some industries;
2. the disadvantages of the local investment climate, pushing domestic companies to focus on the export of capital, rather than its application within the country.

4 Theories of International Capital Movements

Summarising the prerequisites, motives, and determinants of the international capital movements, economists try to theorise it. However, there is no unified theory of international capital movements, and schools of economics pay different attention to the forms of international capital movements and theorise them differently.

4.1 *Classic, Neoclassical, and Neo-Keynesian Economics*

One of the classics of economic theory, J.S. Mill, was the first to study the international capital movements. Although his famous, repeatedly reprinted textbook "Principles of Political Economy" (1848) featured only a paragraph devoted to the export of capital, the thoughts he expressed turned out to be fruitful. Mill investigated first of all two issues: the impact of the export of capital on foreign trade and the relationship of the international capital movements with the rates of return and investment.

If we take the first question, Mill relied on the Ricardian theory of comparative advantages to argue that by providing loans to foreign countries or establishing the production of export goods there with the help of the capital of its entrepreneurs, the exporting country contributes to the expansion of its foreign trade. Widespread lending to foreign buyers is reasonable if their solvency is limited, and the creation of

production facilities abroad to meet the needs of a capital-exporting country mitigates the high cost of raw materials and semifinished products in it and reduces the shortage of inexpensive finished products.

As for the second question, Mill pointed out that capital moves between countries because of the difference in the rate of return, which tends to decrease in the most capital-rich countries, as Ricardo proved. In this question, Mill anticipated part of the Heckscher-Ohlin concept of the international movements of economic resources, where the movements of capital were considered as a factor of production (see below). Moreover, Mill stressed that the difference in rates of return should be significant to cover the risk that foreign capital has in a foreign country. For example, he wrote that capital migrates to backward countries only with the prospect of obtaining superprofits.

At the same time, Mill expressed the idea that investing capital abroad counteracts a decrease in the rate of return in the capital-exporting country and prevents the growth of excessive capital (from the point of view of profitable placement of capital). The accumulation of capital (in the form of excess production capacity, excess stocks of goods and very low loan interest) is a threat to the economic cycle. This idea is partly applicable to the BRICS countries, where due to the high monopolisation of the economy and high risks, entrepreneurs in industries with relatively excess capital often prefer to invest their capital abroad rather than in other industries of their national economy.

The Heckscher-Ohlin concept, along with international trade, considers the international movements of factors of production, primarily capital. E. Heckscher formulated the idea that there is a trend towards international equilibrium of prices for production factors, which makes its way both indirectly, through international trade, and directly, through the international movements of production factors, whose value and quantitative ratio are different in different countries. B. Ohlin argued that the international movement of production factors is explained by the unequal demand for them in different countries: they move from where their marginal productivity is low to where it is high. For capital (more precisely, for lending capital), marginal productivity is determined by the interest rate (loan interest), the difference which regulates the movement of capital. But at the same time, Ohlin pointed out numerous additional points that affect the international capital movements: customs barriers (prevent the import of goods and thereby push foreign suppliers to export capital to penetrate their goods into the market); the desire of firms for guaranteed sources of raw materials; for geographical diversification of investment; political relations between the countries (as an incentive for the inflow of capital from France to pre-revolutionary Russia, Ohlin gave an example of their political union since the end of the nineteenth century); the export of capital to avoid high taxation and a sharp decrease in the security of investment at home.

One of the leading neoclassical schools, the monetarist school, advocates maximum liberalisation of the international capital movements. Based on the quantitative theory of money, monetarists believe that the outflow and inflow of capital into a country is caused by an excess or shortage of money, i.e., disequilibrium in

the money market of this country. Hence, their main recommendation to the government: it should not interfere radically not only in monetary circulation but also in the country's international settlements. After all, if there is more money in circulation in the country than is needed, then they try to get rid of it, including by investing abroad.

Neoclassical economics provides a theoretical basis for analysing the international movements of loan capital, allows one to explore some aspects of portfolio investment, and provides approaches to the study of capital flight. However, neoclassical economics is of little use for direct investment: one of its main prerequisites—the predominance of perfect competition in the world—does not allow the followers of neoclassical theory to analyse those branded (monopolistic, from the point of view of economics) advantages on which this investment is largely based.

Neo-Keynesian economics is interested in the relationship between the movements of capital and the balance of payments. Still L. Walras pointed out that the imbalance of foreign trade in the country should be compensated by the movement of capital—if the foreign trade balance is positive, then capital exports will be observed and vice versa (Walras rule). J.M. Keynes went further: he proceeded from the fact that the international capital movements themselves arise from the unequal balance of payments of different countries, primarily from the state of the current account balance. Unlike the neoclassicists, Keynes believed that under certain circumstances the export of capital can be beneficial to the firm, but not to the national economy as a whole, from which Keynes' followers derive the possibility of capital controls, i.e., state regulation of the country's participation in the international capital movements.

The situation in some countries with a systematically positive current account balance speaks in favour of Keynes' idea. The United States, with its systematically negative balance, has a constant preponderance of capital imports over its exports, and Japan, Germany, and Saudi Arabia, with their systematically positive current account balance, on the contrary, import less capital than they export. The above-mentioned IMF formula for calculating capital flight is based on this Keynesian idea. However, this idea does not always work. Some countries with a systematically positive current account balance also have a positive capital flow balance—this is primarily China with its strict capital controls.

4.2 MNE Theory

The theory of MNEs, which is represented by various models of foreign direct investment, turned out to be closer to the practice of international capital movements. Each of these models reflects certain important features of FDI.

The monopolistic advantages model was put forward by S. Hymer and later developed by C.P. Kindleberger. It is based on the idea that a foreign investor is in a less favourable situation compared to a local one: he does not know the country's market and the "rules of the game" well enough, he does not have extensive connections here, he incurs additional transport costs and suffers more from risks. Therefore, he

needs additional, so-called monopolistic advantages over local competitors, due to which he could get higher profit. A foreign investor can take monopolistic (specific, branded) advantages due to the use of original products available to him, advanced technology, easy access to cheap credit, his managerial experience, special benefits for foreign investment, etc.

Spatial development models of MNEs are based on the theory of the firm. For example, product life-cycle theory is used to explain the reasons for organising the production abroad: as demand for a new product grows abroad, the company begins not only to export this product there but also to establish its production there over time. This is done to overcome trade barriers, use lower local costs and outpace local competitors who imitate this product. As a result, the manufacturing of this product abroad may become the main one for the company. The flying geese paradigm, put forward before the Second World War by the Japanese economist K. Akamatsu, proposed three stages of the development of the country's manufacturing: the import of finished products, its import substitution and its export. Developing this model, K. Kojima and I. Ozawa added the direct investment factor to it (using the example of the Japanese textile, automotive, and electronics industries): firms place production abroad to facilitate access to foreign consumers of their products or reduce production costs. According to the MNE internationalisation model, put forward at Uppsala University, this internationalisation also goes through several stages, including the one of organising first sales and then foreign production affiliates. The model is most applicable to the MNE of the manufacturing industry.

The internalisation model of MNEs is based on the idea of R. Coase that within a large corporation between its divisions there is a special internal (embedded) market regulated by the heads of the corporation and its branches. The creators of the internalisation model—P. Buckley, M. Casson, and A. Ragman—argue that a significant part of formally international transactions are intra-company transactions between divisions of large economic complexes called MNEs, which place elements of their global chains in the most favourable places in the world to reduce their costs.

The eclectic paradigm (OLI model), put forward by J. Dunning, has become one of the most popular FDI models, because it has absorbed the time-tested elements of the above-described models. According to Dunning, the firm starts producing goods and services in a foreign country (i.e., carries out FDI) because it simultaneously has three prerequisites (OLI):

- the firm has advantages over other firms in the capital-receiving country (ownership-specific advantages);
- the firm manufacturing abroad has some costs lower than in the production of export goods at home, for example, due to the cheapness of local labour and raw materials, the large size of the local market, good local infrastructure, the presence of related industries (location-specific advantages);
- it is more profitable for a firm to create global value chains than just to export goods and services or sell its knowledge to local firms through licences (internalisation advantages).

The investment development path hypothesis, also proposed by Dunning, describes the stages of a country's participation in the international direct investment movements. At the first stage (typical for least-developed countries), the inflow of direct investment into the country is insignificant, except in the cases of countries with rich natural resources and a large domestic market. In the second stage (typical for most less-developed economies), the FDI inflow in the country increases and the country begins to export its own FDI, mainly to neighbouring less-developed economies. In the third stage, local producers begin to compete with foreign ones and, therefore, the inflow of FDI into the country even slows down, but the export of FDI is growing faster. In the final stages, the import and export volumes of FDI are roughly compared.

4.3 Theoretical Aspects of Portfolio Investment

According to the neoclassical portfolio theory, an investor's behaviour is determined by his desire to diversify his securities portfolio (also at the expense of foreign securities) to reduce risk while maintaining or even increasing the profitability of the entire portfolio (Chia-Ying 2017). Indeed, geographical diversification underlies the most international portfolio investment flows.

The neo-Keynesians also used Keynes' idea of liquidity preference in their studies of portfolio investment exports. For example, Kindleberger suggested that different capital markets are characterised by different liquidity preferences in different countries and, therefore, an active exchange of capital (especially portfolio investment) between countries of the same high level of economic development is possible.

5 Investment Climate and Its Ratings

The investment climate is the condition for applying investments. In a narrow sense, it is a climate for applying foreign capital and, in a broad sense, for both foreign and national capital. This paragraph uses the narrow meaning of the term.

The investment climate is determined primarily by economic conditions, but the political, social, and cultural conditions in which the investor works (the threat of warfare or strikes, cultural traditions, etc.) are also important.

The basis for assessing the investment climate is the risk/return ratio, mostly predictive, since today's investment is mainly aimed at making a return in the future. It is this future risk/return ratio that determines for the investor the prospects for investing capital in a particular company, region, or country, i.e., their investment attractiveness. However, in practice, when measuring the investment climate, they often pay attention only to risks, while omitting profitability and, as a result, a one-sided picture of the country's investment climate is created (see the example above with direct investment in Brazil, Mexico, and Japan).

The investment climate is assessed primarily from the point of view of two main groups of investors:

1. those carrying out other investments, i.e., lending;
2. those making direct and portfolio investments, i.e. entrepreneurial.

For these two groups of investors, there are different methods of assessing the investment climate. A quantitative assessment (in points or degrees) of the investment climate by one or another method is called a rating. For the first group of investors, these ratings are called credit ratings and for the second, they are called investment ratings.

Credit ratings are issued by companies specialising in this (rating agencies), of which there are about 200 in the world. Some of them work all over the world and are, therefore, called international rating agencies. These are primarily Standard&Poor's (S&P), Fitch, and Moody's.

Credit ratings are issued by rating agencies, usually for large companies and entire countries (ratings for countries are called sovereign ratings). Note that the rule is that the credit ratings of companies cannot be higher than the sovereign ratings of their countries. The methods of calculating credit ratings are different for different rating agencies, but this difference is not radical and is reflected by similar letter combinations from A to D or C.

According to S&P, at the beginning of 2022, of the G7 countries, only Germany and Canada had the highest credit rating (AAA), while the United States (AA+), Great Britain and France (AA), Japan (A+) and Italy (BBB) had a noticeably lower rating, mainly due to a large public debt. BRICS countries, China (A+), India and Russia (BBB-), Brazil and South Africa (BB-), as countries with less stable economies, had lower credit ratings.

It is important to note that credit ratings evaluate only risk, and not the correlation of risk and return. Credit ratings assess the risk of default of the state (if the rating is given to government bonds) or bankruptcy of the company (if the rating is given to the company's bonds). Therefore, they are not, strictly speaking, indicators of the investment climate because they characterise only one side of the investment climate. Moreover, they are not always predictive, as they often assess the current, rather than the future situation (as in the case of Russia, whose rating was lowered by S&P three times within a few weeks after the outbreak of warfares in Ukraine, and then S&P stopped calculating it; Fitch and Moody's did the same).

Investment ratings are usually calculated for world regions and countries (the company's rating is its stock price). Of the sovereign investment ratings, the most well-known is the rating of the Business Environment Risk Intelligence (BERI) agency. It is calculated by hundreds of experts three times a year for 50 countries at the moment, for the year ahead, for five, and, in some cases, for ten years ahead. Several tens of indicators calculated for each country are grouped into three composite sub-indices (sub-rating): operational risk (risk of business operations), political risk, and

risk of repatriation of income and capital by foreign investors, which together give the country's index (rating).

A similar methodology is used by the Political Risk Services Group (PRS Group) in its publications under the names Political Risk Services (PRS) and International Country Risk Guide (ICRG). Another rating agency, the Economist Intelligence Unit (EIU), which is part of the well-known The Economist Group, provides forecasts of investment ratings for 60 countries.

No less well-known is the rating for foreign direct investment of A.T. Kearney, which is called the FDI Confidence Index. According to the estimates of top managers of leading companies from developed countries published in early 2022, of the 25 leading countries in this index, the first five places were occupied by the United States, Germany, Canada, Japan, and the United Kingdom, and of the less-developed countries, only China, along with Hong Kong, were included in this list (10th place) along with UAE (14th), Brazil (22nd), and Qatar (24th).

We should also pay attention to the fact that different forms of investment are differently adapted to overcoming risks. Other investments turn out to be the riskiest due to the frequent difficulties with repayment of loans and interest on them. Portfolio investments are less risky because of their high liquidity, i.e., the ability to be sold quickly. But, strange as it may seem, FDI is the most adapted to risks: on the one hand, they are not carried out at all in countries with excessive risks, on the other hand, they can mitigate these risks on the spot by lobbying their interests there, like other local economic agents.

However, any investment rating cannot cover all aspects of the investment climate, especially those informal relations in the business environment that are caused by differences in culture due to the belonging of different countries to different civilisations. For example, a foreign entrepreneur, accustomed to the traditions and non-traditional rules of one environment, hardly perceives a foreign business environment, not so much because another civil law operates in it (it is not so different in the vast majority of countries), but because in a foreign country, especially belonging to another civilisation (culture), there are other unwritten traditions and rules than those to which he is accustomed in his country (chapter "[Business Cultures in International Business](#)"). To overcome such a cultural barrier, a foreign investor needs the surest means of overcoming risks—a consistently large profit in the short term and in the long term, as well as an active policy of encouraging the inflow of foreign capital in a capital-importing country, as, for example, is the case in rapidly growing China with its civilisation different from the West.

At least two conclusions can be drawn. First, we must not forget that the ratings deal with different categories of investors. Secondly, the ratings do not fully reflect all aspects of the investment climate they are considering. And the point here is not so much the shortcomings of a rating, but the fact that no scheme, no rating can accurately and adequately reflect the depth and complexity of economic life. Therefore, ratings are useful, but one should not implicitly trust them.

6 Conclusions

1. International capital movements (global capital flows, capital outflow and inflow, capital export and import) include the investment and subsequent operations of capital abroad.
2. In addition, capital is exported both in legal and illegal form, i.e., in violation of the legislation of the countries of origin of this capital. Illegal capital exports are often referred to as “capital flight”. But this is a narrow meaning of the term, and its broad definition covers both illegal and legal capital exports, the application of which in the capital-exporting country itself could increase its GDP.
3. The geographical structure of the international capital movements is characterised by the dominance of developed countries in it, both in the export and import of capital. But the situation is different within this group of countries. The United States, remaining the largest exporter of capital after Western Europe, has become a stable net importer of capital. Japan continues to be a major exporter and a small importer of capital. Western Europe retains its position as the main exporter and importer of capital in the world, but mainly due to mutual investments. The share of less-developed countries in international capital flows is growing.
4. The main prerequisites for the international capital movements are the unequal allocation (placement) of capital around the world and the resulting movement of capital from countries where it is abundant to those countries where it is scarce and therefore expensive; the discrepancy between savings and investment in many countries and the resulting excess or shortage of financial resources for investment, stimulating net exports or net imports of capital to or from the country, i.e., international imbalances; differences between countries in the investment climate; different efficiency of capital use by its owners (even in the same country in the same industry) and the desire of owners of other capital, including from foreign countries, to take place of less efficient owners of capital; the traditionally high mobility of capital as an economic resource.
5. On this basis, specific motives appear among potential participants in the export of capital. Capital is exported primarily to maximise profits, but not only for this. When investing capital abroad, its owner wants not only profit: the lender also wants his loans to be reliably placed, the portfolio investor also wants its assets to be liquid, and the direct investor is guided by even more motives. For these reasons, direct investment is often divided into those aimed at access to resources (labour, knowledge, raw materials), sales markets, and improving their economic efficiency. One of the most common motives among investors is the diversification of assets at the expense of foreign ones. Such diversification is explained by an even deeper motive—the desire to minimise economic risks in general. Hence the acquisition abroad of even less profitable and not always less risky assets, which, however, can balance the risks available in the capital-exporting country.

6. Why is there more outflow and inflow of capital in some countries and less in others? To answer this question, the determinants of international capital movements are investigated, dividing them into pulling foreign capital and pushing out domestic capital. The main determinants that attract foreign capital in the form of foreign direct investment, especially in less-developed countries with their high risks, are the availability of often abundant economic resources, a large domestic market, and a high rate of return in a foreign country, usually due to its good economic growth rates. Such circumstances mean a lot for foreign capital, often outweighing the disadvantages of the investment climate. Among the factors pushing direct investment out of less-developed countries, we should highlight the maturity of domestic companies in some industries, and the shortcomings of the local investment climate, pushing domestic companies to focus on the export of capital, rather than its application within the country.
7. Economists try to theoretically justify the prerequisites, motives, and determinants of the international capital movement. However, there is no unified theory of international capital movement, and different areas of economic theory pay different attention to individual forms of capital movement between countries and understand them differently.
8. The investment climate is the condition for applying investments. In a narrow sense, it is a climate for the application of foreign capital and, in a broad sense, for both foreign and national capital. The investment climate is determined primarily by economic conditions, but the political, social, cultural, and ethical conditions in which the investor operates (the threat of war, strikes, cultural traditions, corruption, etc.) are of great importance. The basis for assessing the investment climate is the risk/return ratio, the most predictive, since today's investments are mainly aimed at making a profit in the future. It is this future ratio of return and risk that determines the prospects for investing capital in a particular company, region, or country, i.e., their investment attractiveness. However, in practice, when measuring the investment climate, they often pay attention only to risks, while omitting profitability and, as a result, a one-sided picture of the country's investment climate is created.

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Multinational Enterprises



Alexey Kuznetsov 

Abstract The first part of the chapter analyses the overall picture of MNEs activities in the world. The second part deals with the types of MNEs, their strategy and structure.

1 Introduction

In the context of globalization, a significant part of goods and services in the world are produced by enterprises, which are controlled by foreign firms through foreign direct investment (FDI). The firms that have organized such enterprises with the help of FDI are usually called multinational enterprises (MNEs), multinational corporations (MNCs) or transnational corporations (TNCs). UNCTAD, the most authoritative international organization for the study of FDI and MNEs, gives the following definition of MNE and FDI:

“Multinational enterprises (MNEs) are incorporated or unincorporated enterprises comprising parent enterprises and their foreign affiliates. A parent enterprise is defined as an enterprise that controls assets of other entities in countries other than its home country, usually by owning a certain equity capital stake. An equity capital stake of 10 per cent or more of the ordinary shares or voting power for an incorporated enterprise, or its equivalent for an unincorporated enterprise, is normally considered as the threshold for the control of an asset. A foreign affiliate is an incorporated or unincorporated enterprise in which an investor, who is a resident in another economy, owns a stake that permits a lasting interest in the management of that enterprise (an equity stake of 10 per cent for an incorporated enterprise, or its equivalent for an unincorporated enterprise)... Foreign direct investment (FDI) is defined as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI

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enterprise or affiliate enterprise or foreign affiliate)”.¹ We should add that MNEs are also the founders of global value chains operating largely on the basis of FDI (chapter “Global Value Chains”).

2 Indicators of Transnationalization

According to UNCTAD, in 2020, the global FDI stock amounted to \$39–41 trillion, and the assets controlled by them, including the ones of local partners involved in foreign affiliates, were even larger (according to experts, over \$110 trillion). Despite negative influence of COVID-19 pandemic, the global FDI stock reached \$42–45 trillion as of the end of 2021. The sales of foreign affiliates of MNEs amounted to more than \$30 trillion, which was more than the world exports of goods and services, and the volume of value added produced by these affiliates reached about 9% of global GDP. About 80–90 million people are employed in foreign divisions of MNEs, which is not too much—2% of the economically active population of the globe, since FDI, even in labour-intensive industries, is usually represented by more high-performance enterprises compared to national competitors.

When considering the contribution of MNEs to the global economy, their special importance is usually emphasized in the transfer of knowledge through the training of local personnel and familiarization of local entrepreneurs with new technologies and management methods. For many countries, FDI is a valuable source of capital (especially with the development of infrastructure), which actually does not need to be returned, unlike borrowed assets.

Ultimately, MNEs are actively involved in the modernization of the global economy. At the same time, in a number of less developed countries, the activities of MNEs are perceived ambiguously, including their negative attitude to local corruption (although this does not prevent foreign investors from adapting to it), but especially their practice of transfer prices, in particular, the practice of underestimating the price of exported products to save on export duties.

Individual countries are involved in the export of FDI in different ways. It is dominated by developed countries (Table 1), especially Western European ones. In several small European countries, the scale of the national economy is comparable to the foreign production of goods and services controlled from their territory, although this control is often carried out not by their own, but by foreign MNEs operating on their territory.

Special attention should be paid to offshore and other “transshipment bases”, which are large exporters of FDI mainly due to “round-tripping” investment, i.e., those that return back to their countries from offshore, having received foreign jurisdiction and tax savings there.

¹ UNCTAD (2017). World Investment Report. Methodological Note: https://unctad.org/system/files/official-document/wir2017chMethodNote_en.pdf.

Table 1 Outward FDI flows and stock in the world

Country and group of countries	Indicator							The ratio of outward FDI stock to GDP of FDI exporting countries in 2020, %
	Outward FDI stock				FDI outflows in 2020			
	1990		2020					
	\$ billion	%	\$ billion	%				
Globally	2255	100.0	39,247	100.0	740	100.0	46.4	
EU-27 (including mutual FDI)	747	33.1	13,408	34.2	92	12.4	87.8	
Netherlands	110	4.9	3798	9.7	– 161	withdrawal	416.4	
Germany	309	13.7	1977	5.0	35	4.7	51.9	
France	120	5.3	1722	4.4	44	5.9	66.2	
Ireland	15	0.7	1207	3.1	– 49	withdrawal	288.3	
Luxembourg	41	1.8	887	2.3	127	17.2	1210.1	
Belgium			678	1.7	10	1.4	131.6	
Spain	16	0.7	625	1.6	21	2.8	48.8	
Italy	60	2.7	596	1.5	10	1.4	31.6	
Cyprus	0	0.0	492	1.3	– 6	withdrawal	2067.2	
Sweden	51	2.3	465	1.2	31	4.2	86.5	
Other developed countries^b	1367	60.6	16,728	42.6	255	34.5	...	
United States	732	32.5	8128	20.7	99	13.4	38.8	
United Kingdom	229	10.2	2055	5.2	– 33	withdrawal	75.9	
Japan	201	8.9	1982	5.1	116	15.7	39.1	
Canada	85	3.8	1964	5.0	49	6.6	119.5	
Switzerland	66	2.9	1629	4.2	17	2.3	217.8	
Australia	38	1.7	627	1.6	9	1.2	47.1	
Other countries	141	6.2	9 111	23.2	393	53.1	...	
China	4	0.2	2352	6.0	133	18.0	16.0	
Hong Kong (SAR of PRC)	12	0.5	1954	5.0	102	13.8	563.9	
Singapore	8	0.4	1221	3.1	32	4.3	359.1	
Republic of Korea	2	0.1	501	1.3	32	4.3	30.7	
Taiwan (province of PRC)	30	1.3	382	1.0	14	1.9	...	
Russia	1 ^a	0.0	380	1.0	6	0.8	25.6	
Brazil	41	1.8	277	0.7	– 26	withdrawal	19.2	

(continued)

Table 1 (continued)

Country and group of countries	Indicator							The ratio of outward FDI stock to GDP of FDI exporting countries in 2020, %
	Outward FDI stock				FDI outflows in 2020			
	1990		2020					
	\$ billion	%	\$ billion	%				
South Africa	15	0.7	250	0.6	– 2	withdrawal	82.8	
UAE	0	0.0	204	0.5	19%	2.6	48.5	
India	0	0.0	191	0.5	12	1.6	7.3	
Mexico	3	0.1	179	0.5	7	0.9	16.6	

Source UNCTAD (2021)

^aEstimate

^bTo ensure comparability of data for 1990 and 2020, the author used the old classification of UNCTAD countries. In 2022, the concept of a country with a transition economy is no longer applied. Along with Russia and a number of other post-socialist countries, the Republic of Korea is also classified as a developed country

FDI inflows (just like FDI outflows) are still dominated by developed economies, especially EU member states (Table 2). In fact, MNEs provided informal corporate integration here (along with formal integration at the state level) through cross-border MNEs' production links, cementing the structures created by politicians.

At the same time, less developed economies are gradually strengthening their positions as recipients of FDI. However, this process is not linear—for example, the activity of foreign direct investors has changed very differently in individual states due to the consequences of the COVID-19 pandemic, in particular, due to different dependence on commodity markets.

In developing countries, there is not only the inflow of capital and technology but also the improvement of international regulation and national legislation in the field of investment, and the introduction of minimum environmental and social standards. Unfortunately, “social dumping” is still used in the most backward countries when foreign MNEs turn a blind eye to their foreign branches' violating the working conditions accepted in their homeland. Having a wide choice of places to apply capital, MNEs invest in a rather narrow range of industries and cities of recipient countries, which creates additional problems for the industrial and regional policies of recipient states.

When assessing the foreign activity of MNEs, the Transnationality Index is often used. It is calculated as the average of three indicators—the share of foreign assets in the total assets of MNEs, the share of sales abroad in the total revenue of a company and the share of foreign personnel in the total number of employees of the MNEs. However, it should be borne in mind that the largest value of this index is observed in the MNEs of small countries, where successful firms very quickly outgrow the

Table 2 Inward FDI flows and stock in the world

Country	Inward FDI stock				FDI inflows, 2020		The ratio of inward FDI stock to GDP of FDI importing countries in 2020, %
	1990		2020		\$ billion	%	
	\$ billion	%	\$ billion	%			
Globally	2196 ^b	100.0	41,354	100.0	999	100.0	48.9
EU-27 (including mutual FDI)	682	31.1	11,563	28.0	103	10.3	75.8
Netherlands	72	3.3	2891	7.0	– 115	withdrawal	316.9
Ireland	38	1.7	1350	3.3	33	3.3	322.5
Germany	227	10.3	1059	2.6	36	3.6	27.8
France	104	4.7	968	2.3	18	1.8	37.2
Spain	66	3.0	853	2.1	9	0.9	66.6
Belgium	59	2.7	636	1.5	8	0.8	123.4
Luxembourg			627	1.5	62	6.2	855.4
Italy	60	2.7	486	1.2	– 0	withdrawal	25.8
Cyprus	0	0.0	481	1.2	– 4	withdrawal	2021.0
Sweden	13	0.6	409	1.0	26	2.6	76.0
Poland	0	0.0	249	0.6	10	1.0	41.9
Other developed countries	1006	45.8	17,117	41.4	209	20.9	...
United States	540	24.6	10,802	26.1	156	15.6	51.6
United Kingdom	204	9.3	2206	5.3	20	2.0	81.5
Switzerland	34	1.5	1536	3.7	– 47	withdrawal	205.3
Canada	113	5.1	1100	2.7	24	2.4	67.0
Australia	80	3.6	791	1.9	20	2.0	59.4
Japan	10	0.5	243	0.6	10	1.0	4.8
Other countries	508	23.1	12,674	30.6	687	68.7	...
China	21	1.0	1919	4.6	149	14.9	13.0
Hong Kong (SAR of PRC)	202	9.2	1885	4.6	119	11.9	543.9
Singapore	30	1.4	1855	4.5	91	9.1	545.6
British Virgin Islands	0	0.0	951	2.3	40	4.0	...
Brazil	37	1.7	608	1.5	25	2.5	42.1
Mexico	22	1.0	597	1.4	29	2.9	55.5
India	2	0.1	480	1.2	64	6.4	18.3
Russia	0	0.0	447	1.1	10	1.0	30.1

(continued)

Table 2 (continued)

Country	Inward FDI stock				FDI inflows, 2020		The ratio of inward FDI stock to GDP of FDI importing countries in 2020, %
	1990		2020		\$ billion	%	
	\$ billion	%	\$ billion	%			
Chile	16	0.7	272	0.7	8	0.8	107.6
Thailand	8	0.4	272	0.7	– 6	withdrawal	54.2
Republic of Korea	5	0.2	265	0.6	9	0.9	16.3
Saudi Arabia	15	0.7	242	0.6	5	0.5	34.6
Indonesia	9	0.4	240	0.6	19	1.9	22.7

Source UNCTAD (2021)

^aEvaluation

^bThe amounts of exported and imported FDI in the world as a whole differ slightly due to minor discrepancies in the methodology for calculating FDI in individual countries

^cTo ensure comparability of data for 1990 and 2020, the author used the old classification of UNCTAD countries. In 2022, the concept of a country with a transition economy is no longer applied. Along with Russia and a number of other post-socialist countries, the Republic of Korea is also classified as a developed country

boundaries of the domestic market. The indicators also differ by industry: if there are very limited opportunities for FDI in the defence industry or nuclear engineering, then there are many MNEs in the automotive industry or the oil and gas sector (Table 3).

3 Types and Strategies of MNEs

There are tens of thousands of different MNEs in the world for which one cannot develop a universal classification. However, some of their types can be distinguished.

3.1 Types of MNEs

MNEs are divided into global and regional. The latter limit their foreign expansion to one or two nearby regions, where they have more comfortable conditions for doing business due to territorial proximity, lack of language barriers, ethnocultural homogeneity, similarity of the institutional environment, etc. The most common are those regional MNEs whose FDI is limited to the territory of one regional integration grouping, for example, the EU. Regional MNEs also include large firms at the early stages of internationalization, for example, most Russian MNEs.

Table 3 Countries of origin of 10 nonfinancial MNEs in 2020

Country	Indicator			
	Number of MNEs	Total foreign assets, \$ billion	Average index of transnationalization, %	The largest national MNEs
United States	19	1634	47	Exxon Mobil
France	13	1098	63	Total
United Kingdom	12	1463	78	Royal Dutch Shell
Germany	12	1416	66	Deutsche Telekom
China	10	757	31	China National Petroleum Corporation
Japan	9	1 047	56	Toyota Motor
Switzerland	5	428	87	Nestle
Italy	3	318	60	Enel
Spain	2	211	73	Iberdrola
Republic of Korea	2	134	40	Samsung Electronics
Canada	2	110	72	Enbridge
Belgium	1	187	85	Anheuser-Busch InBev
Hong Kong (SAR of PRC)	1	150	92	CK Hutchison Holdings
Netherlands	1	120	87	Stellantis
Taiwan (province of PRC)	1	114	91	Hon Hai Precision Industries
Ireland	1	88	98	Medtronic
Other countries	6	363	60	

Source UNCTAD (2021)

Traditionally, MNEs internationalize their business in stages—having gained a foothold in domestic markets, they then begin foreign trade activities, which over time is complemented by the implementation of FDI, which they are also gradually expanding. But recently, especially in modern service industries, there have been more and more companies that become transnational almost “from birth” (born-global firms). This is due to the fact that the experience of foreign economic activity is acquired not by the company, but by the people representing it (owners, hired managers), and in the context of globalization, new companies are often founded by specialists who have already gained such experience in other MNEs.

The typology by nationality of MNEs is also widespread, but it often meets with difficulties. An example could be multinational companies that are formed by a complete merger of national companies (a classic example is the Dutch-British Unilever). In addition, some MNEs become the property of foreign portfolio investors

(for example, Finnish Nokia). The phenomenon of MNE migrants has also appeared (in particular, the ArcelorMittal steel company of Indian entrepreneur, L. Mittal, is now considered a Luxembourg company, and formally the Dutch automotive giant, Stellantis, emerged in 2021 as a result of a merger of Italian-American Fiat Chrysler Automobiles with the French company Groupe PSA). As a rule, the “nationality” of such TNCs is determined by the country where the main decisions are made, i.e., where the actual main headquarters is located.

3.2 *MNEs Strategy and Structure*

What are the main motives for direct investment into MNCs abroad? According to the eclectic paradigm (chapter “[Global Capital Flows](#)”), there are four main groups of motives:

- (1) expansion (capture, retention) of foreign sales markets, i.e., market-seeking FDI;
- (2) improving the efficiency of production of goods and services by creating foreign affiliates (through reducing costs and primarily labour and tax), i.e., efficiency-seeking FDI;
- (3) ensuring access to foreign resources (raw materials, qualified specialists, infrastructure), i.e., resource-seeking FDI;
- (4) adding the assets that are fundamentally new to the company (in particular, the companies with R&D departments that develop new technologies), i.e., strategic assets-seeking FDI.

Sometimes these motives are combined. There may be more specific motives for FDI. For example, entrepreneurs from less developed countries often use foreign assets to insure against losses in case of possible confiscation of their business at home. Another option is to increase the negotiating power of the company, since MNCs’ lobbying capabilities are usually greater than those possessed by national companies, due to the ability of the former to move their assets.

Investment expansion abroad is carried out in various forms. The two basic ones are purchases of already existing firms (merges and acquisitions) and greenfield. However, in the first case, investments in modernization and expansion are usually carried out. In this case of so-named brownfield FDI, for example, the construction of additional production facilities can be considered as a separate greenfield project.

Note that financial sources of FDI can be, not only transfers of funds across the border, but also reinvestment of locally earned profits and even cross-border loans from the parent company to foreign subsidiaries of MNEs. In this regard, reinvested profits and loans from parent enterprises are included in the volume of FDI by statistics.

The firms where a foreign investor owns 10–50% of shares (units) are called associates, and the ones where there is at least 50% control are called subsidiaries. They are independent legal entities, but MNEs can establish their branches abroad

(but do not have a legal entity) and foreign representative offices (have the right to a very limited range of operations). All such enterprises are collectively called foreign affiliates or the enterprises affiliated with MNEs.

The merger of two large MNEs often follows a significant restructuring of the business around the world, which is accompanied by the resale of individual subsidiaries to third companies, including at the request of antitrust authorities. Rather autonomous regional MNEs responsible for business within one macro-region can function within the framework of a large global MNE. MNEs are usually organized according to the geographical principle, producing relatively homogeneous products (providing similar services). Nevertheless, the geographical component in the organization is increasingly evident in the companies that manage production and sales according to the commodity principle. Sometimes it becomes quite difficult to isolate the geographical and commodity principles of the MNE organization—when it applies a decentralized, matrix organizational structure. Moreover, several autonomous business units can operate within it.

It is not always clear whether these firms belong to the final owner, because even several parent MNEs may have the same owners, who together with their foreign branches can act as a virtually single diversified conglomerate or as a group of really independent companies united only by family ties (for example, more than a dozen Indian MNEs of various industry affiliations are owned by members of the Tata clan). An additional complication in the analysis of MNE is the growing use of offshore firms, holdings and narrow-profile business enterprises (special purpose entities/vehicles, SPE/SPV) for control.

In addition to MNEs in the traditional sense, in recent years, more and more FDI is carried out by various private equity funds. On the one hand, they establish control over the acquired companies, acting as an MNE, and on the other hand, they make transactions for the reasons that are more typical of portfolio investors. For example, private equity funds usually buy assets for a period of three to five years, and even in the reorganization of enterprises, their restructuring ultimately pursues one goal—to resell the assets for profit.

They are close to sovereign funds created mainly by Asian countries and usually at the expense of part of the official reserve assets of certain countries in order to invest these assets abroad in profitable long-term investments, including the direct ones (official reserve assets themselves can only be low-risk portfolio investment—chapter “[Balance of Payments](#)”). Although so far sovereign funds account for less than 1% of the global FDI stock, since they more often carry out portfolio investments, interest in them is great, because the motives for their direct investment are markedly different even from those that are characteristic of almost a thousand large state-owned MNEs that have invested an order of magnitude of more funds abroad. In the case of sovereign funds, concerns are expressed about the close connection of their FDI with the foreign policy of the respective states.

The volume of FDI in the world is also increasing, which is carried out, not by legal entities, but by individuals, investing in foreign real estate. According to the

approaches of the OECD and the IMF, published in 2008, the purchase of a country house abroad, even for personal use, is classified as FDI.

4 Conclusions

1. A significant part of the goods and services in the world is produced by the enterprises controlled by foreign firms through foreign direct investment (FDI), i.e., the investment that gives control over these enterprises. The firms that have organized such enterprises with the help of FDI are usually called multinational enterprises (MNEs), and the ones controlled by them are called foreign affiliates (affiliate enterprises).
2. In 2020, the global FDI stock amounted to \$39–41 trillion, and the assets controlled by them, including the ones of local partners involved in foreign branches, were even larger (according to experts, over \$110 trillion). The sales volume of foreign subsidiaries of MNEs amounted to more than \$30 trillion, which was more than the world exports of goods and services, and the volume of value added produced by these branches reached about 9% of the global GDP. About 80–90 million people are employed in foreign divisions of TNCs.
3. Individual countries are involved in the export of FDI in different ways. It is dominated by developed countries, especially Western European ones. In several small European countries, the scale of the national economy is comparable to the foreign production of goods and services controlled from their territory, although this control is often carried out, not by their own, but by foreign MNEs operating on their territory.
4. FDI inflows (as in FDI outflows) are still dominated by developed countries, especially EU member states. In fact, MNEs provide informal corporate integration here (along with formal integration at the state level) through cross-border MNEs' production links, cementing the structures created by politicians. At the same time, less developed countries are gradually strengthening their positions as FDI recipients
5. MNEs are divided into global and regional. The latter limit their foreign expansion to one or two nearby regions, where they have more comfortable conditions for doing business due to territorial proximity, lack of language barriers, ethno-cultural homogeneity, similarity of the institutional environment, etc. The most common are those regional MNEs whose FDI is limited to the territory of one regional integration grouping.
6. The investment expansion of MNEs abroad is carried out in various forms. The two basic ones are purchases of the already existing firms (merges and acquisitions) and greenfield. Financial sources of FDI can be, not only transfers of funds across borders but also reinvestment of locally earned profits and even cross-border loans from the parent company to MNEs' foreign subsidiaries. In this regard, reinvested profits and loans from parent enterprises are included in the volume of FDI by statistics.

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Natalya Konina 

Abstract The global value chains (GVC) are a backbone and extremely important element of the contemporary global economy determining its dynamics to a great extent. GVCs are concentrated in the manufacturing and service sectors. Their operations impact the boundaries and structure of traditional firms and as a result, many multinational enterprises transformed themselves into factoryless firms. From the point of view of management, five GVC governance models can be distinguished. The development of GVCs will be framed by competition, technological revolution, and reshoring.

1 Introduction

The global value chain (GVC) is a global production and distribution network of various entities (firms) located in different countries and regions, coordinated, as a rule, by a large multinational enterprise (MNE), which carries out the entire set of activities for the development, production, marketing and after-sales service of goods. The value chain represents the flow of goods, services, investment, technology, information, and labor.

The phenomenon of global commodity and supply chains dates back to the 1970s. In the 1990s, those global chains have gradually transformed into global value chains and covered the field of manufacturing, and since the 2000s—the service sector. Modern GVCs are being reconfigured under the impact of many factors, particularly the inclusion in these chains of strategic alliances of MNEs and the active use of outsourcing and offshoring.

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2 Concept and Typology of Global Value Chains

The globalization of production, possibilities of fragmentation of business operations, and value creation permit companies to deploy fragmented production and supply system based on networks going beyond national borders. Significant reductions in transport and communication costs accelerate this process, as well as the elimination of political and economic barriers to trade, which have increased the potential for international fragmentation of production. As a result, GVCs have become an essential element of economic globalization. Nowadays GVCs cover about 60% of world trade in intermediate goods (in turn, this trade makes up almost half of the total world trade in goods). Over 1/2 of intermediate goods imported by the member-states of OECD and almost 3/4 of imports of large developing countries such as China and Brazil are traded within the framework of GVCs.

GVCs impacted the boundaries of traditional firms which are increasingly turning into global and regional networks. GVCs are more common in industries where the different stages of value creation are easier to distinguish, such as the electronics, automotive, aviation, and apparel industries. GVCs also exist in other industries, especially in services.

GVCs enable firms and countries to participate more in global trade and create more value. Firms-participants of GVCs benefit from differences in cost, skill, and technology between countries as well as from economies of scale (Gereffi 2019). Member firms of GVCs can upgrade their technological level by getting technologies and know-how from foreign MNEs. GVCs also facilitate the participation of micro, small, and medium-sized enterprises in globalization cooperating with online platform MNEs.

There are two approaches to measure the participation of a country in GVCs—as a trade-based proportion or a production-based proportion. China and the US as well as Germany, Korea (Republic of), and Taiwan (province of the PRC) are among the top GVC players (Table 1).

Typically, countries with a significant FDI presence (relative to the size of their economies) tend to be more active in GVCs and generate relatively sizeable

Table 1 The trade-based participation in GVC rate, %

	1995	2008	2019
World	39.8	51.9	44.25
USA	34.0	45.0	38.8
China	37.0	48.0	33.9
Germany	37.0	45.0	52.4
Korea, Rep. of	40.0	59.1	55.7
Taiwan (province of PRC)	...	50	...

Source Calculations based on TiVA database: <https://www.oecd.org/sti/ind/measuring-trade-in-value-added.htm#access>

domestic export value-added. On this basis, some developing countries have drastically increased their share in GVC trade in the previous decade, especially Costa Rica, Vietnam, Cambodia, and Laos (Global Value Chain Development Report 2021). For example, in China domestic value-added exports connected with participation in the GVCs increased six times, in India—five times and in Brazil—almost three times for the period 2000–2017.

GVC participation is evidently promoting economic growth of such countries, specializing in labor-intensive assembly activities along GVCs, as Bangladesh (textiles) and Viet Nam (electronics). China, India, Brazil, Mexico, Indonesia, Vietnam, and others are the most promising destinations for GVCs. Among other countries actively integrating into the existing and emerging GVCs also can be mentioned Turkey, Peru, Chile, Malaysia, Poland, the Philippines, Thailand, and Bangladesh.

3 The Role of MNEs in the Formation and Management of Global Value Chains

GVCs are usually formed and coordinated by multinational enterprises. Globalization had a profound impact on the transformation of MNEs into companies that manage global value chain operations aiming to maximize global profits. An increasing part of international trade in intermediate and final goods and services is carried out within the network of subsidiaries, affiliates, and dependent companies of the largest MNEs. GVCs, coordinated by MNEs, account for the biggest part of the total world trade. One cannot but mention that GVCs are typically measured in the statistics of international trade based on exports and, as a result, the local sales of affiliates of MNEs are calculated as a non-GVC activity, although this “missing” activity is considerable.

The length of GVCs is measured in several stages starting with the primary inputs and finishing with the final distribution. The length of an average GVC in 2000 was 7.9 stages, in 2010—8.5, and in 2019 there remained 8.5. All stages are managed directly or indirectly by those MNEs that are at the head of GVCs. For them, the principal approach to the formation and management of GVCs is the intercountry differences in labor, capital, and other costs, which are constantly changing. Another approach is based on a reasonable degree of intra-country and sectoral diversification. As a result, a lot of economic, technological, and political factors determine the architecture of GVCs. It means that a head MNE has to monitor constantly “the division of labour” inside its GVC and re-divide it among old and new firms-participants (so-called trade-in tasks).

Inside their global chains, MNEs themselves are usually concentrating on R&D, technology, investment, and business intelligence. As a rule, MNEs prefer to keep the management of those elements of GVCs within their organizational structure

(parent structure) because it provides them with strategic control over the product and investment decisions inside their GVCs.

Another MNEs strategy for managing global value chains is to maintain control of the upper stages of a value chain: the final assembly, distribution, and marketing of finished goods which tends to be highly profitable. As a result, value chains are an efficient way for MNEs to exploit their brands, patents, and other intellectual property.

Apple Inc., the US's flagship manufacturer with a market value of \$3 trillion at the beginning of 2022 is a hallow, factoryless manufacturer which governs its GVC via knowledge assets including patents, trademarks, copyrights, brand names, product designs, software, databases, as well as special business organization structures. In the fiscal year 2021, Apple's sales totaled \$232 billion in overseas markets, one of the highest figures among US companies. Apple had \$68.4 billion in sales in China only.

The knowledge flows, innovation dynamics, and use of intellectual property in GVCs are key elements of GVC efficiency and significantly increase MNEs incentive to realize R&D and innovate. Such intangible imports by foreign affiliates of MNEs double GVC trade volume (Value Chain Development Report 2021).

Apple iPhone X's cost is close to \$1000. The cost of all parts and assembly services totals \$409 to which Apple adds \$591 of intangible assets' cost: the iOS operating system, the brand, product design, and marketing and retail networks. To make an iPhone, Foxconn in China imports \$76.5 worth of parts and components from the US and \$228.8 from the rest of the world.

Besides GVCs created by manufacturing MNEs, international retailers such as Walmart, Costco, Target, Metro, Tesco, Auchan, and Lotte Shopping also often act as "leading firms" in many GVCs focused on consumer goods.

4 Global Value Chains: Industry and Governance Approach

In academic literature, a clear distinction is made between chains initiated by producers and buyers (e.g., Dallas et al. 2019; McWilliam et al. 2019).

The first type of GVCs is a manufacturer-initiated chain. Here, the technological competence of the leading firm (firms) determines the competitiveness of the chain. Manufacturers managing a global chain can be both from high-tech industries

(semiconductors, aerospace, radio- and telecommunications equipment, pharmaceuticals) and traditional manufacturing industries (automotive, mechanical engineering, chemicals).

The second type is a customer-initiated chain, where the leading firm is the final consumer, such as retailers or some consumer goods manufacturers (e.g., branded clothing, footwear, and food). In customer-initiated chains, retailers and brand owners manage production with a focus on marketing and sales.

At least five GVC governance models can be distinguished:

- *hierarchical chains* are based on operations of vertically integrated firms where the supply of intermediate goods and components is carried out within the framework of intra-firm trade of one MNE;
- *quasi-hierarchical chains* include low-capacity suppliers or intermediate customers who require significant support and ongoing attention within well-developed supply chain management from MNE managers;
- *value chains with relational and modular management* are characterized by long-term relationships between MNEs and their suppliers and customers within the chain, but by a low level of MNE dominance, because the leading suppliers in such a chain have their unique competencies (and infrastructure) and can work independently of the leading firm;
- *market chains* are the classic relations of market freedom and competition found in many product markets (Gereffi et al. 2005).

In many quasi-hierarchical chains (with significant management power of MNEs), for example, organized by industry leaders such as Apple or Nike, GVC member firms must confirm that they will not work with competitors as a condition of signing a contract. At the same time, many firms exporting goods (components) operate in several value chains simultaneously and serve both national and international markets.

A general trend in GVC governance model is a tendency to move away from quasi-hierarchical models to modular ones. This form of governance lowers supply chain management costs and allows MNEs to maintain reasonable levels of competition in their chains. (McWilliam et al. 2019). For example, some letdowns of Motorola and Nokia took place because their former suppliers HTC, ZTE, and Huawei started successfully competing in world markets by creating their value chain networks.

In the global smartphone market, there are four top global smartphone brands attractive to low- and middle-income consumers. They include Chinese corporations Huawei Technologies Co. Ltd., OPPO Co. Ltd., VIVO, and Xiaomi Corp. However, these Chinese producers imported core technological components from foreign MNEs because they had limited technological capabilities themselves in core components. To upgrade their position in GVCs, Chinese firms focused on research and development, marketing, and brand building. Thanks to the modularization of smartphone production and standard mobile platforms, they are taking

advantage of minimal costs of production and successfully started to compete with foreign rivals internally and abroad. Fast innovations helped these firms to win the competition in the domestic market and to expand globally. By the end of 2021 VIVO, OPPO, and Xiaomi had taken three of the top five positions in smartphone shipments.

Most of the theoretical concepts of GVCs are based on the assumption that firms operate in a single value chain with one client. In real life, everything is much more complicated. First, most modern firms are diversified and usually have many business lines and produce various goods and services, often belonging to different industries. Second, there are many GVCs, for example, in the textile, electronics, and automotive sectors, where the same suppliers work with many customers.

5 Current and Future Transformation of Global Value Chains

The development of GVCs in the coming decades would be framed by international competition and technological revolution. New technologies and a greater degree of customization should cause a significant fragmentation of the manufacturing. GVCs have become a reality thanks to a higher level of coordination and control made easy thanks to information and communication technologies, and further digital transformation of GVCs is connected with the digitalization of all the operations of MNEs.

The slowdown in globalization as well as changes in the global business environment have already led to a change in GVCs. A reduced number of participants, shorter length, and an increase in regional localization are characteristics of today's GVCs. The Fourth Industrial Revolution can reduce the need to move certain value chain activities overseas, thereby allowing leading global companies to bring some of their offshore activities back to their home countries (Connell et al. 2018).

The increasingly widespread use of robots, artificial intelligence, machine learning, big data, and the Internet of things is influencing GVC configurations. One of the technologies which may especially affect the configuration of the GVC, primarily in the aerospace and automotive industries, is an additive manufacturing (3D printing). There are two possible scenarios for GVCs in these industries—complimentary 3D printing and a substitution scenario where 3D printing partially or wholly replaces traditional production, which can lead to regionalization or localization GVCs.

Other prospects for many GVCs are associated with the gradual relocation of production from China (due to political issues and the growth of wages and other costs in China) to nearby countries in Southeast Asia, in particular Vietnam, Indonesia, the Philippines, and Thailand. At the same time forecasts predict the growing importance of GVCs organized by MNEs from such countries as China, Mexico, Brazil, Turkey,

Russia, South Africa, Singapore, India, and South Korea. They are increasing their sales not only in their regions but also globally.

Many future changes are related to COVID-19 aftermath. The distributed production system based on GVCs was not adapted to the shocks of the COVID-19 pandemic and played an essential role in transmitting shocks from the external environment to the domestic economy, whether incoming or outgoing. During the pandemic, the trade through GVC channels became the primary mechanism for the spread of economic recession from country to country. Most MNEs, organizers of GVCs, had a sufficient level of safety in terms of working capital, profits, stocks and other indicators to withstand the corona crisis but they happened to be vulnerable to such sudden stops. The most significant risks of GVCs turned out to be associated with the excessive dependence of GVC participants on export supplies from other countries and the use of just-in-time global supply systems by most MNEs, which made GVCs unsustainable and fragile during crises. (Teipen et al. 2022). These shocks have become a kind of catalyst for the transformation of the GVCs.

Pandemic-driven changes to GVCs reflect industry specifics. The leading MNEs in the semiconductor industry should not relocate their manufacturing sites due to significant country comparative advantages. At the same time, if we take the automotive industry, two-thirds of MNEs are going to move chain links to geographically closer regions. MNEs from less complex industries, such as the production of consumer goods, are also ready to minimize the length of GVCs and transform chains into regional ones. As a result, reshoring and focusing on proximity to sales markets become priority trends in the future configuration of GVCs.

6 Conclusions

1. GVCs play an important role in the global economy, being principal actors in the international trade. It is MNEs who organize the GVCs. The parent company forms the entire global or regional value chain, and coordinates, organizes, and controls relationships with related and subordinate firms and sub-suppliers.
2. Intangible assets play a critical role in GVCs. MNEs tend to move away from hierarchical and quasi-hierarchical models to modular types. This form of GVC governance minimizes costs and allows MNEs to maintain reasonable levels of competition in their chains.
3. Two main types of GVCs can be distinguished: producer-driven chains and buyer-driven chains. Five options for GVCs governance model can also be distinguished.
4. The transformation of GVCs can cause greater regionalization of value chains. With further digitalization, value chains will become shorter, less oriented towards the use of cheap labor, and services and information exchange will become more important than intermediate goods.

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Global Financial Market



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Abstract Analysing the structure, instruments, and participants in the global financial market, the chapter explores the main aspects of its segments, such as the money and capital markets, stocks, bonds, and derivatives.

1 Introduction

Due to financial globalization, the modern global financial market is a combination of national financial markets that are integrated to varying degrees, as well as markets for certain types of financial assets—for example, the foreign exchange market—which are international by nature. Over the past decades, the size of the global financial market, calculated as the total value of bank assets, as well as debt and equity securities issued, has increased many times, reaching \$424 trillion in 2020.

2 Structure, Instruments, and Participants in the Financial Market

The main function of the financial market is to redistribute financial resources between suppliers (investors) and consumers by creating and exchanging financial assets. All major economic agents can act as sources and recipients of financial resources, but their balance of supply and demand for financial resources is different. Households investing their savings in various financial assets (stocks, bonds, investment fund units, life insurance policies, etc.) act as net lenders, while governments and non-financial corporations in most countries are net borrowers.

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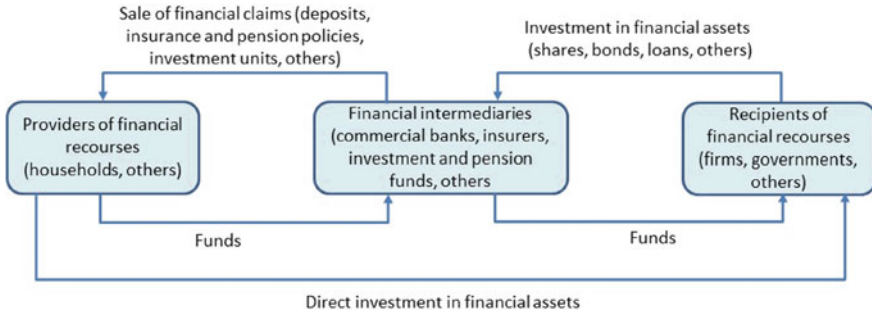


Fig. 1 Financial intermediation and direct investment in the global financial market

Economic agents such as financial institutions, including commercial and investment banks, pension and investment funds, insurance companies, and other institutional investors act as intermediaries in the market. They accumulate free financial resources for the population, corporations, and governments by issuing financial obligations—for example, bank deposits—and placing the collected resources in financial assets, thereby transforming savings into investments (Fig. 1). However, it should be noted that the role of financial intermediation institutions is gradually decreasing today, since digital technologies allow a wide range of financial market participants, including small investors, to directly invest in almost any financial instrument of interest while bypassing intermediaries (direct investing).

The redistribution of financial resources between states through the mechanisms of the global financial market is carried out in the form of international capital flow. It is mainly developed and large developing countries with higher investment attractiveness that benefit from this. At the same time, low-income countries are experiencing difficulties in obtaining foreign investment, which hinders their growth. This is essentially a market failure. To correct this, special international mechanisms will be required, which provide funds to the poorest countries, particularly, in the form of grants and concessional loans from international financial organizations (see chapter “[Foreign Aid](#)”).

Other main functions of the global financial market include:

- financial support for international trade, investment, and other forms of international business
- regulation of economic processes through financing
- the formation of market prices for financial assets
- providing financial market participants with information for making investment decisions
- redistribution of risk between financial market participants with the help of insurance products, derivatives, and other instruments.

The global financial market has a complex structure that can be presented in different ways, depending on the selected criteria. For example, the market can be

Table 1 Structure of the global financial market

	Market segments
Traded Financial Assets	<ul style="list-style-type: none"> • Loan and deposit market • Equity market • Bond market • Financial derivatives market • Foreign exchange market • Market for gold and other precious metals • Insurance market
Circulation Stage of Assets	<ul style="list-style-type: none"> • Primary market, where bonds, shares, and other financial instruments are issued and sold to investors • Secondary market, where already issued financial instruments are traded
Maturity of Claims	<ul style="list-style-type: none"> • Money market—market for short-term financial instruments with a maturity of up to one year • Capital market—market for medium and long-term financial assets with a maturity of more than one year
Organization of Trade	<ul style="list-style-type: none"> • Exchange-traded market • Over-the-counter market
Terms of Delivery of Assets	<ul style="list-style-type: none"> • Spot market, where the delivery time is usually no more than two working days from the date of the transaction • Futures market, where the asset is delivered with a delay of more than 2 working days

segmented by types of financial assets, the timing and stage of their circulation, and the method of organizing trade and delivery dates (Table 1).

At the present stage, the global financial market is undergoing a profound transformation under the influence of such fundamental factors as the globalization of the world economy, the liberalization of financial regulation and capital flows in many countries, and the progress of ICT. These factors have given rise to several long-term trends that are changing the face of the global financial market and its segments.

The most significant trends include a rapid increase in the size of the market; the growing integration and interdependence of national financial markets, which is gradually contributing to the formation of a single global financial space; the widespread introduction of innovative financial technologies and products; the growth of direct investment in financial assets due to many private investors using digital technology to enter the market; and the associated weakening role of financial intermediaries.

The consequences of these trends are contradictory. On the one hand, the removal of national, technical, and regulatory barriers for investors has contributed to a more efficient redistribution of financial resources at the global level, which has allowed the world financial market to fulfil its main function more successfully. An important consequence of this is an increased availability of financial resources for economic entities all over the world. On the other hand, the expansion and increasing complexity and globalization of the financial market have enlarged the scale of speculative operations and market instability, which was manifested during the global financial crisis of 2008–2009.

In this chapter, we will consider the money and capital markets, as well as the stock, bond, and derivatives markets.

3 Money Market

3.1 *The Concept, Structure, and Participants in the Money Market*

The money market is the part of the financial market where mainly short-term (up to one year) deposit, credit, and settlement operations are carried out. The discount market (in which notes, bills, and other negotiable instruments are discounted), inter-bank market, and foreign exchange (FOREX) markets are structurally combined in the money market, where operations are carried out to mobilize temporarily free financial resources of the population, the state, and firms, and transform them into loan (lending) capital, which is provided in the form of loans. The money market can be invested in directly by a direct investment of assets in short-term transactions with securities and currency, and indirectly, for example, through banks.

From an institutional point of view, the money market is a set of financial intermediaries that perform various financial transactions ensuring the flow of financial resources from owners to borrowers and back. Financial intermediaries are primarily banks, stock exchanges, and brokerage and dealer firms. The number of money market participants is constantly increasing due to stock exchanges, investment companies, pension and insurance funds, microfinance organizations, financial companies, credit unions, and building societies. This means that the main participants of the money market include:

- financial intermediaries
- primary investors—owners of temporarily free financial resources
- borrowers—companies, financial and credit institutions, the state, and the population.

An important participant in the national money market is the country's central bank, which serves as a lender of last resort. The money market primarily refinances commercial banks, which can receive short-term loans secured by securities from the central bank. Central bank loans are provided in the form of direct and secured loans, the recalculation of bills of exchange, and credit auctions. In practice, central bank loans are the cheapest source of short-term credit resources for commercial banks.

In turn, commercial banks provide short-term loans to borrowers, make speculative transactions, and regulate liquidity during the process of mutual provision of short-term loans on the interbank market. In addition, by buying borrower obligations, banks can securitize them.

3.2 Money Market Regulation

The emergence of new instruments on the market (hybrid structured financial instruments, including cryptocurrencies and digital state currencies), on the one hand, and new market participants, on the other, expands the scope and volume of operations in the money market. However, providing new financial services to clients, and increasing the speed and convenience of using them, increases the risks. Therefore, the money market is the most important subject of state regulation.

This is carried out primarily through interest rates, which include: the official interest rates of the central bank (including discount, effective, key rates, refinancing rates, etc.), treasury bill rates, as well as interbank market interest rates on loans and deposits, which are the basis on which financial intermediaries determine their interest rates (Fig. 2).

The interbank market is an important element for governments in controlling commercial banks due to the role it plays in the entire financial system. In the interbank market, credit organizations conduct short-term deposit and credit operations (usually from one day to six months). Commercial banks use the opportunities provided by the interbank market to conduct short-term operations, comply with the regulatory requirements of national central banks, maintain liquidity, and adjust their balance sheets. At the same time, they set interest rates for their operations based on the official interest rate of the central bank and the state of affairs in the interbank money market. For banks, interbank loans are the most expensive resources, so operations involving them are not very profitable.

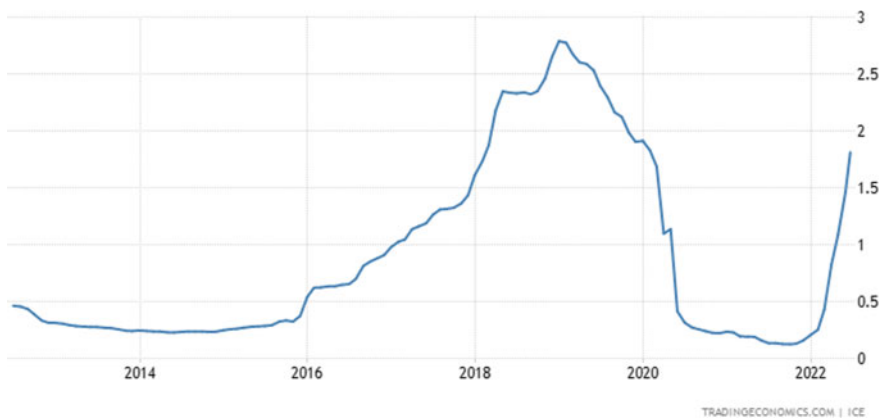


Fig. 2 US interbank interest rate in 2012–mid-2022 (Source <https://ru.tradingeconomics.com/untted-states/interbank-rate>)

3.3 Prospects for Development of the Money Market

In recent years, the money market has been actively developing due to:

- the emergence of new financial instruments, including cryptocurrencies, digital state currencies, derivatives, etc.
- the development of ICT that makes it possible to provide financial services to clients remotely in real-time, dramatically reducing the cost of using financial intermediaries
- the erasure of borders leading to an expanding pool of money market participants performing operations with the financial assets of banks and non-bank financial intermediaries
- strengthening competition and expanding areas of cooperation between financial and credit institutions and fintech companies
- the transformation of the classical business model for commercial banks and the emergence of so-called platform-type banks, hybrid banks, and non-banks, as well as the formation of digital financial ecosystems.

However, the above-mentioned trends in the development of the money market should not be viewed in an exclusively positive way. The impact of unbalanced liquidity risks at the macro- and microeconomic levels increases during periods of instability. High risks are typical for small and medium-sized banks, as well as other financial intermediaries that do not have the necessary ‘safety cushion’ in times of money market volatility.

4 Capital Market

4.1 The Concept, Structure, Instruments, and Participants in the Capital Market

Unlike the money market with its short-term financial instruments, the capital market is the part of the financial market where medium- and long-term financial assets with a maturity of more than one year are created and traded. The main instruments in the capital market include loans and borrowings from banks and other financial institutions, as well as stocks, bonds, and financial derivatives. The global capital market unites the internationalized and integrated national markets for these instruments to varying degrees, and also includes markets for Eurobonds, loans from international financial organizations, and some other types of financial assets that are international by nature.

Each segment of the global capital market is characterized by a variety of circulation instruments. In particular, the credit and loan market’s main instruments include, loans and credit lines from commercial banks, interbank loans and deposits, syndicated loans (provided to one borrower by a group of credit institutions), export

loans (often accompanied by official support from national export credit agencies), long-term loans (provided as financing for implementing investment projects), and structural credit products designed to finance complex investment transactions like mergers and acquisitions (M&A).

Unlike the money market, in which participants redistribute free cash to regulate liquidity and generate interest income, the basic function of the capital market is to mobilize savings and meet the needs of governments, non-financial corporations, and other economic agents for long-term resources needed to finance current and investment activities. The main role in performing this function is played by the primary capital market, where market instruments are created or placed for the first time, i.e., loans are issued, and shares and bonds are placed. This allows borrowers and issuers of securities to attract financial resources. Subsequent trading of these instruments is carried out on the secondary market. This applies primarily to securities, but loans and borrowings can also serve as an object for resale.

The capital market is characterized by a complex institutional structure that includes a wide range of participants performing various functions (Table 2).

The key element in the global capital market's institutional structure is transnational financial institutions (TFIs)—international groups directly operating in various countries, as well as through a network of foreign affiliates. There are many different TFIs in the world, from huge financial conglomerates with a global presence to relatively small organizations. Depending on their predominant area of activity, the following main types of TFIs can be distinguished:

- transnational banks (TNBs), in whose business structure traditional (credit, deposit, settlement) and investment banking services occupy the main place
- multinational insurance companies that primarily provide insurance and asset management services in the countries of their presence
- multinational investment companies and funds specializing in asset management and securities transactions (examples include the American corporations BlackRock, Vanguard Group, State Street Global, and Fidelity Investments).

The operations of the world's leading TNBs—the largest financial and banking groups formed as a result of numerous domestic and cross-border mergers and acquisitions—are of crucial importance for the functioning of the global capital market. In the early 2020s, the number of these TNBs can be roughly estimated at 35–40 groups. They are characterized by the huge size of their consolidated assets, approaching or exceeding the \$1 trillion mark (Table 3), as well as the high degree of universalization of their activities. In addition, nearly all have an extensive network of foreign affiliates, usually covering several dozen countries. Due to the scale of their business and wide geographic reach, TNBs and other major TFIs have the opportunity to change the state of affairs in many segments of the global capital market, particularly, the markets for syndicated loans, project financing, and Eurobonds.

The functioning of the global capital market is provided by a developed information infrastructure, which is formed by international and national rating agencies (including the 'Big Three': Standard & Poor's, Moody's and Fitch Ratings), audit, consulting and law firms, global financial information providers (Bloomberg,

Table 2 Participants in the global capital market

Participants	Main areas of activity
Commercial and Investment Banks	<ul style="list-style-type: none"> • Provision of various types of loans • Raising funds (through interbank loans and deposits, shares, and bond placement) to finance operations • Conducting trading, investment, and other transactions with securities • Provision of investment banking services to clients (organization of syndicated loans, underwriting of debt and equity securities, M&A and project finance transactions, etc.)
Corporations	<ul style="list-style-type: none"> • Raising funds (through bank loans, shares, and bond placement) to finance operations • Placement of temporarily available funds in capital market instruments
States	<ul style="list-style-type: none"> • Raising borrowed funds to finance budget deficits • Provision of international loans to other countries
Institutional Investors	<ul style="list-style-type: none"> • Investing in securities and other capital market instruments
Individual Investors	<ul style="list-style-type: none"> • Investing in securities
Multilateral Development Banks	<ul style="list-style-type: none"> • Providing loans and investments to developing countries • Issuing bonds to raise funds to finance activities
National Export Credit Agencies	<ul style="list-style-type: none"> • Provision of officially supported export credits, as well as guarantees and insurance on such loans issued by commercial banks
Stock Market Operators (brokers, investment and asset management companies)	<ul style="list-style-type: none"> • Conducting trading, investment, and other transactions with securities

Refinitiv), financial media (Reuters, The Financial Times, The Economist etc.), as well as numerous specialized information portals that analyse the state of affairs in individual market segments.

A significant role in the capital market is also played by national and international unions and associations of market participants, whose tasks include analysing best practices, as well as developing rules and standards for activities. For example, we should mention the International Capital Market Association (ICMA), which makes a significant contribution to developing general rules, standards, and regulations for the global debt securities market. ICMA consists of more than 600 market participants, including the largest investment and commercial banks, brokerage and dealer companies, and asset management firms.

Table 3 The World's 20 Largest Banks by Assets in 2022

Name	Headquarters	Total assets, \$ billion
ICBC	China	5537
China Construction Bank	China	4762
Agricultural Bank of China	China	4576
Bank of China	China	4207
JP Morgan Chase & Co	USA	3744
Mitsubishi UFJ Financial Group	Japan	3177
Bank of America	USA	3170
HSBC Holdings	UK	2954
BNP Paribas	France	2906
Credit Agricole Group	France	2674
Citigroup	USA	2291
Sumitomo Mitsui Financial Group	Japan	2177
Japan Post Bank	Japan	1999
Postal Savings Bank of China	China	1982
Mizuho Financial Group	Japan	1958
Wells Fargo & Co	USA	1948
Barclays	UK	1874
Bank of Communications	China	1836
Banco Santander	Spain	1815
Groupe BPCE	France	1724

Source S&P Global (2022). The world's 100 largest banks, <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/the-world-s-100-largest-banks-2022-69651785>

4.2 Capital Market Theories

Theories (concepts, models) regarding the capital market are generalized systematized ideas about how the capital market, as a whole or its aspects, functions. Dozens of various theories and models have been developed. Based on a given system of initial assumptions, their exponents try to describe the pricing mechanisms for various types of financial assets traded on the capital market, the characteristics of the market participants' behaviour, ways of forming portfolios, the possibility of forecasting market dynamics, and how to assess the risks of market bubbles and crises. In this chapter, we consider several concepts that have had a strong impact on the modern understanding of the nature of the market.

First, we should mention several concepts that appeared in the first half of the twentieth century, whose originators investigated pricing issues in a perfect capital market characterized, in particular, by full transparency, liquidity, the absence of transaction costs, and rational behaviour of participants. They proceeded from the assumption that the value of financial assets is determined by the ratio of their profitability and the

risks considered by investors when making decisions to purchase assets when these factors are linked by a linear relationship. For example, B. Graham and D. Dodd's classic paper, 'Security Analysis', the first edition of which was published in 1934, examined the dependence of securities prices on investors' expectations regarding their intrinsic value and the level of risk associated with their ownership. The authors' ideas formed the basis of value investing, a popular strategy which consists in buying shares whose intrinsic value, calculated using fundamental analysis methods, is lower than their market price.

In the 1950s, H. Markowitz developed the fundamentals of portfolio investment theory. The main pricing factor in the capital market was the expected utility of financial assets, defined as their risk to profitability ratio. As Markowitz showed, since prices for certain types of financial assets change in opposite directions (i.e., they have a negative correlation), one can minimize specific asset risks by diversifying the investment portfolio and including instruments with inverse correlations. The author proposed a mathematical model for the formation of an optimal portfolio based on a given ratio of profitability and risks (Fabozzi and Markowitz 2011).

The provisions of Markowitz's portfolio theory were used by W. Sharpe and some other economists who created the Capital Asset Pricing Model (CAPM), which is the best-known pricing model in the capital market today. This model is used to calculate the required rate of return on financial assets (primarily stocks) to decide whether to include them in an existing diversified portfolio, taking into account the market risk of these assets. When calculating this indicator, the model takes into account the expected profitability of a particular portfolio or the market as a whole, the rate of return on risk-free instruments (usually government bonds), as well as the asset's market risk, calculated using the statistical coefficient β as the degree of variability of the asset yield relative to fluctuations in the profitability of the entire market (Alexander et al. 2000).

In developing the classical approach to the capital market, the American economist E. Fama created the Efficient Market Hypothesis (EMH), in which he assumed that the prices of stocks, bonds, and other financial assets are set based on rational expectations of market participants, depending on the information available about the investment vehicles. In possession of reliable information, an investor can assess the future value of an asset, compare it with the current quote, and make a decision on the expediency of the purchase. This means that information is recognized as the main pricing factor in the market. The main idea of EHM is that, in an efficient market, the value of securities fully reflects all the available significant information about these securities. Since prices in such a market are set based on publicly available information and adjusted only when new data is received, investors cannot systematically generate returns on investments that exceed market averages.

At the same time, depending on how fully the market quotations of financial assets reflect the information concerning these assets, there are three forms of market efficiency:

1. a weak form of efficiency, when the current value of assets fully reflects only past publicly available information (for example, data on the dynamics of market quotations), which makes it difficult to predict these assets' future prices;
2. a medium (semi-strong) form of efficiency, when the value of assets fully reflects not only the past but also new publicly available information (for example, current company reports, analyst opinions, etc.). In this case, asset quotes change rapidly as additional information becomes available;
3. a strong form of efficiency, when asset prices fully reflect all relevant information, including insider information.

Despite being one of the foundations of the modern system of theoretical ideas concerning the capital market, EMH has been severely criticized as possessing logical contradictions (for example, the Grossman-Stiglitz paradox), as well as inconsistencies with respect to empirical data, since it first appeared in the 1960s. The shortcomings of EMH led to the emergence of alternative approaches to capital market research in the 1990s, which were developed within the framework of behavioural finance theory. In contrast to classical market theories based on the assumption that participants would behave rationally when making economically calculated investment decisions, representatives of the school of behavioural finance (M. Baker, N. Barberis, Jh. Nofsinger, D. Hirshleifer et al.) proceed from the fact that investors are ordinary people who are influenced by emotions and cognitive biases, such as self-confidence, bias, excessive trust in experience, and exposure to herd behaviour, which can lead them to make errors when studying and interpreting information that ultimately results in irrational decisions. This means that cognitive biases often encourage investors to purchase overvalued shares of well-known companies, rather than looking for undervalued stocks with high growth potential. The mistakes and irrational behaviour of investors, which are systematic, provoke price anomalies in the capital market and reduce its efficiency.

5 Securities Market

5.1 General Characteristics of the Global Stock Market

National markets for shares (equity) and bonds (debt securities), as well as the international Eurobond market, form the basis of the global securities market (global stock market). Its main functions are to transform savings into investments and redistribute capital at the global level by issuing and placing securities. This includes:

1. the issue of securities, including the preparation of a prospectus, if necessary, and government registration of the issue
2. initial placement of securities is usually carried out with the help of underwriters (banks, investment companies) that attract investors interested in acquiring these securities and facilitate the transfer of securities from the issuer (this is often

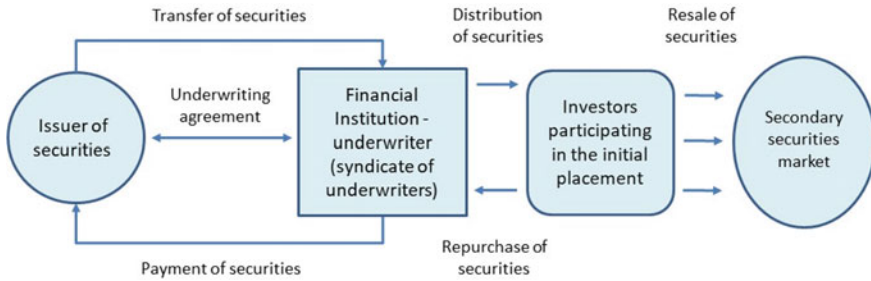


Fig. 3 Issue and placement of securities using underwriting

organized as a repurchase of securities from the issuer by underwriters and resale to investors)

3. organization of the circulation of issued securities on the secondary market by listing on the stock exchange or registering on the OTC trading platform (Fig. 3).

The modern global stock market is an extremely complex, dynamically developing system. It is distinguished by a significant variety of circulating equity and, particularly, debt instruments, advanced digital trading technologies, highly developed infrastructure, and a well-built system of regulation and control, including national legislation, as well as international rules and standards (Table 4). These features make the securities market an attractive platform for a wide range of participants who need to attract and place capital, including numerous retail investors.

The development of the stock market since its inception in Europe in the sixteenth–seventeenth centuries has been extremely uneven, with periods of recovery inevitably followed by recessions and crises. The state of a country’s national securities markets has always strongly depended on its macroeconomic situation, and, in the context of globalization, on the state of affairs globally. A deterioration of economic dynamics has often led to turmoil in the securities markets. In turn, the stock market itself has often acted as a generator of crisis phenomena in the economy. It is enough to recall the Great Depression of the 1930s, which began with a stock market crash in the United States. We can follow such examples up to the recent past. For example, the collapse of high-tech companies’ stock prices on the NASDAQ exchange (the ‘dotcom crisis’) in the 2000s led to a fall in the entire American stock market, which, in turn, became one of the reasons for the slowdown in the global economy in 2001–2002. The mortgage crisis that hit the US in 2007, which subsequently engulfed the financial markets and real sectors of other countries, had even more dramatic consequences. An important channel of crisis transmission was the depreciation of US bonds issued as part of securitizing low-quality mortgage loans, which is why investors around the world suffered huge losses.

In the 2010s, the global stock market, which recovered after the crisis of 2008–2009, grew dynamically, with its capacity almost doubling in a decade. By 2020, the capitalization of the global stock market amounted to \$106 trillion, while the total value of debt securities was \$138 trillion (Fig. 4). The rise in the market has largely

Table 4 Main sectors of the global securities market

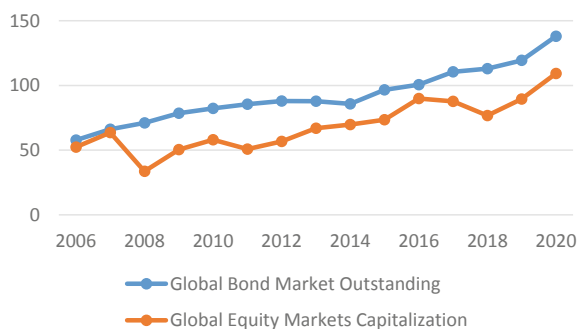
Feature	Equity market	Bond market
Main traded securities	<ul style="list-style-type: none"> • Ordinary and preferred shares • Depository receipts (DR) • Shares and units of investment funds • Exchange-traded funds (ETF) • Real estate investment trusts (REIT) 	<ul style="list-style-type: none"> • State, municipal, and agency bonds • Corporate bonds • Asset-backed securities (ABS) incl. mortgage-backed securities (MBS) • Sovereign and corporate Eurobonds • Foreign bonds
Main issuers	<ul style="list-style-type: none"> • Non-financial corporations • Financial institutions • Investment funds • ETF • REIT 	<ul style="list-style-type: none"> • State and municipal authorities • Non-financial corporations • Financial institutions • Multinational development banks
Operators	<ul style="list-style-type: none"> • Commercial and investment banks • Brokers • Dealers • Investment companies • asset management companies 	
Investors	<ul style="list-style-type: none"> • Central banks • Governments • Financial institutions (banks, pension and investment funds, insurance companies, hedge funds, etc.) • Non-financial corporations • Individual investors 	
Infrastructure	<ul style="list-style-type: none"> • Trading infrastructure (stock exchanges, OTC trading systems) • Accounting infrastructure (registrars, depositories, clearing houses) • Information infrastructure (financial media, rating agencies, etc.) 	
Regulation	<ul style="list-style-type: none"> • National legislation on the securities market • Standards, principles, and guidelines of international associations of market participants (e.g., International Capital Market Association) • Internal regulations of exchanges and other trade organizers 	

been facilitated by the soft monetary policies adopted by the financial authorities of developed countries, which has stimulated an influx of significant amounts of cheap liquidity into stock assets.

The global stock market's main driver of development at the present stage is the progress of digital technologies, which has dramatically widened market opportunities for all categories of participants, including small private investors. The massive influx of investors who want to make money working with securities transactions has become one of the main trends of recent years that have had a profound impact on the dynamics and quality of market growth.

Another major trend affecting the structure of the global securities market is the increasing openness and interdependence of national markets. The integration of

Fig. 4 Global securities market volume, \$ trillions (Source World Federation of Exchanges. Statistics Portal, <https://statistics.world-exchanges.org>; Bank for International Settlements. Debt Securities Statistics, https://www.bis.org/statistics/secstats.htm?m=6_33_615)



stock markets intensified in the 1980s and 1990s, as restrictions on the movement of capital were lifted first in developed and then in many developing countries. Today, these processes have been further accelerated due to an improvement in online trading systems, which allows investors to conduct operations in foreign markets, as well as the liberalization of the procedure for non-residents to enter domestic markets and the admission of foreign securities into them. As a result, a single global stock market with fairly transparent borders between the markets of individual countries is gradually being formed. The following trends are manifestations of this.

1. The expansion of investors' trading activity in foreign markets and the associated growth of cross-border portfolio investment flows. The average annual size of net outgoing portfolio investments in the second half of the 2010s increased to \$2 trillion worldwide, and the total value of portfolio assets accumulated by countries abroad reached \$76.3 trillion in 2020, which accounted for 90% of global GDP.¹
2. An increase in the volume of issuance and placement of debt and equity securities by governments, companies, and foreign issuers, mainly in the MFC. The annual value of securities issued on foreign markets in 2011–2020 increased 1.6 times to \$4.1 trillion.²
3. The internationalization of the exchange business, as well as the formation of large international exchanges as a result of cross-border mergers and acquisitions, which serve the stock markets of several countries. For example, the pan-European Euronext exchange has united the exchanges of some EU countries and become a common trading platform for issuers from these countries.

This increase in the degree of integration of the global stock market has had ambiguous consequences. On the one hand, this contributes to a more efficient redistribution of capital between states with the help of institutions and stock market

¹ IMF. Coordinated Portfolio Investment Survey, <https://data.imf.org/?sk=B981B4E3-4E58-467E-9B90-9DE0C3367363>.

² SIFMA (2021). Capital Markets Fact Book, <https://www.sifma.org/resources/research/fact-book>.

instruments. On the other hand, the increasing interdependence of national markets creates prerequisites for the rapid spread of crisis phenomena. This phenomenon, called the ‘financial contagion effect’, in fact, represents the negative side of financial globalization.

5.2 *World Equity Market*

This market is a collection of national markets. The following main types of financial instruments can be used there.

1. Ordinary and preferred shares of non-financial and financial resident corporations. The sum of the market values of domestic corporations’ shares traded on the country’s stock exchanges gives an estimate of the capitalization of its stock market.
2. Depository receipts, i.e., derivative securities issued by depository banks in the form of a certificate that certifies ownership of a certain number of shares in a foreign company. The need for receipts has arisen since the legislation of many countries prohibits the export of shares of domestic issuers, as well as the free admission of foreign companies to their securities market. The issue of receipts that formally have the status of domestic securities and, at the same time, represent to holders all the rights of shareholders, makes it possible to circumvent these prohibitions and opens up the possibility of selling the shares of foreign issuers on the local market, including on the stock exchange. Depending on the country of circulation, there are American Depository Receipts (ADR) issued under US law for sale on their market and Global Depository Receipts (GDR), which are in circulation in several states, as well as European, and other types of receipts.

It should be noted that the circulation of foreign shares is allowed in some countries, although, most often, with some restrictions.

3. Shares and units of investment funds, ETFs, and REITs, as well as other types of funds whose business is to raise funds by selling their shares (units) and investing them in securities, real estate, and other assets following a chosen strategy. The global industry of such funds, offering clients a wide variety of investment strategies, is on the rise today. For example, the total assets of funds investing in company shares in 2011–2020 increased 2.6 times worldwide to \$28.3 trillion.³

In the structure of the global stock market, there is a primary market on which shares (either newly issued or existing ones) that were not previously in free circulation are placed, and a secondary market where further securities trading takes place. Initial public offerings allow issuing corporations and their selling shareholders to raise capital in the course of Initial Public Offering (IPO) and Follow-on Public

³ Investment Company Institute (2021). Investment Company Fact Book, <https://www.ici.org/fact-book>.

Offering (FPO or FO) transactions. During an IPO, a corporation offers its shares to an unlimited number of investors for the first time by listing on an exchange and getting into its quotation list, thereby transforming from a private into a public company. FO transactions include subsequent public offerings of shares conducted by the company after the IPO. In the secondary market, shares are purchased by investors for long-term investment and income from the growth of the shares' exchange value and dividends, or as a speculative play on short-term fluctuations in stock prices.

The global IPO and FO market, like the entire stock market, is quite unstable. Since the main purpose of these transactions is to sell shares to investors at the highest possible prices, market conditions are very sensitive to factors that can reduce these prices. In particular, a deterioration in the macroeconomic situation or a drop in quotations on the secondary market may reduce the activity of the primary stock market. However, despite periodic recessions, the scale of this market tends to grow. In 2020, the total volume of IPO and FO transactions exceeded \$1 trillion for the first time in the history of the financial market: issuers raised \$331 billion through IPO, and \$734 billion through FO (Figs. 5 and 6). There was a total of 1415 IPO transactions (average placement size—\$234 million), and 3689 FO transactions (average size—\$200 million).

The leading positions in the primary market are traditionally occupied by the United States, whose share in the total proceeds from IPOs was 53% in 2020 and 40% of FOs. China, which is experiencing an IPO boom due to the rise of its corporate sector, took second place in the world according to these indicators from the 2010s, while the MFC in Hong Kong, which is closely connected with the financial market of the People's Republic of China, took third place.



Fig. 5 Dynamics of the global IPO market (Source PWC. Global IPO Watch Q4 2020. <https://www.pwc.de/de/newsletter/kapitalmarkt/global-ipo-watch-q4-2020.pdf>)

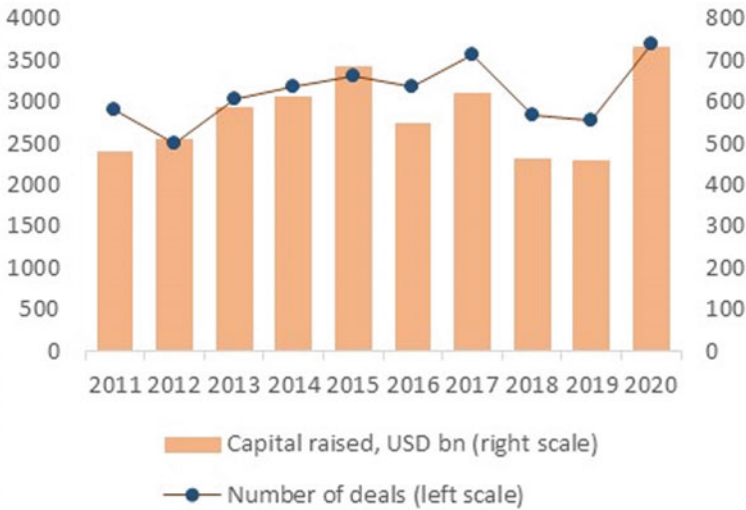


Fig. 6 Dynamics of the global FO market (Source PWC. Global IPO Watch Q4 2020. <https://www.pwc.de/de/newsletter/kapitalmarkt/global-ipo-watch-q4-2020.pdf>)

The development of national equity markets depends on the peculiarities of the models of financial intermediation in the economy that have developed in the countries. The United States has the most capacious stock market in the world, in the financial system of which the stock market plays a leading role. The share of the United States in the total volume of the global stock market in the second half of the 2010s steadily amounted to about 40%. The work of the American market is supported by strong financial institutions. In particular, the two largest stock exchanges in the world, the NYSE and NASDAQ, are located in the United States (Table 5), the headquarters of five banks leading the global ratings of IPO organizers (JPMorgan, Bank of America, Citigroup, Goldman Sachs, and Morgan Stanley), as well as four of the world’s largest asset management corporations (BlackRock, Vanguard Group, State Street, and Fidelity Investments), controlling numerous funds investing in stocks. Along with the corporate stock market, the world’s largest markets for depository receipts of foreign companies have been formed in the United States (the size of the ADR market in 2020 was \$5.9 trillion⁴), as well as shares and units of investment funds, including ETFs and REITs.

Unlike the United States, the Eurozone countries have developed a bank-oriented model of financial intermediation. The stock markets there are less developed. Their total capitalization amounted to \$8.7 trillion in 2020. Today, the equity markets of the Eurozone countries are actively integrating. This is facilitated by the harmonization of national norms for securities’ issuance and circulation, as well as the creation of a unified trading and accounting infrastructure for the stock market, including large multinational exchanges (Euronext, Nasdaq Nordic, and Baltics).

⁴ SIFMA (2021). Capital Markets Fact Book, <https://www.sifma.org/resources/research/fact-book>.

Table 5 Countries with the largest equity markets in 2020

	Domestic Market Capitalisation				Number of listed domestic companies
	\$ billion	Growth in 2011–2020, %	% of GDP	Share of global equity market capitalization, %	
USA	40,720	160.3	194.9	38.5	4266
China	12,214	258.0	83.0	11.5	4154
Japan	6718	102.3	132.8	6.3	3754
Hong Kong, SAR of PRC	6130	171.5	1768.8	5.8	2353
United Kingdom	4046	38.0	149.3	3.8	1979
Canada	2641	38.1	160.7	2.5	3922
India	2595	108.5	97.6	2.5	5215
Saudi Arabia	2429	616.8	347.0	2.3	207
Germany	2284	92.8	59.4	2.2	438
Korea, Rep. of	2176	118.5	132.9	2.1	2318
Switzerland	2002	83.7	266.1	1.9	236
Australia	1721	43.6	129.6	1.6	1902
Iran	1218	1037.8	598.8	1.2	367
South Africa	1052	33.3	313.5	1.0	264
Brazil	988	−30.0	68.4	0.9	345

Sources World Federation of Exchanges. Statistics Portal, <https://statistics.world-exchanges.org>; World Bank Open Data

China's financial system, like the Eurozone, is dominated by banks. However, the huge scale of the economy and the corporate sector have allowed China to build the world's second-largest stock market in just two decades. Only in 2011–2020, its capitalization increased 3.6 times and reached \$12.2 trillion. It is noteworthy that the growth of the market was mainly due to the inflow of domestic capital. Foreign investors' access to the market has been severely restricted for a long time in order to maintain stability. It was only in the 2010s that the Chinese authorities began to gradually open up the market, creating several channels for admitting non-residents. In particular, with the help of the Stock Connect mechanism, international investors registered on the Hong Kong Exchange can participate in trading on exchanges in Shanghai and Shenzhen (Table 6).

Along with China, by the early 2020s, equity markets with a capitalization of over \$1 trillion had formed in some developing countries, including India, Saudi Arabia, Iran, and South Africa. The stock markets of these countries, on the one hand, are flourishing due to the growth in their economic potential. On the other hand, this is stimulating their GDP growth, allowing domestic companies to attract capital more efficiently by issuing securities.

Table 6 The largest stock exchanges in the world in 2021

Name	Country/jurisdiction	Market capitalization, \$ bn	Number of listed companies
New York Stock Exchange (NYSE)	USA	27,687	2525
Nasdaq	USA	24,557	3678
Shanghai Stock Exchange	China	8155	2037
Euronext	Belgium, Ireland, France, Italy, Netherlands, Norway, Portugal	7334	1995
Japan Exchanges Group	Japan	6544	3824
Shenzhen Stock Exchange	China	6220	2578
Hong Kong Exchanges and Clearing	Hong Kong (SAR pf PRC)	5434	2572
LSE Group	United Kingdom	3799	1998
National Stock Exchange of India	India	3548	2053
TMX Group	Canada	3264	3504
Saudi Exchange (Tadawul)	Saudi Arabia	2671	224
Deutsche Boerse	Germany	2503	493
Nasdaq Nordic and Baltics	Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Sweden	2557	1236
SIX Swiss Exchange	Switzerland	2328	232
Korea Exchange	Korea, Rep. of	2219	2406

Source World Federation of Exchanges. Statistics Portal, <https://statistics.world-exchanges.org>

Important indicators of the state of national stock markets are stock indexes—summary indicators calculated by exchanges or provider companies based on current stock quotes of a selected group of domestic corporations, most often the largest by capitalization (Table 7). The dynamics of the indices, reflecting the change in the market value of these companies, allows us to assess both the current state of affairs and long-term trends in the development of markets. Several providers (for example, MSCI, Standard and Poor's, FTSE, and Russell) also calculate indices for stock markets of a group of countries, individual regions, or the world as a whole. Examples are the MSCI World and MSCI Emerging Market indices, popular among investors,

that are calculated based on stock quotes of an extensive sample of companies from developed and developing countries.

Table 7 Major world stock indices

	Country/Region	Base for calculation
S&P 500	USA	Stock quotes of the 500 largest US public corporations traded on the NYSE and NASDAQ
Dow Jones Industrial Average (DOW 30)	USA	Stock quotes of the 30 largest US corporations
Nasdaq Composite	USA	Stock quotes of companies traded on the NASDAQ
S&P/TSX Composite	Canada	Stock quotes of about 250 companies with the largest capitalization traded on the Toronto Stock Exchange (TSX)
SSE Composite	China	Stock quotes of companies traded on the Shanghai Stock Exchange
Nikkei 225	Japan	Stock quotes of the 225 most actively traded companies on the Tokyo Stock Exchange
Hang Seng	Hong Kong (SAR of PRC)	Stock quotes of 50 companies with the largest capitalization traded on the Hong Kong Exchange
Euronext 100	Eurozone	Stock quotes of 100 largest and most liquid European companies listed on Euronext
DAX	Germany	Stock quotes of 40 major German blue-chip companies traded on the Deutsche Boerse
FTSE 100	United Kingdom	Stock quotes of 100 companies with the largest capitalization traded on the London Stock Exchange
CAC 40	France	Stock quotes of 40 French companies with the largest capitalization traded on Euronext
MSCI World	Developed countries	Stock quotes of more than 1500 largest companies traded on stock exchanges of 22 developed countries and Hong Kong
MSCI Emerging Market	Emerging markets	Stock quotes of the largest companies traded on the stock exchanges of 26 leading developing countries

5.3 World Debt Securities Market

This includes the national debt securities markets and the Eurobond market. A wide variety of instruments are traded on domestic markets, which can be divided into several main types (Table 8). These securities are usually issued in local currency according to national legislation and cannot be directly traded on foreign stock markets in most cases. The issuers of bonds are most often residents, but in several countries, non-residents are also allowed to issue bonds under local registration rules for circulation on the domestic market (foreign bonds). For example, non-residents can issue dollar-denominated bonds in the United States for placement on the American market (Yankee bonds).

Table 8 The main types of bonds traded on the domestic debt securities markets

Type of bond	Issuers	Description
Government (Sovereign) Bonds	Central governments	Debt securities with different maturities are issued to cover the state budget deficit, for targeted financing of state investment programmes or for restructuring existing debt <i>Example:</i> US Treasures: T-Bills—zero-coupon bonds with a maturity of up to one year, T-Notes (2–10 years), T-Bonds (20 or 30 years)
Subnational Bonds	Municipal, provincial, and state governments	Medium- or long-term debt securities issued to cover the budget deficit of subnational entities or for targeted financing of their investment projects <i>Example:</i> US Municipal Bonds
Corporate Bonds	Corporations, financial institutions	Debt securities issued to finance the operational and investment activities of corporations
Asset-Backed Securities (ABS)	Financial institutions—originators, special purpose vehicles (SPV)—issuers	Debt securities, payments on which are received and secured by a certain set of basic income-generating assets, e.g., car loans, credit card receivables, equipment leases, student loans, etc.
Mortgage-Backed Securities (MBS)	Financial institutions—originators, special purpose vehicles (SPV)—issuers	Type of asset-backed securities that are backed by a pool of mortgage loans
Foreign Bonds	Foreign governments, corporations, financial institutions	Debt securities issued by an entity in the currency and following the legislation of a foreign country for placement on its market <i>Examples:</i> Yankee bonds (USA), Samurai bonds (Japan), Bulldog bonds (UK)

Eurobonds issued by governments, corporations, and financial institutions are initially intended for circulation in the markets of several countries. They are characterized by the following features:

- the currency of Eurobonds in most cases differs from one of the issuing countries
- the underwriting of Eurobonds is carried out by an international banking syndicate
- they are usually placed on the markets of several countries in addition to the country of registration of the issuer (despite the prefix ‘euro’, the Eurobond market is not limited to the Eurozone)
- the applicable law is foreign to the issuer (often English)

With the help of Eurobonds, sovereign and corporate borrowers attract large funds in the international capital market. The volume of one issue is at least one hundred million dollars. Eurobonds are traded mainly on the OTC market, although they are often listed on one of the European stock exchanges.

The share of debt securities issued by residents in their countries in the 2010s steadily accounted for about 80% of the global bond market. The remaining 20% was accounted for by international bonds, to which the Bank for International Settlements refers Eurobonds and foreign bonds. Their total volume increased by 29% in 2011–2020 to \$27 trillion. Most international bonds are denominated in dollars (45% in 2020) and euros (40%). If we take the total volume of the global market, the share of bonds in dollars is slightly lower—41% (bonds in euros—17%).⁵

As in the stock market, we can distinguish primary and secondary markets in the global bond market. The primary bond market, where issuers place new securities, is many times larger than the primary stock market. For comparison, in 2020, bonds with a maturity of more than one year were placed in the world in the amount of \$27.3 trillion, while the total volume of IPO and FO transactions amounted to about \$1 trillion. The primary bond market, along with the bank loans market, serves as the main source of borrowed capital for governments and corporations. It is especially important for countries where, for several reasons, including political ones, it is more convenient to issue debt securities than to raise funds from credit institutions (Fig. 7).

It is no coincidence that in 2020, almost half (49.8%) of all debt securities traded on the world market were government and subnational bonds. The share of such securities in the market increased markedly in the 2010s, due to an increase in the issuance of debt obligations by countries to cover growing budget deficits. Particularly large-scale borrowings were carried out in 2020 to finance measures to overcome the consequences of the COVID-19 pandemic. By the end of the year, the total debt on bonds of the public administration sector increased by 21% worldwide and reached \$69 trillion. The shares of bonds of financial institutions and non-financial corporations amounted to 35.1 and 13.5%, respectively, in 2020.

The most capacious bond market has developed in the United States (33.6% of the world market), followed by China, Japan, and several large developed countries (Table 9). In emerging economies, except for China, bond markets are relatively small. It is noteworthy that in many countries, for example, the United States, Japan,

⁵ BIS. Debt Securities Statistics, https://www.bis.org/statistics/secstats.htm?m=6_33_615.

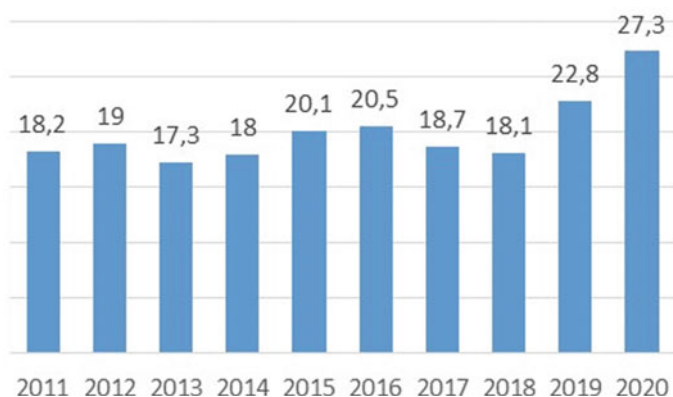


Fig. 7 Global long-term bond issuance (Source SIFMA [2021]. Capital Markets Fact Book, <https://www.sifma.org/resources/research/fact-book>)

Great Britain, and France, more than half of all outstanding bonds are public sector debt securities (sovereign and subnational bonds). This once again confirms the high importance of bond borrowing for governments as an instrument for conducting financial policies.

Table 9 Countries with the largest bond markets in 2020

	Debt securities outstanding, \$ billion	Growth in 2011–20, %	Share of general government bonds, %	Share of the global bond market, %
USA	46,401	52.2	52.0	33.6
China	18,556	426.0	39.7	13.4
Japan	14,670	–30.0	73.6	10.6
United Kingdom	7253	29.8	50.0	5.3
France	5539	26.9	51.1	4.0
Germany	4287	–30.0	52.7	3.1
Canada	3915	99.4	42.7	2.8
Italy	3650	–1.0	72.3	2.6
Korea, Rep. of	2671	79.5	31.7	1.9
Australia	2492	32.6	41.7	1.8
Netherlands	2403	3.5	18.3	1.7
Spain	2315	0.5	62.5	1.7
Brazil	2058	–30.0	62.4	1.5
India	1124	112.1	94.0	0.8
Ireland	979	–30.0	18.3	0.7

Source BIS. Debt Securities Statistics, https://www.bis.org/statistics/secstats.htm?m=6_33_615

6 Derivative Market

Derivatives (financial derivatives) in their various forms have become a vital part of modern securities markets. They are secondary securities whose value is solely based (derived) on the value of the primary security that they are linked to—the underlying security. The last few decades have shown the emergence of derivative contracts to trade such fundamental products like agricultural commodities, energy, precious metals, common stock, bonds, and currencies. There are even derivatives to trade hypothetical underlying assets (e.g., option and futures contracts on the Standard & Poor’s stock indexes), as well as combination derivatives, such as option contracts that allow investors to decide to enter into futures contracts involving another security or commodity later.

As we can see, derivative securities can be used by investors in the same way as the underlying assets: an investor believing that a certain common stock’s value will increase can benefit from either a purchase of the stock directly or an option to purchase that stock at a predetermined price. However, the real key to understanding how and why derivatives are used lies in their ability to modify the risk and expected return characteristics of existing investment portfolios. That is, options and futures allow investors to hedge the risk of a collection of stocks in ways that go far beyond diversification.

6.1 Key Types of Derivatives

The key types of derivatives include:

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> - futures - options - forwards - swaps | } | <p>currency, stock and commodity exchanges</p>
<p>over-the-counter exchange (OTC)</p> |
|---|---|--|

A *forward contract* (*forward*) is an agreement to buy or sell an asset on a fixed date in the future, called the delivery time, for a previously specified price (forward price). The party to the contract who agrees to sell the asset is considered to be taking a short forward position. The other party, which is obliged to buy the asset at delivery, is said to have a long forward position. The principal reason for entering into a forward contract is to become independent of the unknown future price of a risky asset. There are a variety of examples: a farmer wishing to fix the sale price of his crops in advance, an importer arranging to buy foreign currency at a fixed rate in the future, a fund manager who wants to sell a stock for a price known in advance, etc.

This means that a forward contract is a direct agreement between two parties. It is typically settled by the physical delivery of an asset on an agreed-upon date. As an alternative, settlement may sometimes be in cash. One of the two parties to a forward contract will be losing money. There is always a risk of default by the party suffering a loss.

Forward contracts are negotiated in the over-the-counter market (OTC). This means that forward contracts are agreements between two private parties, one of which is often a derivatives intermediary, such as a bank, rather than a formal exchange. One advantage of this private arrangement is that the terms of the contract are completely flexible: they can be whatever any two mutually consenting counterparties agree to. Another desirable feature to many counterparties is that these arrangements may not require collateral. Instead, the long and short positions sometimes trust each other to honour their respective commitments on Date T. This lack of collateral means that forward contracts involve credit (or default) risk, which is one reason why banks are often market makers for these instruments (Fig. 8).

A *financial futures contract (futures)* is similar to a forward contract specifying that a financial instrument must be delivered by one party to another on a stated future date. However, it differs from a forward contract and overcomes some of the liquidity and default problems of forwarding markets. Futures contracts have standard terms of agreement (e.g., expiration date, identity, and the amount of the underlying asset) and both parties trade through a centralized market called a futures exchange. Although

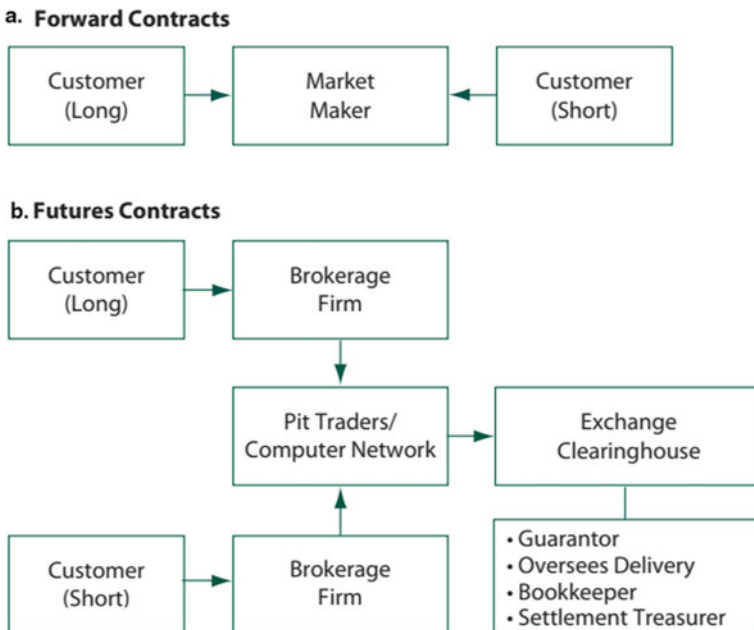


Fig. 8 Forward and futures trading mechanism

Table 10 Institutional use of futures markets

Type of Financial Institution	Participation in futures markets
Commercial Banks	Take positions in futures contracts to hedge against interest rate risk
Savings Institutions	Take positions in futures contracts to hedge against interest rate risk
Securities Firms	Execute futures transactions for individuals and firms. Take positions in futures contracts to hedge their portfolios against stock market or interest rate movements
Mutual Funds	Take positions in futures contracts to speculate on future stock market or interest rate movements. Take positions in futures contracts to hedge their portfolios against stock market or interest rate movements
Pension Funds	Take positions in futures contracts to hedge their portfolios against stock market or interest rate movements
Insurance Companies	Take positions in futures contracts to hedge their portfolios against stock market or interest rate movements

the standardization of contracts deprives the end-users of the ability to select the most desirable terms, it creates contract homogeneity, whereby the counterparties can always get out of a previous commitment prior to expiration by simply trading their existing position back to the exchange at the prevailing market price at any time during the life of the contract (see Table 10).

The futures price is analogous to the forward contract price. However, the futures exchange will require both counterparties to post collateral, or margin, to protect themselves against default. These margin accounts are held by the exchange's clearinghouse and marked to market (i.e., adjusted for contract price movements) daily to ensure that both end-users always maintain sufficient collateral to guarantee their participation.

There are three different types of forwards and futures: (a) interest rate, (b) equity (stock) index, and (c) forward rate.

- (a) Interest rate forwards and futures were among the first derivatives to specify a financial security as an underlying asset. The earliest versions of these contracts were designed to lock in the forward price of a particular fixed-coupon bond, which in turn locks in its yield. This market has progressed to where such contracts as forward rate agreements and interest rate swaps now fix the desired interest rate directly without reference to any specific underlying security.
- (b) Like interest rate futures, stock index futures were originally intended to provide a hedge against movements in an underlying financial asset. The underlying financial asset for a stock index futures contract is a hypothetical thing that does not exist in practice and therefore cannot be delivered to settle a contract. Stock index futures are intended to provide general hedges against stock market movements and can be applied to either whole (i.e., diversified) portfolios or individual stocks.

- (c) The forward rate agreement (FRA) is the most basic of the OTC interest rate contracts. Two parties agree today to a future exchange of cash flows based on two different interest rates. One of the cash flows is tied to a yield that is fixed at the deal's origination (the fixed rate); the other is determined at some later date (the floating rate). On the contract's settlement date, the difference between the two interest rates is multiplied by the FRA's notional principal and prorated to the length of the holding period.

Options are contracts that give the purchaser the option or the right to buy or sell an underlying financial instrument at a specified price, called the exercise price or *strike price*, within a specific period (the term to expiration). The seller (sometimes called the writer) of the option has to buy or sell the financial instrument to the purchaser if the owner of the option exercises the right to sell or buy it. These option contract features are important enough to be emphasized: the owner or the buyer of an option does not have to exercise the option: they can let the option expire without using it. Hence, the owner of an option does not have to take any action, but rather has the right to exercise the contract if they so choose.

By contrast, the seller of an option has no choice: they must buy or sell the financial instrument if the owner exercises the option. Since the right to buy or sell a financial instrument at a specified price has value, the owner of an option pays a premium. There are two types of option contracts: *American options* can be exercised at any time up to the expiration date of the contract, and *European options* can be exercised only on the expiration date.

A *call option* is a contract that gives the owner the right to buy a financial instrument at the exercise price within a specific period. A *put option* is a contract that gives the owner the right to sell a financial instrument at the exercise price within a specific period (Table 11).

A European call option gives the owner the right to acquire the underlying security at expiry. For an investor to profit from a call option at expiry, the stock's price has to be trading high enough above the strike price to cover the cost of the option premium (Fig. 9).

A European put option allows the holder to sell the underlying security at expiry. For an investor to profit from a put option, the stock's price at expiry has to be trading far enough below the strike price to cover the cost of the option premium (Fig. 10).

In addition to forwards, futures, and options, financial institutions use one other important financial derivative to manage risk.

Swaps are financial contracts that oblige each party to the contract to exchange (swap) a set of payments it owns for another set of payments owned by the other party. There are two basic kinds of swaps: currency swaps involve the exchange of a set of payments in one currency for a set of payments in another currency; interest rate swaps involve the exchange of one set of interest payments for another set of interest payments, all denominated in the same currency.

An interest rate swap is an arrangement whereby one party exchanges one set of interest payments for another. In the most common arrangement, fixed-rate interest payments are exchanged for floating-rate interest payments over time. The provisions

Table 11 Institutional use of options markets

Type of financial institution	Participation in options markets
Commercial banks	Sometimes offer options to businesses
Savings institutions	Sometimes take positions in options on futures contracts to hedge interest rate risk
Securities firms	Stock mutual funds take positions in stock index options to hedge against a possible decline in the prices of the stocks in their portfolios. Stock mutual funds sometimes take speculative positions in stock index options in an attempt to increase their returns. Bond mutual funds sometimes take positions in options on futures to hedge interest rate risk
Mutual funds	Serve as brokers by executing stock option transactions for individuals and businesses
Pension funds	Take positions in stock index options to hedge against a possible decline in the prices of the stocks in their portfolio. Take positions in options on futures contracts to hedge their bond portfolios against interest rate movements
Insurance companies	Take positions in stock index options to hedge against a possible decline in the prices of the stocks in their portfolio. Take positions in options on futures contracts to hedge their bond portfolios against interest rate movements

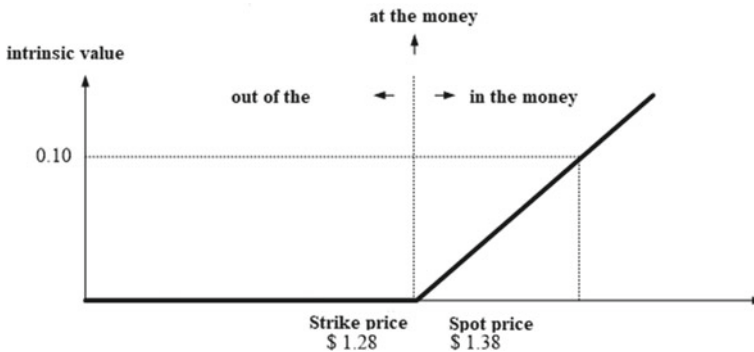


Fig. 9 European call option, the strike price is 1EUR = 1.28USD

of an interest rate swap include the following: the notional principal value to which the interest rates are applied to determine the interest payments involved; the fixed interest rate; the formula and type of index used to determine the floating rate; the frequency of payments, such as every six months or every year; and the lifetime of the swap. The market for swaps is facilitated by over-the-counter trading rather than trading on an organized exchange. Given the uniqueness of the provisions in each swap arrangement, swaps are less standardized than other derivative instruments, such as futures or options.

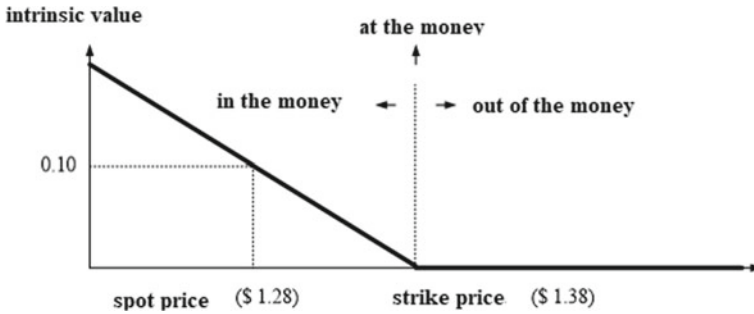


Fig. 10 European put option, the strike price is 1EUR = 1.38USD

Interest rate swaps enable financial institutions such as savings institutions, commercial banks, and pension funds to offset any gains or losses that result specifically from interest rate movements. Consequently, as interest rate swaps reduce interest rate risk, they can also reduce potential returns. Interest rate swaps are primarily used by financial institutions that would be adversely affected by expected changes in interest rates. The more commonly used swaps include plain vanilla swaps, forward swaps, callable swaps, extendable swaps, zero-coupon swaps, and equity swaps.

Interest rate swaps can be used through swap options (or swaptions). A callable swap provides the party making the fixed payments with the right to terminate the swap before its maturity. It allows the fixed-rate payer to avoid exchanging future interest payments if they choose. The disadvantage of a callable swap is that the party given the right to terminate the swap pays a premium that is reflected in a higher fixed interest rate than the party would pay without the call feature. The party may also incur a termination fee if it exercises its right to terminate the swap arrangement.

An extendable swap contains a feature that allows the fixed-for-floating party to extend the swap period (Table 12).

6.2 Bulls and Bears in Derivative Markets

Derivatives market participants are divided into ‘bulls’ and ‘bears’. The bear market phenomenon is thought to get its name from how a bear attacks its prey—swiping its paws downward. This is why markets with falling stock prices are called bear markets. Just like the bear market, the bull market may be named after the way in which a bull attacks by thrusting its horns up into the air.

Investors can make gains in a bear market by short selling. This technique involves selling borrowed shares and buying them back at lower prices. It is an extremely risky trade and can result in heavy losses if it does not work out. A short seller must borrow the shares from a broker before a short sell order is placed. The amount of a short seller’s profit or loss is the difference between the price where the shares were sold

Table 12 Institutional use of swaps markets

No.	Type of financial institution	Participation in swaps markets
1	Commercial Banks	Engage in swaps to reduce interest rate risk. Serve as an intermediary by matching two parties in a swap. Serve as a dealer by taking the counterparty position to accommodate a party that wants to engage in a swap
2	Savings And Loan Associations And Savings Banks	Engage in swaps to reduce interest rate risk
3	Finance Companies	Engage in swaps to reduce interest rate risk
4	Securities Firms	Serve as an intermediary by matching two parties in a swap. Serve as a dealer by taking the counterparty position to accommodate a party that wants to engage in a swap
5	Pension Funds	Engage in swaps to reduce interest rate risk
6	Insurance Companies	Engage in swaps to reduce interest rate risk

Fig. 11 Open and closed positions

Position		Balance sheet
Open position	Long	Assets > Liabilities
	Short	Assets < Liabilities
Close position		Assets = Liabilities

and the price where they were bought back, which is referred to as ‘covered’. Bull markets generally occur when the economy is strengthening or when it is already strong.

One of the most basic investment strategies is to buy a particular security and hold it in order to potentially sell it at a later date. This strategy necessarily involves confidence on the part of the investor: why hold onto a security unless you expect its price to rise? For this reason, the optimism that comes along with bull markets helps fuel the buy-and-hold approach.

A position is established when a trader or investor executes a trade that does not offset an existing position. Open positions can be either long, short, or neutral with respect to the direction of their price (Fig. 11).

Positions come in two main types. Long positions are the most common and involve owning a security or contract. Long positions gain when the price increases and lose when it decreases. Short positions, in contrast, profit when the underlying security falls in price. A short often involves securities that are borrowed and then sold, to hopefully be bought back at a lower price.

6.3 *Derivative Market Evolution*

The development of the global financial market and economic globalization has been accompanied by the evolution and advancement of the derivative market, which was initially shaped by the need for flexible risk management instruments. Subsequently, derivatives also came to be used extensively for speculative purposes.

There have been several stages in the global history of exchange-traded and OTC derivatives. Exchange trading of derivatives with centralized clearing goes back to the eighteenth century and took a long time to mature. Clearing houses first emerged on the rice exchange in Japan and then spread to commodity exchanges in Europe. They acquired their present form in the US commodity markets during the 1970s. The collapse of the Bretton Woods system, followed by a transition to floating exchange rates, gave rise to futures contracts on currency pairs that were settled by clearing houses. A positive effect on improving the efficiency of the clearing was subsequently made by technological innovations, including the spread of computers.

In contrast to exchange-traded contracts, OTC derivatives evolved in the absence of reporting and continuous monitoring of transactions until the global financial crisis of 2007–2009. Despite weak regulation and the complex structure of some OTC contracts, OTC derivatives were becoming more appealing to investors. From 1998 to 2008, the OTC derivatives market increased eightfold by nominal volume of open contracts (from \$72 trillion to \$684 trillion).⁶ The widespread use of credit default swaps on securitized papers resulted in the tremendous impact that the derivatives market had on financial stability in 2008–2009. Given the lack of transparency, standardization, and transaction accounting, market participants and regulators could not promptly assess the risks and real aggregate positions in OTC derivatives. With high market concentration and strong connections between participants, these factors had a devastating effect on the global financial and economic system in 2007–2009, highlighting the need for integrated collaboration between countries to regulate the OTC derivatives market.

In order to reduce systemic risks, decisions were made at the 2009 Pittsburgh G20 summit to develop the regulation of OTC derivatives worldwide. The key areas designated for development included the standardization of OTC contracts, accounting, and centralized clearing for OTC transactions, the development of electronic trading, and increased requirements for contracts with no centralized clearing.

These decisions helped accelerate the transition of OTC derivatives to centralized clearing. Trading OTC derivatives with the involvement of CCPs required that the contracts have strictly standardized terms and conditions in line with generally accepted risk management practices, which were later formalized by regulatory

⁶ The role of over-the-counter derivatives in global financial crisis and corporate failures in recent times and its regulatory impacts, Issahaku Salifu, 2018.

Table 13 Global OTC derivatives market, \$ billion

	Notional amounts outstanding		Gross market value	
	2020	2021	2020	2021
All contracts	582,055	598,416	15,783	12,439
Foreign exchange contracts	97,549	104,249	3176	2548
Outright forwards and forex swaps	58,031	63,723	1645	1343
Siggeps swaps	27,810	30,049	1308	1041
Options	11,669	10,436	222	164
Other products	40	41	–	–
Interest rate contracts	466,494	475,271	11,319	8612
FRAs	72,927	39,438	285	195
Swaps	355,791	397,109	10,162	7787
Options	37,471	38,562	872	630
Other products	305	161	–	–
Equity-linked contracts	7084	7280	840	655
Forwards and swaps	3643	3968	321	278
Options	3441	3312	519	377

Source BIS Statistics Explorer: Table D5, <https://stats.bis.org/statx/srs/table/d5.1?f=pdf>

documents such as the principles for financial market infrastructures.⁷ The standardized nature of derivatives ensured their liquidity and price competitiveness while maintaining stability in the market. As part of efforts to implement the Pittsburgh agreement, the European Union began gradually introducing the European Market Infrastructure Regulation for Europe⁸ (EMIR EU) in 2012, and the United Kingdom introduced EMIR UK. These are standards establishing the procedure for circulating OTC derivatives in the market and regulating the operations of CCPs and trade repositories. The 2010 Dodd-Frank Act limited the range of US resident participants who can directly make transactions in the OTC market. In the United States, the regulation of derivatives was included in the mandates of the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC).

According to the statistics of the Bank for International Settlements, the OTC derivatives market is characterized by the following (Table 13).

The exchange market for derivative financial instruments has demonstrated dynamic development (Tables 14 and 15).

⁷ Principles for financial market infrastructures, EMIR, 2014.

⁸ Union Regulation (EU) No. 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories.

Table 14 Global market of exchange-traded derivatives, \$ billion (daily average turnover)

	2020	2021
<i>Futures</i>		
All markets	5415	5863
Interest rate	5281	5723
Short-term	4507	4836
Long-term	774	887
Foreign exchange	133	140
<i>Options</i>		
All markets	1414	1523
Interest rate	1403	1509
Short-term	1308	1393
Long-term	95	115
Foreign exchange	11	14

Source Exchange-traded futures and options, by location of the exchange. Notional principal, in billions of US dollars, <https://stats.bis.org/statx/srs/table/1d1?f=pdf>

The growing interest in the market for derivative contracts on digital assets is an important current trend. The number of regulated trading platforms is growing (Table 16).

Since 2018, CME Group has been the leader in offering a fully regulated marketplace for bitcoin futures. However, its dominant position is being challenged by other large market operators.

Beyond the small but growing number of regulated exchanges, there is a host of unregulated trading venues around the world that boast significant volume in a much wider array of digital assets. These include derivatives offering exposure to a wide array of cryptocurrencies besides bitcoin, etc. The trading venues are not subject to the same rules as regulated exchanges and there are few if any barriers to wash sales, pump-and-dump schemes, and other forms of market manipulation.

Nevertheless, some of these trading venues have had great success in building large markets for crypto derivatives. For example, Binance, one of the largest venues, had \$1.7 trillion in derivatives volume in 2021, according to a Reuters report, even though the company has been banned from offering its products in several countries.

Table 15 Indicators of the global exchange derivatives market

Global futures and options volume, \$		
Type	2020	2021
Options	21,265,962,084	33,309,394,225
Futures	25,549,388,053	29,275,289,895
Total	46,815,350,137	62,584,684,120
Global futures and options volume by region, \$		
Region	2020	2021
Asia–Pacific	20,147,190,374	30,549,801,646
North America	12,852,019,653	15,381,696,837
Latin America	6,467,912,726	8,893,935,540
Europe	5,608,640,531	5,451,896,778
Other	1,739,586,853	2,307,353,319
Total	46,815,350,137	62,584,684,120
Global futures and options volume by category, \$		
Category	2020	2021
Equity	28,379,423,779	41,643,207,304
Currencies	4,512,602,976	5,542,070,172
Interest Rates	4,115,441,972	4,577,345,777
Agriculture	2,570,657,307	2,820,109,552
Metals	2,398,531,605	2,765,534,503
Energy	3,151,107,672	2,710,751,767
Other	1,687,584,826	2,525,665,045
Total	46,815,350,137	62,584,684,120

Source The Futures Industry Association, <https://www.fia.org/media/4444>

7 Conclusions

1. The main function of the financial market is to redistribute financial resources between suppliers (investors) and consumers by creating and exchanging financial assets.
2. The money market is the part of the financial market where mainly short-term (up to one year) deposit, credit, and settlement operations are carried out, reflecting the supply and demand for money. The discount market, interbank market, and foreign exchange markets are structurally united in the money market, where operations are carried out to mobilize temporarily free funds owned by the population, the state, and firms, and transform them into loan capital, which is provided in the form of loans.
3. Investing in the money market is carried out both directly, by the direct investment of funds in short-term transactions with securities and currency, and indirectly,

Table 16 Crypto derivatives listed on regulated exchanges in Germany, Singapore, and the United States 2021

Exchange	Type of derivative	Instrument	Size	Settlement	Jurisdiction
Bitnomia	Future	Bitcoin (USD)	1 bitcoin	Physical	United States
CME	Future	Bitcoin	5 bitcoin	Cash	United States
CME	Future	Micro Bitcoin	0.1 bitcoin	Cash	United States
CME	Option	Bitcoin	5 bitcoin	Cash	United States
ErisX	Future	Bitcoin	0.1 bitcoin	Physical	United States
ErisX	Future	Bounded Bitcoin	0.01 bitcoin	Cash	United States
Eurex	Future	Bitcoin ETN (FBTX)	1 bitcoin	Physical	Germany
ICE Futures Singapore	Future	Bakkt Bitcoin (USD) Monthly	1 bitcoin	Cash	Singapore
ICE Futures U. S	Future	Bakkt Bitcoin (USD) Monthly	1 bitcoin	Physical	United States
ICE Futures U. S	Future	Bakkt Bitcoin (USD) Daily	1 bitcoin	Physical	United States
ICE Futures U. S	Option	Bakkt Bitcoin (USD) Monthly	1 bitcoin	Physical	United States
LedgerX	Future	Bitcoin Mini	0.01 bitcoin	Physical	United States
LedgerX	Future	Bitcoin Mini Day Ahead Swap	0.01 bitcoin	Physical	United States
LedgerX	Option	Bitcoin Mini	0.01 bitcoin	Physical	United States
CME	Future	Ether	50 ether	Cash	United States
ErisX	Future	Ether	1 ether	Physical	United States
ErisX	Future	Bounded Ether	1 ether	Cash	United States
LedgerX	Option	Ethereum Deci	0.1 bitcoin	Physical	United States
LedgerX	Future	Ethereum Deci Day Ahead Swap	0.1 bitcoin	Physical	United States
ErisX	Future	Bounded Ether/Bitcoin	\$10,000	Cash	United States

Note The Eurex Bitcoin ETN futures are based on 1000 shares of an exchange-traded note that is redeemable in bitcoin. Each share of the ETN represents 0.001 of a bitcoin

Sources Bitnomial, CME Group, ErisX, Intercontinental Exchange, LedgerX

for example, through banks. Financial intermediaries are primarily banks, stock exchanges, and brokerage and dealer firms. The money market is the most important subject of state regulation, which is carried out primarily through interest rates.

4. The capital market is the part of the financial market where medium- and long-term financial assets with a maturity of more than one year are created and traded. The main instruments in the capital market include loans and borrowings from

banks and other financial institutions, stocks, bonds, and financial derivatives. The global capital market unites internationalized and integrated national markets for these instruments to varying degrees, and also includes markets for Eurobonds, loans from international financial organizations, and some other types of financial assets that are international by nature.

5. Unlike the money market, in which participants redistribute free cash to regulate liquidity and generate interest income, the basic function of the capital market is to mobilize savings and meet the needs of governments, non-financial corporations, and other economic agents for long-term resources needed to finance current and investment activities. The main role in performing this function is played by the primary capital market, where market instruments are created or placed for the first time. Subsequent trading of these instruments is carried out on the secondary market.
6. Theories (concepts, models) regarding the capital market are generalized systematized ideas about how the capital market, as a whole or its aspects, functions. Dozens of various theories and models have been developed. Based on a given system of initial assumptions, their exponents try to describe the pricing mechanisms for various types of financial assets traded on the capital market, the characteristics of the market participants' behaviour, ways of forming portfolios, the possibility of forecasting market dynamics, and how to assess the risks of market bubbles and crises.
7. National markets for shares (equity) and bonds (debt securities), as well as the international Eurobond market, form the basis of the global securities market. It performs the functions of transforming savings into investments and redistributing capital at the global level by issuing and placing securities. This includes the issue of securities, the initial placement of securities, and the organization of the circulation of issued securities on the secondary market by listing them on stock exchanges or registering them on over-the-counter trading platforms.
8. At present, the global stock market's main driver of development is the progress of digital technologies, which has dramatically widened market opportunities for all categories of participants, including small private investors. The massive influx of investors who want to make money with securities transactions has become one of the main trends in recent years, which has had a profound impact on the dynamics and quality of market growth. Another major trend affecting the structure of the global securities market is the increasing openness and interdependence of national markets.
9. The global derivatives market continues to develop gradually. The significant volumes in its various segments are poised to grow further. Interest rate and foreign exchange derivatives are the most common types of derivatives in the financial markets. Monetary authorities monitor the derivatives market on an ongoing basis, which includes an assessment of potential risks and vulnerabilities. As there are no current systemic risks to financial stability, these risks may not take long to arise given the derivatives market's high pace of development.

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International Trade in Goods and Services



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Abstract The chapter starts with a review of theories of international trade including “new” and “new-new” trade theories. The basic part of the chapter is on trends and challenges in the merchandise and service trade. A special para is devoted to e-commerce.

1 Introduction

International trade has been and remains the main form of international business. The motivation for the participation in international trade has been substantiated both in early theories and in modern theories, however, the dynamics and instability of the modern world economy affect the emergence of more and more new factors and challenges as well as the so-called “new” and “new-new” theories with their focus on industries and firms participating in international trade. Nowadays international trade in goods and services is acquiring new forms and channels, however, trade reflects the development of the world economy in general and all shocks and crisis immediately influence world trade. The dynamic innovation and digitalization led to the expansion of e-commerce, which achieved a truly global scale.

2 Theories of International Trade

The first theoretical concept in international trade was *mercantilism*, created in the seventeenth century and reflected the protectionist policies of that era. The basic idea was that gold and silver are wealth. Therefore, for precious metals’ inflow, export should be encouraged and imports should be discouraged. Antonio Serra in 1613, in his “A Short Treatise on the Wealth and Poverty of Nations”, highlighted the level of development of crafts, the ingenuity of the population, the development of

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foreign trade, the rule of law and fair justice as factors of wealth. He also noted the importance of the country's location on international transport routes. Thomas Mun in 1621, in his "A Discourse of Trade from England unto the East-Indies", contrasted the outdated monetary balance, which provided a ban on the export of precious metals, with the concept of an active trade balance, where the monetary exchange was required to expand trade. Later in "The Wealth of England in Foreign Trade", he wrote about the policy of increasing exports and reducing imports of goods. He considered the expansion of imports for re-export; import of raw materials needed for export production; independent production of goods imported from abroad; priority of essential goods over luxury goods in imports.

In 1776, Adam Smith offered a new view on the functioning of markets and the role of the state in the economy, known as *the classical theory* in his book "The Wealth of Nations". Smith has shown how the achievement of private interests leads to an increase in the economic well-being of the whole society. According to Adam Smith, the regulation of foreign trade cannot change the maximum output determined by capital. Only the output structure can be changed, which will be less beneficial compared to the free conditions. However, he acknowledged that trade regulation could create an industry in a country earlier than it would otherwise, and later products will be produced cheaper than abroad. "The Wealth of Nations" also contains a formulation of Adam Smith's theory of absolute advantage: if a foreign country can supply us with a commodity cheaper than we can make it, better buy it from them with some part of the produce of our industry, employed in a way in which we have some advantage.¹

Despite the apparent self-evidence of this statement, it is not entirely true, that was proved in 1817 by D. Ricardo in his "comparative advantages" theory, i.e., the country must have a different cost ratio, and the absolute value of costs is not important. Graphically, Ricardo's theory can be represented as follows: labour is the only factor of production, and its costs for the production of goods in different countries are known. The cost ratio will set the slope of this line (alpha), it will also be the relative price in the country under autarky conditions. Similarly, this can be shown for the cost coefficient and autarky prices in the foreign country (beta). Then if, before the start of trade, the country produced and consumed at point E0, it can redistribute resources between industries and start producing at point E1, and then with trade at relative prices (beta) can reach point E2, where both goods will be consumed in larger quantities than in E0, i.e., the country will benefit from foreign trade. If two countries interact, the price level must settle at some level between (alpha) and (beta) so that they both benefit from trade (Fig. 1).

This graph demonstrates the concept of specialization that underlies the international division of labour: a country must reduce the output of the less efficient product 2 and increase the output of the more efficient product 1. Thus, although the country as a whole will benefit from trade, some industries will inevitably suffer. The graph also shows that the source of trade gains, even for a country with absolute advantages

¹ Adam Smith, *An inquiry into the nature and cause of the wealth of nations*, New York: Random House, 1937, p. 424.

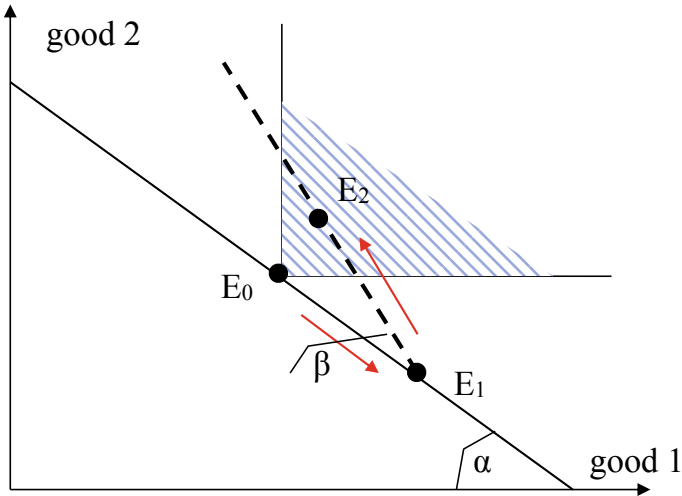


Fig. 1 Graphical representation of the theory of comparative advantages

in both goods, is the ability to obtain through specialization and trade more goods than it could produce on its own.

Ricardo’s theory also has shortcomings, namely the unrealistic assumption of fixed costs (which in fact can only be observed in the short run) and the inability to answer the question about the exact price level in foreign trade. Overcoming these shortcomings required the emergence of a new generation of theories.

The next important theoretical direction in the study of international trade was *the neoclassical theory*. In 1879 Alfred Marshall’s “The Pure Theory of Foreign Trade” was privately published, most of which was reproduced in 1923 as an appendix to his book “Money, Credit and Commerce”. Marshall introduced in analysis the so-called “trade offer curves” (the volume of exports that a country is ready to offer in exchange for a given volume of imports). Using these curves, he considered gains from trade and stability of foreign trade equilibrium and analysed elasticities and shifts in trade equilibrium after the introduction of import or export taxes.

Further neoclassical analysis of foreign trade followed two directions. One group of authors (G. Haberler, J. Viner, W. Leontief) justified the formation of trade offer curves as a result of the interaction of domestic demand and supply and studied the properties of the equilibrium of foreign trade. Another group of authors (F. Edgeworth, A. Lerner, L. Metzler, H. Johnson) studied the influence of trade policy instruments on the trade offer curve bias. A holistic presentation of neoclassical views on foreign trade can be found in James Meade’s “Theory of International Economic Policy. Trade and Welfare” (1955).

A special case of the neoclassical theory of international trade is presented in Heckscher–Ohlin’s theory, based on Heckscher’s (1919) work “The Influence of Foreign Trade on the Distribution of Income” and developed in the book “Interregional and International Trade” published in 1933 by another Swedish economist

Bertil Ohlin This theory considers the trade of two countries in the products of two industries (one industry is capital-intensive, the other is labour-intensive) and assumes the same consumption preferences among the population of both countries. Because countries are not equally endowed with resources, maximizing the value of output will result in a capital-abundant country producing relatively more capital-intensive goods, and a labour-abundant country producing relatively more labour-intensive goods. Assuming the same preferences, countries will tend to have the same consumption pattern, which means that each country will export a product that uses its abundant factor intensively. The disadvantage of this theory is the condition of identical preferences (in general, they may differ between countries, so this theory can be considered only as a special case of the neoclassical theory). A certain constraint on production functions is also the requirement that capital-intensive goods remain capital-intensive at all prices. Another problem is that the main conclusion about the export formation cannot be generalized to a large number of countries and goods. Empirical studies show that the proposed Heckscher-Ohlin's rule is valid for the world trade only on average, so this theory is of little help in forecasting the real trade in a particular product.

The whole range of so-called *new trade theories* emerged in the late 1970s and early 1980s after traditional theories had failed to explain the concentration of trade between developed countries, turning into an intra-industry trade. These theories abandoned the traditional assumptions of perfect competition, product homogeneity, and lack of economies of scale and suggested, that goods may differ in physical characteristics (modelled with the Lancaster utility function or with the Dixit-Stiglitz utility function) and in quality (for example, models with the so-called quality ladder). Not only the usual economies of scale are possible (cost reduction with an increase in the company's production) but also an external scale effect (reduction of the average costs of all firms with an increase in the production of the entire industry). An industry market structure can be monopolistic competition, be a Cournot oligopoly or a Bertrand oligopoly. Any of these assumptions—heterogeneous goods, oligopolistic competition or economies of scale—are sufficient to capture intra-industry trade in the model. But possible options for market and goods characteristics here can be combined in various ways, which gives rise to a huge number of models and approaches related to the new theories of international trade.

The most famous “new trade theory” is P. Krugman's model of international trade in monopolistic competition: the utility function has the property of “love for variety” and a consumer will strive to purchase all available product modifications. The production function is characterized by economies of scale; this results that each existing firm will produce its modification of the product (the number of possible modifications of the product, therefore, is assumed to be large enough). Due to the consumers' desire to purchase all modifications of the goods, international trade will begin: modifications produced in the country will be exchanged for modifications produced abroad.

Another important “new trade theory” is J. Brander's oligopolistic trade model, also known as “the reciprocal dumping” model: each of the two countries has its

manufacturing firm and they interact as a Cournot duopoly. It would be more profitable for each firm to be a monopolist and serve only its market, but since collusion is impossible, they compete, and each of them will sell both in the domestic and foreign markets. This gives rise to counter flows of exports and imports of the same goods. Selling in a foreign market requires additional transportation costs, so the price of shipment abroad will be lower than the price of deliveries for domestic buyers.

In the twenty-first century, the so-called *new-new trade theories* began to appear. These theories seek to explain the following empirical facts: the small number of exporting firms compared to the number of all firms operating in the industry; the relatively large size and higher productivity of exporting firms; the increase in average labour productivity of industries after trade liberalization.

The model of heterogeneous firms by M. Melitz assumes that firms differ in terms of productivity. Every firm faces initial uncertainty about its performance after entering the industry. The firm's decision to export is made after it has learned about its productivity. The beginning of international trade will lead to the entry of the most efficient firms into the export market, some firms with a lower level of labour productivity will continue to produce products only for the domestic market, and the least efficient firms will leave the market. The redistribution of resources between firms will lead to an increase in labour productivity of the whole industry and will contribute to an increase in public welfare. This demonstrates the benefits of trade, which were not previously theoretically considered.

Another approach to accounting for the heterogeneity of firms in foreign trade was proposed by Andrew Bernard and his co-authors. They argue that transportation costs and imperfect Bertrand competition on the world market were added to Eaton-Kortum's probabilistic model of comparative advantages. As the result, less efficient firms will serve only the domestic market, while more efficient firms will win the international competition and increase in size. Recently, the theory of so-called granular comparative advantages has also been actively discussed. This concept is associated with the formation of advantages both at the industry level and at the level of large firms and can explain up to 20% of the sectoral variation in export intensity.

The development of international trade theories has come a long way in the last 400 years. New processes and phenomena observed in the world trade required new explanations and always received them. At the same time, theories became more complex and the methods they used improved.

3 Merchandise Trade

World trade in goods (merchandise trade) has traditionally been and continues to be the main form of international business. The volume of world trade is growing although at a low rate in the last decade and even dropped in 2019–2020 although it restored in 2021 up to \$22.3 trillion (\$19.5 trillion in 2018).

To a great extent, the growth of international trade reflects the restructuring of the economy and production as a result of globalization. As a result, in the 2000s global

value chains have become one of the backbone factors in the expansion of world trade, which led to the increasing involvement of countries in world trade. However, the dynamics of world merchandise trade are directly related to the growth of the world economy and “the new normal” with its low growth as well as its corona crisis impact on the dynamics of trade in goods.

3.1 World Merchandise Trade Dynamics

The first years of the new millennium were characterized by high growth rates in the world trade by all groups of countries, mainly due to the rise in prices. This was facilitated by the revival of business activity in many Asian countries, the rapid growth of industrial production in China and India, the rise in energy prices and the resulting growth in the economies of the exporting countries of mineral raw materials. Such dynamics continued until 2008 and were interrupted by the global economic crises of 2008–2009.

The low rates of restoring the previous dynamics of the world trade were stopped by the COVID-19 pandemic the damage of which was severe for the trade. Trade contracted more heavily in sectors with complex value chains, especially in the electronics and automotive sectors, where many businesses are involved in countries with poor epidemiological situation (Table 1).

According to UNCTAD, the forecast for 2022 still is uncertain. The strong growth in demand for goods in 2021 became mainly the result of several pandemic restrictions easing, as well as economic government support and sharp increases in the price of raw materials.

WTO economists reassess their projections for world trade over the next two years, following the escalation of conflict in Ukraine in February 2022 that has prompted several major consequences:

- the surge in prices for fuels and energy sources;
- global shifts in supply chains and logistic flows;
- re-shaping of value chains and international cooperation setups;
- risks of global food crisis.

The conflict has directly disrupted exports of crude oil, natural gas, grains, fertilizer and metals, pushing up energy, food and commodity prices. According to WTO, global merchandise trade volume is expected to grow 3.0% in 2022 (down from previous outlook of 4.7%) and 3.4% in 2023, but these figures may be subject to revision due to uncertainty about the future course of the conflict. The CIS region should see a 12.0% decline in imports and a 7.9% drop in GDP in 2022, but exports should grow by 4.9% as other countries continue to rely on Russian energy. Regional disparities may narrow due to weak import demand in Europe and Asia.

Table 1 Annual growth rates of the world merchandise trade by some countries and regions, 2000–2021, %

	2000–2010		2010–2015		2016		2017		2018		2019		2020		2021	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
World	9.0	8.8	1.6	1.6	-3.1	-3.1	10.6	11.0	10.2	10.2	-2.8	-2.8	-7.2	-7.2	26.3	26.0
Developed economies (OECD)	7.3	7.2	0.8	0.5	-1.7	-1.3	9.8	10.0	9.2	9.7	-3.0	-2.6	-8.3	-8.3	23.4	23.1
USA	5.0	4.6	3.3	3.3	-3.4	-2.8	6.6	7.0	7.6	8.5	-1.3	-1.8	-13.3	-13.3	23.1	22.0
EU 27	8.2	8.1	0.7	-0.5	0.8	0.3	10.0	11.7	9.6	11.4	-2.8	-3.6	-6.0	-6.0	21.0	25.3
UK	3.9	5.5	2.3	1.3	-11.8	1.1	7.3	0.7	10.3	4.9	-5.4	3.6	-13.2	-13.2	17.2	8.8
Japan	4.9	6.2	-4.1	-1.4	3.2	-6.2	8.3	10.6	5.7	11.4	-4.4	-3.7	-9.1	-11.9	17.9	21.0
Developing economies	12.3	12.3	2.8	3.5	-5.1	-5.9	11.7	12.6	11.5	11.1	-2.4	-2.8	-5.5	-8.1	30.1	30.4
China	20.3	20.0	7.6	3.8	-7.7	-5.5	7.9	16.1	9.9	15.8	0.5	-2.7	3.6	-0.6	29.9	30.1
India	18.2	21.1	3.4	2.4	-1.3	-8.2	13.1	24.4	8.5	14.3	-0.1	-5.5	-14.8	-23.2	43.1	53.4
South-Eastern economies	9.3	9.6	2.1	2.9	-2.0	-1.7	15.1	16.7	9.8	13.2	-1.6	-2.5	-2.7	-8.6	24.2	27.8
Least developed countries	15.9	14.4	0.1	7.9	-1.4	-6.5	19.4	10.9	15.0	11.3	-4.0	0.8	-6.1	-10.2	25.1	26.9

Source UNCTAD Handbook of Statistics 2021a, 2021b. <https://unctadstat.unctad.org>

3.2 Geographical Structure of the World Trade

During the first decade of the new century, the ratio of the leading participants in world trade remained virtually unchanged. Since 2010, the sharp growth of the Chinese economy has allowed it to rise to the top of the list of world exporters, well ahead of the United States (since 2012) which is one of the reasons for the new trade war between the United States and China.

The proliferation of regional and cross-regional trade agreements also became a geographical trend in the last two decades. Within regional clusters, trade liberalization is proceeding faster than within the entire global trading system. Some regional trade agreements go far beyond existing multilateral rules and cover capital movements, e-commerce and intellectual property rights, i.e., essential policy issues that need to be addressed in today's more interconnected markets.

The largest trading bloc is the EU (29.7% of the world exports in 2021). Although USMCA has a much lesser degree of market integration it is the second biggest block (12.4%). The third place is occupied by ASEAN (7.7%).

3.3 Merchandise Structure of the World Trade

Traditionally, the merchandise structure included three groups of goods: food products, products of the extractive industry and products of the manufacturing industry. In the modern economy, all three product groups are extremely differentiated and detailed and can be interpreted differently. OECD Working Party on Statistics of International Trade in Goods and Services classifies high-tech sectors in terms of R&D share in production. Based on the OECD classification, these shifts are illustrated in Table 2.

Persistent changes in the price of fuel, known as “oil price shocks” are the reflection of the instability of the global economy and politics. The first famous shock followed the formation of OPEC in the 1970s. In the 2000s, the sharp decline (from a peak of USD 147 in 2007 to USD 34 at the end of 2008) was due to the economic crisis. The economic recovery after the crisis was followed by an increase in demand (3.2% in 2010 and 7% in 2011). The further reduction of the share of fuel was explained by a drop in energy prices while increasing physical volume, primarily due to the Chinese economy. In 2015, another collapse of prices by 44% reflected the sanctions against Russia.

Despite some recovery in prices, the trade in minerals still lags behind the pre-crisis level but the world trade in agricultural commodities has grown at an extremely rapid pace since the beginning of the XXI century, driven by increased consumption and the emergence of new exporters from emerging markets. Trade in agro-food products has grown strongly over the last two decades, reaching almost 7% in real

Table 2 Groups of goods: technology intensity definition

High-technology industries: more than 7%	Medium-high-technology industries: 2–7%
Aircraft and spacecraft	Electrical machinery and apparatus
Pharmaceuticals	Motor vehicles, trailers and semi-trailers
Office, accounting and computing machinery	Chemicals excluding pharmaceuticals
Radio, TV and communications equipment	Railroad equipment and transport equipment, not elsewhere classified
Medical, precision and optical instruments	Machinery and equipment, not elsewhere classified
Medium-low-technology industries: 0.5–2%	Low-technology industries: less than 2%
Building and repairing ships and boats	Manufacturing, not elsewhere classified
Recycling rubber and plastics products	Wood, pulp, paper, paper products, printing and publishing
Coke, refined petroleum products and nuclear fuel	Food products, beverages and tobacco
Other non-metallic mineral products	Textiles, textile products, leather and footwear
Basic metals and fabricated metal products	

Source ISIC REV. 3 Technology Intensity Definition. Classification of manufacturing industries into categories based on R&D intensities. OECD Directorate for Science, Technology and Industry 7 July 2011 Economic Analysis and Statistics Division <https://www.oecd.org/sti/ind/48350231.pdf>

terms annually between 2001 and 2019. But agro-food trade isn't just increasing, it's becoming "global". A growing share of agro-food trade reflects the expansion of global agricultural and food processing value chains that are spread over several countries—linking agro-food sectors and other sectors of the economy from across the world.

Another recent trade development was the unexpected rise in metal prices in 2021 due to the increase in demand by almost 4%. The growth has been driven mainly by the EU and North America. According to the World Bank's Metals and Minerals Price Index has stabilized by the end of 2021 but remains more than 35 per cent higher than a year earlier (Table 3).

4 International Trade in Services

Despite the efforts of the WTO and other international organizations, statistics on international trade in services do not fully reflect all transactions in this area. Most countries collect data based on the Balance of Payments Methodology (BPM6), which does not fully take into account the sale of services by foreign branches of MNEs. Another accounting problem is the lack of data on indirect trade in services

Table 3 Merchandise structure of the world trade, %

	World Imports growth									
	1995	2005	2015	2019	2020	1995	2005	2015	2019	2020
All Products	100	100	100.0	100.0	100.0	100	100	100.0	100.0	100.0
Food and beverages (SITC groups 0 + 1 + 22 + 4)	9	6.5	5.9	6.1	9.1	9.1	6.7	7.9	8.0	9.0
Agricultural raw materials (SITC groups 2 – 22 – 27 – 28)	2.6	1.6	0.9	1.0	1.3	2.9	1.7	1.7	1.2	1.4
Ores and metals (SITC groups 27 + 28 + 68 + 667 + 971)	4.5	4.6	4.1	3.8	7.2	5	4.9	6.9	4.7	7.3
Mineral fuels, lubricants and related materials (SITC section 3)	7.3	14.1	4.8	4.5	8.6	7.2	13.4	10.3	9.6	8.8
Manufactured goods (SITC sections 5–8)	72.7	70.4	83.5	83.4	73.5	77.2	77.1	73.7	75.5	73.7

Source UNCTAD <https://unctadstat.unctad.org>

embodied in goods through global value chains (according to the TiVA database, such indirect trade in services accounts for about 34% of all EU goods trade).

Electronic Products: A Service or a Product?

The proliferation of global value chains, offshoring production processes and the development of information and communication technologies and electronic commerce have provoked the development of outsourcing services: the services previously provided within the company are purchased from foreign suppliers.

In the future, the key characteristic for the classification of products in international trade will be their classification as digital, but we need to have a clear understanding of what a particular product will relate to goods, services or intellectual property objects. What do we buy by listening to a music album on an online service: a product (digital embodiment of the record), a service (use of the service) or are we buying intellectual property rights? The absence of such a classification leads to a lack of uniform statistics on digital product trading, as well as contradictions in the regulatory approach.

Blinder, A. (2006). Offshoring: The Next Industrial Revolution, *Foreign Affairs*, 85(2).

But even incomplete data indicate a faster growth of world trade in services, the share of which in the total volume of world trade in goods and services increased from 15% in the 70 s to almost 25% in 2019, amounting to almost \$ 22 trillion in 2021 (Fig. 2).

The export of services is a major and, in some cases, the main part of exports for numerous countries. If the global average share of services in international trade in recent years has been slightly less than 25% (falling to 22% in 2020), then this

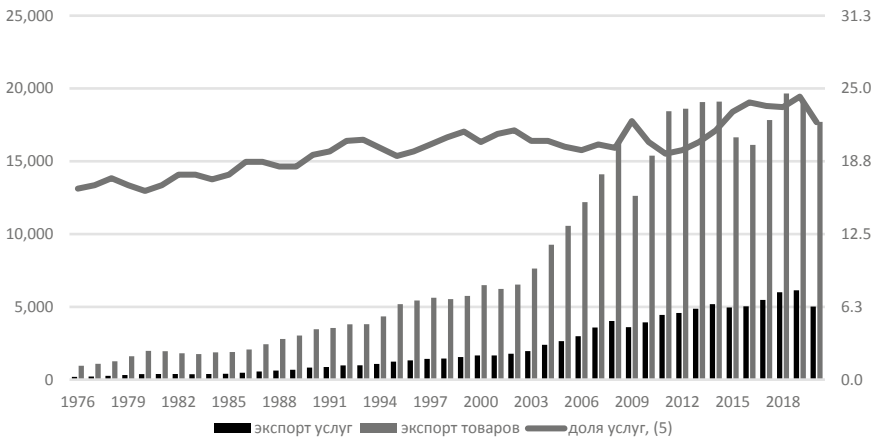


Fig. 2 World exports of goods and services, 1976–2020, \$ billion (Source Intracen www.tradem.ap.org)

Table 4 Structure of international trade in services, 2005–2021, %

Sector	2005	2015	2019	2021
Manufacturing services on physical inputs owned by others	2.2	1.8	2.0	2.0
Maintenance and repair services	1.2	1.5	1.7	1.7
Transport	22.0	18.2	16.8	19.4
Travel	26.6	24.4	23.8	10.0
Other commercial services	48.0	54.1	55.7	67.0
Construction	1.8	1.9	1.8	n/a
Insurance and pension services	2.5	2.5	2.2	n/a
Financial services	8.7	9.2	8.4	n/a
Charges for the use of intellectual property	6.5	6.7	6.9	n/a
Telecommunications, computer and information services	6.9	9.7	11.0	n/a
Other business services	20.1	22.1	22.7	n/a
Personal, cultural and recreational services	1.3	1.3	1.4	n/a
Services not allocated	0.1	0.4	0.5	n/a

Source WTO <https://stats.wto.org/>

figure has reached 33% in the United States, 46% in the UK, 51% in Israel, 58% in Ireland and more than 89% in Luxembourg (the highest ratio among developed economies). This indicator is traditionally high for the countries focussed on foreign tourism (for example, Maldives—90%, Cyprus—80%, Greece—42%, Georgia—38%, Egypt—36%, although these indicators have decreased in 2020). The leaders in trade in services are developed countries, among the emerging markets, only China and India are included in the list of the top 15 countries.

The structure of international trade in services is quite complex and diverse. The classifier of services compiled by UN experts (Central Product Classification) will contain over 500 items, and the WTO classifier includes about 160 types of services, although the balance of payments statistics is more aggregated (Table 4).

In recent decades, travel services have traditionally occupied the first place in the global export of services, which is due to a number of factors, such as an increase in household incomes, improvement of transport means and cheaper air transportation (air transport firmly occupies a leading position in passenger transport), an increase in the number and improvement of equipment of hotel enterprises, easing restrictions on the export of currency, as well as the rapid development of communications. Travel sector demonstrated a significant decrease due to pandemic restrictions and has not recovered yet.

The second major item in the global export of services since 2012 is business services, combining services in the field of research and development, consulting and advertising, as well as technical and trade-related services. This category of services demonstrates steady growth rates, its share in the total volume of trade in

services has increased by 7 percentage points since 2005. The main suppliers of business services in the world are the United States, whose share is almost 15%, as well as the UK, Germany and France. India and China occupy 5th and 6th places, respectively.

Transport services continue to occupy an important place in international trade in services. They combine two sub-positions—cargo transportation and passenger transportation. In terms of value, the leaders in the provision of transport services are the United States, Germany, Singapore and the leaders from less developed countries include China, the UAE, Turkey and Russia. A high share of income from transport in the structure of national exports of services is observed in some Central Asian countries (Tajikistan—75%, Kazakhstan—55%, Uzbekistan—45%) and Scandinavian countries (Denmark—50%, Norway—46%).

The main participants in international trade in services in general remain developed countries with great potential and opportunities for supplying the services in demand on the world market. The EU and the United States alone account for more than 60% of the total exports of services in the world (see Table 5). There was a positive balance of trade in services in almost 100 countries in 2020 and the leaders in the absolute size of the surplus in trade in services were the United States, Great Britain and Spain. But the negative balance in foreign trade in services does not exclude the presence of large exporters of services among net importers such as Germany, China, Ireland and Japan (all are among the top ten largest exporters of services).

Although according to forecasts (WTO, 2021), the share of developing countries in the export of services in the baseline scenario should remain at the level of 35% until 2038, the dynamics of other scenarios based on increased digitalization and trade liberalization demonstrates an increase in the share of these countries to 40%, based on the outpacing growth rates of education and skills of the workforce in these countries.

The main prospects for the development of international trade in services are related to the expansion of cross-border supply of services using digital means of communication and the Internet. The share of services delivered remotely is steadily growing, but further development faces obstacles of an infrastructural and regulatory nature.

The service sector in some cases becomes the engine of economic growth, but its development faces limitations from the development of ICT infrastructure, especially in developing countries. Broadband Internet and mobile communications coverage is a prerequisite for accelerated development of cross-border trade in services. A striking example is the field of telemedicine, where the key obstacle to the development of remote medical manipulations is the speed of network response.

Another barrier to development is the state policy on regulating the activities of certain sectors, competition rules, prudential regulation, etc., which do not have time to adapt to the needs of modern technology development and hinder their implementation as well as the expansion of trade in services.

Table 5 The share of the leading exporters and importers of services in 2005–2020, %

Country	Export of services					Import of services				
	2005	2011	2020	Change 2005–2020, p.p	Change 2005–2020, p.p	2005	2011	2020	Change 2005–2020, p.p	Change 2005–2020, p.p
USA	14.8	14.5	14.2	-0.6		USA	10.6	9.9	-2.5	
UK	9.7	7.5	6.9	-2.8		China	5.7	8.2	4.9	
Germany	6.5	5.6	6.3	-0.2		Germany	6.9	6.6	-1.7	
China	3.1	4.6	5.7	2.6		Ireland	2.8	6.4	3.5	
Ireland	2.2	2.4	5.3	3.1		France	4.7	5	-0.3	
France	6.1	5.3	4.9	-1.2		UK	4.7	4.4	-2.3	
India	2	3.1	4.1	2.1		Japan	4.1	4	-1.5	
Netherlands	3.6	3.1	3.8	0.2		Singapore	2.2	3.7	1.5	
Singapore	1.8	2.7	3.8	2		Netherlands	2.9	3.6	0.2	
Japan	4	3.2	3.2	-0.8		India	2.9	3.3	0.9	
Switzerland	2.7	2.6	2.3	-0.4		Belgium	2.1	2.5	0.4	
Belgium	2.3	2.4	2.3	0		Switzerland	2.2	2.5	0.3	
Spain	3.6	3	1.8	-1.8		Korea, Rep. of	2.4	2.2	-0.2	
Italy	3.6	2.5	1.8	-1.8		Italy	2.8	2	-1.8	
Hong Kong, SAR of PRC	1.9	2	1.3	-0.6		Canada	2.5	2	-0.6	

Source Intra Cen www.trademap.org

5 International E-Commerce

5.1 E-Commerce Concept

To OECD widely recognized definition of 2009, e-commerce is “the sale or purchase of goods or services, conducted over computer networks by methods specifically designed to receive or place of orders” (OECD 2002). However, it is not obligatory that payments and ultimate delivery are conducted online. Besides, under OECD definition, orders placed via fax, telephone or manually typed e-mail are not included in the scale of e-commerce. Nevertheless, the OECD definition is widely recognized. Among global players, that are using OECD definition in general or as a basis for their one, are national statistic services.

Another organization which contributed a lot to the e-commerce regulation and definition is the WTO. Its “Work Programme on E-Commerce” states that e-commerce is understood as “the production, distribution, marketing, sale or delivery of goods and services by electronic means” (WTO 1998). This definition is a wide one and may include several trade activities which are not covered by the OECD definition, especially in the context of trade in services. For example, the provision of Internet access services or electronic delivery of services.

Various definitions of e-commerce lead to some problems with the statistics of this commerce. As a result, in practice, a broader term is increasingly used in the global economy—*digital trade*. It covers digitally enabled transactions in goods and services that can be delivered digitally or physically which is in full compliance with the OECD definition but includes some cross-border transactions such as digital delivery of services with no connection to order method.

While traditional international trade in goods is understood as the import or export of goods by international trading companies, cross-border e-commerce implies that the consumer placed a product order in an online store and it will be delivered to the consumer from the seller’s country directly.

Depending on the commercial relationship between market players there are different types of transactions. The biggest share is represented by business-to-business (B2B). It is followed by business-to-government (B2G) transactions, including government procurement and business-to-consumer (B2C) operations which involve more and more consumers directly. The development of the global economy resulted in the emergence of new relationship models in e-commerce such as consumer-to-business (C2B) and peer-to-peer relationships between individuals.

5.2 E-Commerce Characteristics, Benefits and Challenges

E-commerce is based on both the technologies of the global network space (world wide web, WWW, including the Internet) and the historical electronic data interchange (EDI) which use a wide range of network languages (HTML, HTML5, XML)

deriving from the standard generalized markup language (SGML). When performing e-commerce, payments are made through electronic payment systems (including those made via mobile devices), while an immense amount of information is stored and processed using data storage systems, virtualization, cloud computing and Big Data processing technologies.

E-commerce brings many benefits to the participants of international trade in goods and services. At the same time, it brings a lot of challenges for them particularly numerous microeconomic risks. These risks and benefits apply to all kinds of market players whether it is a small company or an MNE with dozens of entities all over the world. Among the below-stated risks (challenges) the main ones are the data storage security (including personal data) and the protection of intellectual property (Table 6).

On the macroeconomic level, one of the major challenges is the divergence between developed and less developed economies with their scant adoption and poor use of e-commerce capabilities. In the last decade, only 9% of small companies and 16% of midsize companies in low-income countries sell online (World Bank, 2016). The numbers are even poorer if look into online payment systems adoption without which it is impossible to transact with the foreign consumer.

Table 6 Risks and benefits of e-commerce

E-commerce benefits	E-commerce risks
Improving access to information	Growth of information asymmetry gap
Global communication	Data storage security risks
Reducing costs and barriers to market access	Likelihood of restricting competition
Increased access of small and medium enterprises to foreign markets	Restraining innovative development
Exclusion of traditional intermediaries	Dependence on new intermediaries for the operation of e-commerce systems (providers of authentication and certification mechanisms etc.)
Enhancing the role of intellectual property as a global competitive advantage	The risk of infringement of intellectual property rights
Expansion of opportunities for outsourcing business processes	Unfair commercial practices and contract terms
More efficient inventory management	Online payment security
Optimization of supply chains	
Increasing returns to scale	
Increase in the efficiency of business transaction management	

Source systematized by the author

5.3 Trends, Scope and Structure of International E-Commerce

One of the most evident trends in e-commerce is the growth of transactions made with the use of smartphones (mobile commerce). The most significant market where mobile commerce increases dramatically is China. Another major trend is the following: in contrast to the initial stage of e-commerce formation mainly made among large companies building relations between each other (B2B sector), today's trend is the engagement of an increasing number of small and medium-sized companies, including an increase in the intensity of interaction in B2C sector. Both trends are reflected in the increasing scale and number of online global marketplaces (Amazon, eBay, Alibaba etc.).

Taking into account these trends and the growing share of Asian countries it can be estimated that worldwide e-commerce sales reach \$ 5 trillion in 2022. The dynamic development of e-commerce entails also an increasing number of alternative payments. According to estimates by 2025, instant payments and e-money payments will account for more than 25% of global non-cash transactions (14.5% in 2020).

Despite the above-mentioned trends in the development of the B2C sector, B2B still dominates in absolute figures. For example, manufacturing B2B sector of EU e-commerce on average accounts for more than 40% of total e-commerce. According to UNCTAD, in 2019 the share of the B2B sector in total US e-commerce was 87%. Some data on e-commerce in this and other countries are presented in Table 7.

Cross-border e-trade flows are now geographically concentrated within a few regions which are especially obvious in the B2C sector (see Table 8). This feature is mainly explained by the fact that countries in these regions are home countries for multinational companies specializing in or actively using digital technologies allowing to accelerate international e-commerce.

Cross-border e-commerce is concentrated between developed countries with an extraordinarily growing share of Asian Pacific countries, China in particular. West

Table 7 E-commerce sales by country, 2019

Country	E-commerce sales, \$ bn	B2B e-commerce sales, \$ bn	Share of B2B in total e-commerce sales, %	B2C e-commerce sales, \$ bn
USA	9580	8319	87	1261
Japan	3416	3238	95	178
China	2604	1065	41	1539
Korea, Rep. of	1302	1187	91	115
United Kingdom	885	633	72	251

Source UNCTAD. Global E-Commerce Jumps to \$26.7 Trillion, Covid-19 Boosts Online Retail Sales <https://unctad.org/press-material/global-e-commerce-jumps-267-trillion-covid-19-boosts-online-retail-sales>

Table 8 Cross-border B2C e-commerce in, \$ bn

Region	2014	2020	Average annual growth rate, %
Asia–Pacific	71	476	1.12
Western Europe	73	216	0.49
North America	67	176	0.44
Latin America	6	53	1.47
Eastern Europe	13	45	0.58
Middle East and Africa	5	26	0.87

Source Why Cross Border E-commerce is the Future of E-commerce. Accenture. <https://ecommerce-platforms.com/articles/cross-border-e-commerce-future-e-commerce>

Europe and North America are also the leaders in cross-border e-commerce due to superior digital infrastructure.

According to The World Customs Organization forecast (WCO 2021), more than 13% of global international trade in goods comes nowadays from e-commerce and more than 40% of it will come from Asia by 2025, the potential of Europe is estimated as 25% and North America is 20%. The rate of cross-border e-commerce is almost 2 times faster than domestic e-commerce although the domestic one still prevails in absolute figures. The main driver of such growth is China competing with the United States and EU.

According to the optimistic forecast, the average annual growth rate of cross-border e-commerce will vary in the range from 12 to 16% until 2030. Such dynamics will be possible due to several factors.

First, the consumers who want to buy a product that is either not available in their country at all or whose purchase conditions are less favourable in the domestic market will remain an important engine for the growth of cross-border e-commerce. The growing middle class in Asia's most dynamic economies along with overall income growth and purchasing power will continue to drive the growth of global e-commerce market. With the fastest growth in disposable income in the Asia–Pacific region and the shift in local consumer preferences towards premium goods produced by Western corporations this region will remain the most attractive for cross-border e-business.

Second, in combination with the indicated demand factors an important influence on the increase in the scale of cross-border e-commerce will continue to be exerted by the growing global price competition of sellers, which intensifies as the digitalization processes of national economies deepens especially in the Asia–Pacific region and the group of developing countries as a whole. The expansion of international payments methods along with the reduction of risks associated with their implementation will be another stimulating factor as well as the development and implementation of advanced technologies in the banking sector. The current trend of paying for cross-border purchases in national currencies or using alternative payment methods will continue.

In addition, in the context of the spread of technologies for collecting, processing and analysing big data and their use by both large and small and medium-sized businesses transaction costs are reduced as well as the time of cross-border delivery of goods. The problems of language barriers for cross-border e-commerce will also be less significant since the capabilities of online translation services are actively introduced into the hierarchy of the websites of companies oriented “to the world” and not to a separate regional or national market. In addition, digital platforms and such major market players as AliExpress, eBay, Amazon, Taobao, etc. will remain decisive for SMEs in the medium and long term period.

Another important factor in the growth of cross-border e-commerce in the future will be Internet penetration into the national economy and its accessibility to the population. This parameter is positively correlated with the number of smartphones and personal computers per thousand population which is already partly reflected in the high growth rate in the number of cross-border purchases made from mobile devices.

As a result, the development of cross-border e-commerce in the near future will continue to be fast.

6 Conclusions

- 1 The development of international trade theories has come a long way in the last 400 years. New processes and phenomena observed in the world trade required new explanations and always received them. At the same time, theories became more complex and the methods they used improved. If the traditional theories of foreign trade studied the comparative advantages of countries, and the “new theories” of the 1980s considered the characteristics of industries, then the focus of modern theories is already on the characteristics of the firms participating in international trade.
- 2 Global trade is generally dynamic, driven by globalization trends, however numerous political conflicts, outbreaks of protectionism, structural and cyclical crises as well as COVID-19 pandemic harm world trade and cause the volatility of world trade indicators.
- 3 The geographical and commodity structure of world trade are closely related. The competitiveness in modern economy and trade is much more than ever before and is determined by the level of economic development and capacity of the markets and companies, as well as the ability to offer better terms of trade. The commodity structure of world trade demonstrates a clear predominance of finished industrial goods in world exports, the share of raw materials and agricultural goods fluctuates depending on the level of prices for these goods.
- 4 Trade in services is growing faster than the trade in goods, and its share in total trade is steadily increasing, reaching 25%. However, this is an underestimated figure due to the imperfection of the existing methodology for collecting trade in services statistics. Developed countries retain their leading position as exporters

of services, only China and India managed to enter the top 15 world exporters of services.

- 5 E-commerce is a very dynamic sector of world trade. Cross-border e-commerce represents about 20% of global e-commerce and its share is growing rapidly. Pandemic significantly accelerated its development and at the same time exacerbated the existing challenges in cross-border e-commerce development. Among the most significant issues in question are logistics, intellectual property protection, data and online payment security. The geographical structure of cross-border e-commerce is represented by the European region, and North America while Asia and China, in particular, show the highest growth rates.

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Multilateral Trading System and Global Trade Regulation



Tatiana Isachenko and Ekaterina Arapova

Abstract This chapter focuses on the evolution, modern trends, and challenges facing the multilateral trading system. This is a complex set of basic principles of regulation and rules for application on a national and regional scale. The main global platform for negotiations is the WTO, the mechanism, goals, and objectives of which make it possible to organize and control the negotiation process on the global level. Special focus is placed on trade promotion measures as well as sanctions.

1 Introduction

In the course of a long evolution, trade policy has undergone significant transformations. At the present stage, it is a complex set of basic principles of regulation and rules for their application on a national, regional, and global scale. Trade policy negotiations reflect the main trends and problems of modern trade and are a dynamic process, involving not only executive authorities but also market entities and even public organizations. The main global platform for negotiations is the World Trade Organization, the mechanism, goals, and objectives of which make it possible to organize and control the negotiation process on a global level. Special focus is placed on trade promotion measures, as well as sanctions, which have become one of the most popular (albeit not always effective and somewhat controversial) tools.

2 Multilateral Trading System and Its Evolution

The modern multilateral trading system (multilateral system of trade regulation, MTS) is a set of rules and norms for international trade in goods, services, and intellectual property, formulated on the basis of national tradition and practice under

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the influence and with the participation of international economic organizations that largely influence the content of national regulatory norms.

The multilateral trading system (MTS), as it currently operates, is a complex set of principles, instruments, and institutions governing trade in all tangible and intangible factors of production. In this system, there are certain areas of cooperation (for example, FDI) that still need to be integrated into multilateral rule-making, while other rules need a serious upgrade.

The history of MTS dates back to 1947 when the General Agreement on Tariffs and Trade (GATT) was signed. Initially, the negotiating agenda focused on issues of tariff liberalization. During eight negotiating rounds, some of which lasted for years (such as the Tokyo and Uruguay rounds), a number of amendments were made to take into account the most pressing problems and trends in the development of international trade. The Tokyo and Uruguay rounds extended the provisions of the Agreement to new areas that went beyond just the tariff policy, significantly changed a number of articles of the GATT, and clarified the provisions of individual codes. An example of this was the constant revision of the Anti-Dumping Code, which resulted in the Agreement on the Application of Article VI of the GATT in its modern interpretation. A similar situation is typical for the regulation of subsidies: the original division of subsidies into direct subsidies (subsidies to the producer) and indirect subsidies (subsidies to the exporter) has lost its relevance in the context of the expansion of the scale of MNEs, and at present, the classification of subsidies is based on fundamentally different principles.

The development of the GATT and the increase in the number of its members¹ alongside the expansion of its competence has led to the need to revise the mechanism of the functioning of the system, which resulted in the creation of the WTO, which became an independent institution (while the GATT was a UN organization). The World Trade Organization (WTO), established in 1995, has replaced the GATT as the sole international body dealing with the global rules of trade between states. It is not a specialized agency, but it has mechanisms and practices for cooperation with the United Nations on certain issues of their competence: UNCTAD, UNIDO, UNESCO, and UN regional commissions, FAO, IMF, IBRD, as well as with regional organizations and integration blocs. Those changes in the MTS provided the ground for the change of the mechanism and creation of the organization instead of a set of agreements.

¹ If at the time of entry into force 22 states participated in the GATT, now 167 countries (customs territories) are members of the WTO, and another 22 countries are negotiating accession.

3 WTO as a Main Global Platform for Global Trade Regulation and Debates

Those changes in the MTS provided the ground for the change of the mechanism and the creation of the organization instead of a set of agreements. Currently, the WTO acts as a main element of the MTS and in fact determines the basis of the multilateral trade regulation.

In its nearly 30 years of existence, the WTO has also established itself as the core element of the MTS, the purpose of which is to maintain “trade discipline” and uphold key principles. The WTO is based on the following basic principles of trade regulation, inherited from the GATT:

- transparency, ensured through the regular publication of information on the trade regime, the notification (i.e., official notification of other countries) of all restrictive measures, and the conduct of trade policy reviews;
- predictability, through tariff binding as the main means of regulating market access;
- non-discrimination of imported goods and services on the basis of the most favored nation and national treatment;
- the principle of fair trade, which allows countries to take retaliatory measures in case of violation of WTO trade rules and damage to national producers;
- the promotion of development, which involves taking into account the specific interests of the least developed countries.

However, the WTO has a number of fundamental differences with the GATT: it is a permanent organization; its membership presupposes the obligatory application of all its principles and rules, as well as the implementation of all decisions of the WTO and its individual bodies; and the WTO rules cover all aspects of world trade and the existence of the universal Dispute Settlement Mechanism (DSM), allowing faster and more efficient resolution of trade disputes arising from the application of trade policy measures. Thus, the main goals of the WTO are:

- administration of multilateral trade agreements;
- providing a forum for negotiations;
- settlement of disputes;
- oversight of national trade policy;
- cooperation with other international bodies in the development of economic policy at the global level;
- assisting less developed economies to benefit from the global trading system.

Nevertheless, in the 2000s WTO mechanism clearly lagged behind reality, an example of which is the deepest and protracted crisis of the Doha round of negotiations (started in 2001 and not yet finished) within the WTO and the ongoing attempts to reform this organization. An extremely wide range of issues on the agenda, attempts to maintain the key principle set for the Doha Round—“nothing is decided until everything is decided”—as well as the principle of consensus has

come into conflict with the number and severity of the problems that arose during the negotiations and led to a systemic crisis. Almost for 10 years within the framework of WTO activities, practically not a single significant decision was made that enabled the expanded liberalization of trade. The only achievements were the signing of the Trade Facilitation Agreement and the agreement on the elimination of export subsidies, adopted at the Ministerial Conference in Nairobi in 2015.

In the current situation, the WTO is facing the risk of fragmentation of international trade rules due to the appearance of an increasing number and scope of regional and preferential trade agreements (RTAs and PTAs). Besides, the functioning of the WTO is also seriously influenced by contemporary political problems. The practice of recent years and the use of the sanctions tool have shown that all countries have interests that go beyond trade policy, and many of them use tough measures that are not military but allow them to toughly resist political opponents.

4 Trade Policy and Global Trade Regulation on a Country and Regional Level: Principal Instruments

The basis of the country's trade policy is represented by so-called autonomous measures (i.e., national legislation). At the same time, in many cases, countries tend to strengthen their position through the framework of regional and cross-regional trade agreements with special rules and preferences, and in some cases (e.g., the EU) to the formation of regional trade policy. Autonomous, regional, or bilateral measures depend on the multilateral rules, elaborated within the framework of the WTO in close cooperation with international financial organizations, economic organizations of the UN system, etc. In a multilateral trading system, a country's trade policy embodies the principles and commitments of the multilateral system that serve as a basis for its members' domestic trade policy.

Trade policy definition.

The country's trade policy is a system of state measures to promote domestic goods and services to the world market and to protect the domestic market from excessive competition from foreign products.

With the signing of the GATT in 1947, key principles such as the most favored nation treatment (MFN) and national treatment (NT) became "pillars" of the multilateral regulation.

In accordance with Article I of the GATT, the MFN allows the application of the same market access regime for similar products, services, and their suppliers, irrespective of their origin. For example, the imposition of higher customs duty for similar products from different WTO members is discrimination "in law". However, here are certain exceptions to the MFN: the traditional preferences for overseas

territories with special treatment; preferences for developing countries; cross-border trade, customs unions, and free trade zones.

The NT is enshrined in Article 3 of the GATT and supposes non-discrimination between domestic and foreign producers of goods and services, providing that goods and their suppliers are subject to the treatment no less favorably than that accorded to similar domestic services or service providers (for example, the similar internal taxation of domestic and foreign products or services). NT is of particular importance in trade in services, since many services are sold and consumed in the consumer market, and it is therefore important that each country treat the services and service providers of any other country no less favorably than domestic ones. However, the NT obligation is applied to the extent that a WTO member “has explicitly committed itself to grant...in respect of specific services sector...” (Van den Bosch & Zdouc 2017).

4.1 Trade Policy Instruments: Tariff Measures

All trade policy instruments are divided into tariff and non-tariff. Tariff measures are based on commitments set out in the lists of concessions for each WTO member, such tariffs are called “bound”. Bound tariffs are the maximum MFN tariff level for a given good. However, in trade practice, they are less and named “applied tariffs”. As the application of non-tariff measures, it is regulated under specific WTO agreements.

Tariff measures are the main trade policy instrument and include customs duties, customs procedures, and rules. As one of the principles of the WTO, it is established that the regulation of foreign trade should be carried out mainly by tariff methods due to their transparency and ease of regulation.

Customs duty is an indirect tax levied at the border on imported or, much less frequently, exported goods. Very often, they are called customs tariffs, although, in the strict sense of the term, customs tariffs are a systemized list of goods (with their customs duties) based on the Harmonized Commodity Description and Coding System (HS), aimed at the international uniformity of the goods classification and arranged in 6-digit codes under 97 chapters.

The import duties increase the price of imported goods within the country and at the same time are a source of budget revenue. In a number of countries with large raw material exports, export duties are used as a tool to withdraw natural rent from local exporters of raw materials. Export duties are of a pronounced fiscal nature.

The level of customs duties depends on many factors and national economic policy and does not remain unchanged. External factors include commodity market conditions, differences between the world and domestic prices, the existence of regional trade agreements, and progress in multilateral trade negotiations on tariff binding. Internal factors include the goals of national economic policy, the level of production of a particular product in the country, and international competitiveness.

Tariffs escalation:
 This is a higher import duty on semi-processed products than on raw materials, as well as an increase in duties as the degree of processing of goods increases. This practice protects domestic processing industries and discourages the development of processing activity in the countries where raw materials originate. For example, the EU market is characterized by the use of higher duties on imports of high-tech goods, while for developing countries, duties on these goods that are not produced domestically will lower or reach 0.

Customs tariffs are classified according to several criteria:

1. Purpose of the levy: fiscal (primarily to increase budget revenue) and protectionist (to protect the national market).
2. Object of the levy: import, export, and transit.
3. Method of calculation.

Customs tariffs: methods of calculation	Example
ad valorem tariff rate: charged as a percentage of the customs value of the imported or exported goods	5%
specific tariff rate: in monetary terms per unit of goods to be imported or exported	\$5 per 1 kg
compound or mixed tariff rate: a combination of two components—ad valorem and specific	10% + \$2 per Kg or 10% or \$2 per Kg

Because of their ease of use, ad valorem duties are the most common. On the other hand, the use of other types of duties provides more flexibility in the use of tariff controls.

4. Country of origin of the goods (depending on the trade regime)

Type of tariff	Trade regime towards a country of origin
Minimum rate	membership in the WTO or the existence of bilateral agreements based on the MFN
Maximum rate	absence of a contractual framework and, as a consequence, MFN
Preferential rate	preferential duties are generally very low (on imports of goods from developing countries, they are levied at 75% of the minimum duty), and on goods from the least developed countries they are generally zero

The bound tariffs in trade in agricultural commodities are usually the highest and are the most sensitive for all countries. At the same time, it should be noted that, in the conditions of modern competition, the importance of tariff measures has significantly decreased, and the weighted average level of tariff protection among the main participants in world trade is quite low (Table 1).

Table 1 Bound and applied tariffs for selected economies, 2021

	Simple average		Non-ad-valorem duties		Maximum duty		Number of distinct duty rates	
	Bound	MFN applied	Bound	MFN applied	Bound	MFN applied	Bound	MFN applied
China	15.7	13.8	0	0.3	65	65	40	39
USA	4.8	5.1	41.3	41.7	350	350	820	811
EU	11.6	11.2	31.7	32.3	319	200	1110	886
Japan	17.8	15.8	15.1	13.3	662	662	352	327

Source WTO (2021). World Tariff Profiles. Geneva

Trade policy instruments: non-tariff measures have been actively used since about the mid-1970s. They include various instruments of an economic and administrative nature, which are usually divided into the following groups:

- quantitative restrictions and similar specific limitations (import quotas, export limitations, licensing);
- price measures (anti-dumping duties, countervailing duties, and border and tax adjustments);
- government participation in trade, restrictive practices, and more general policies, such as subsidies, government procurement, tax policy, trade, and political measures to expand exports;
- customs procedures and administrative practices (customs valuation, rules of origin);
- technical barriers to trade, including safety and technical standards, health and sanitary-veterinary regulation, packaging, and labeling requirements.

In practice, non-tariff restrictions, such as customs and administrative import formalities, are of increasing importance. The most complex and controversial are the procedures for determining the customs value and the country of origin of goods.

The so-called “triad” of safeguard measures can be singled out as a special group of instruments of non-tariff measures—special safeguards, anti-dumping, and countervailing measures. They are applied if there is evidence of excessive imports, dumping, or subsidizing, causing serious or material injury (or threat of such injury) to domestic producers. According to the WTO rules, the procedure of implementation of such measures includes the investigation launched by the complainant (the country whose national producers were injured) and with the participation of the respondent (the country whose national producers are to be investigated).

A WTO country member may take a safeguard measure (i.e., temporarily restrict the quantity of imports) in order to protect a particular domestic industry from serious injury. Quantitative restrictions have always been available based on Articles XI (prohibited quantitative restrictions) and articles XIX and XX of the GATT, as well as the WTO Safeguard Agreement, which allows actions on imports in certain cases. This has opened up new opportunities and detailed rules for the application of special

Table 2 Subsidies classification

“Basket” of subsidies	Content
Red	prohibited types of financial support from the state (export subsidies and import substitution subsidies)
Yellow	permitted or actionable subsidies subject to the specificity criterion, hence can be retaliated against in the form of countervailing duties if they cause “serious injury” to the interests of another country
Green	allowed subsidies (R&D, regional support)
Blue	domestic support under the WTO Agreement on Agriculture

safeguards. Special protective measures are applied in the form of special duties or quotas (quantitative restrictions).

In the case of application of anti-dumping measures, it becomes necessary to define dumping, which is the supply of goods for export at a price below normal, i.e., ex-factory at the domestic market of the exporting country. WTO rules (i.e., the Anti-Dumping Agreement) define how governments may or may not respond to dumping and what is the procedure for investigating the application of these measures.

Similarly, the WTO Agreement on Subsidies and Countervailing Measures governs the use of subsidies and the actions countries can take to counter the effects of their use. For the purposes of countervailing duties application, the subsidy is defined as any financial contribution by the government; this may mean a direct transfer of funds, a potential transfer of funds or liabilities, foregone government revenue or the purchase of goods, or the provision of goods or services, other than general infrastructure.

In this respect, much work has been done within the framework of GATT/WTO, as a result of which all these subsidies have been grouped into three “baskets” (Table 2).

This classification applies primarily to manufactured goods. Traditionally, trade in agricultural goods has been divided into “yellow”, “green”, and “blue” boxes.

Technical and sanitary-veterinary measures are extremely difficult to assess and regulate. The relevant WTO agreements define the conditions for maximum transparency of these measures, but they still refer to the so-called “hidden” protectionism measures. The WTO recognizes the right of its members to take action to achieve legitimate policy objectives, such as protecting human health and safety or protecting the environment. The Agreement on Technical Barriers to Trade strongly encourages members to base their measures on international standards and ensure timely notification. The Agreement on Sanitary and Phytosanitary Measures is intended to ensure that strict regulations are not used as an excuse to protect domestic producers, which is usually very difficult to achieve.

Table 3 Trade in services: modes of delivery

Mode of delivery	Delivery method	Example
Cross-border supply (mode 1)	From the territory of one WTO member to the territory of another WTO member, the provider and consumer of the service are located on opposite sides of the border	Telecommunication services, postal services
Consumption abroad (mode 2)	Supply by moving a private consumer of a service or property to the country of the service producer	Tourism, ship repair
Commercial presence (mode 3)	Creation by the service provider of its branch or subsidiary in the country of the service provider	Corporations, commercial agencies, joint ventures
Movement of individuals (mode 4)	Provision of a service by sending an individual representative of the service producer to the country of the service consumer	Consultants, doctors, lawyers, translators

4.2 Trade Policy Instruments: Trade in Services

The largest and most dynamic component of the economy of both developed and less developed countries is services. Many services, traditionally considered to be a part of the domestic economy, are now increasingly traded internationally (for example, medical or legal services). For the purpose of regulation, WTO rules distinguish four modes of providing services (see Table 3).

The integration of trade in services in the Uruguay Round of trade negotiations led to the General Agreement on Trade in Services (GATS). The GATS is based on essentially the same goals and principles as the GATT: the creation of a sound and reliable system of rules for international trade; ensuring fair and equal treatment of all participants (principle of non-discrimination); stimulation of economic activity through guaranteed political ties; and promoting trade and development through gradual liberalization. GATS contains three blocks of rights and obligations:

- GATS itself; that is, the basic legal norms relating to all types of services (horizontal commitments), i.e., MFN and NT, including exemptions and gradual liberalization;
- sectoral commitments: the application of the basic principles in relation to certain sectoral types of services;
- specific commitments of WTO member countries in relation to certain types of services.

As a result, the GATS covers any action by a WTO member country in the form of laws, regulations, rules, procedures, decisions, and administrative actions taken at any level of government (federal, regional, and/or local) in the service sphere.

The main regimes of the GATS and GATT are similar, but they are not identical: restrictions are possible in trade in services, but they must be fixed in the list of commitments. Two types of restrictions are available:

- quantitative market access restrictions and conditions. These are limitations on the number of service providers, monopolies, and exclusive service providers, the requirement of economic feasibility, and the total cost of transactions. The requirement of economic feasibility limits the total number of transactions or the total volume of services produced, limits the total number of individuals employed in a particular service sector, restricts the form of presence of a legal entity, and restricts the participation of foreign capital. For example, in accordance with Mexican law, foreign direct investment in telecommunication services in the country is permitted up to 49% only in an enterprise;
- restrictions on the application of the NT. They are allowed if they do not change the conditions of competition, as well as in the case of the formation of an economic integration association if there is an interstate agreement on the integration of labor markets, or in the presence of an interstate agreement on the avoidance of double taxation. For instance, only lawyers with a Danish licence to practise and law firms registered in Denmark may own shares in a Danish law firm. Only lawyers with a Danish licence to practise may sit on the board or be part of the management of a Danish law firm.

5 Export Support Measures and Sanctions as Trade Policy Instruments

Export support includes measures provided by the government to boost export and promote diversification. Export support measures can be financial and non-financial.

Financial export measures include export subsidies, export credits, export credit guarantees and insurance programs, and special export incentives.

Export subsidies mean subsidies given to exporters to cover the difference between internal market prices and world market prices. They contribute to reducing the prices of national goods for foreign importers and result in the rising competitiveness of national export. During the WTO Nairobi Ministerial Conference in 2015, the WTO members decided to eliminate agricultural export subsidies. Developed countries agreed to remove export subsidies immediately (with the exception of a small number of agricultural products), while developing countries agreed on this by 2018. A longer transition period was provided for certain product categories, as well as for the poorest and food-import-dependent developing countries (WTO, 2018). Violation of existing rules can become a subject for the WTO dispute.

Sugar-Export Subsidies in India

In 2019 Brazil, Australia and Guatemala complained to the WTO against the Indian government for increases in its sugar subsidies, which resulted in lowering export prices for sugar and its increased production, outstripping domestic demand. Being the world's largest sugar producer after Brazil in 2018–2019, India provided federal and state-level assistance for the sugar industry accounting to more than 55 billion rupees (USD 730 million).

In December 2021, the panel made a decision that India violated the WTO Agreement on Agriculture when it provided excessive non-exempt product-specific subsidies to sugarcane producers between 2014 and 2019. According to the decision made, India must remove its illegal subsidies within 120 days of the adoption of the report.

Source WTO Dispute Settlement 580.

Export credit support and guarantees are another group of instruments for export promotion. It includes direct loans; interest rate subsidies; export credit guarantees; credit insurance for lenders.

Export financing is provided by export credit agencies (ECAs), which encourage the exports of goods and services by offering political and/or business risk insurance and a mix of insurance and lending activities. Examples of ECAs are the Export–Import Bank of the United States (EXIM Bank), UK Export Finance (UKEF) in the United Kingdom, Nippon Export and Investment Insurance (NEXI) and Japan Bank for International Cooperation (JBIC) in Japan, Sinosure (the China Export and Credit Insurance Corporation) and China Exim Bank (the Export–Import Bank of China), Banco Nacional de Comercio Exterior in Mexico, etc.

For export promotion, governments use a system of special export incentives, which provide exporters with incentives in various forms: relief from indirect taxes through bonded manufacturing arrangements, duty drawbacks, rebates or exemptions, tax holidays, tax rate reductions, or special benefits in calculating taxable income.

Export incentives can be provided through free trade zones as special areas specializing in manufacturing for export and offering free-trade conditions and a liberal regulatory environment for their resident firms.

Free Trade Zones in China

By late 2021, China had had 21 pilot free trade zones (FTZs) that cater to different industries and benefit from various types of incentives, such as reduced tax rates, expedited administrative procedures, and relaxed investment restrictions. In Shanghai, the FTZ was set up in 2013 to attract more foreign investment and to promote trade and regional integration. Companies registered within the boundaries of the Shanghai Free Trade Zone enjoy:

- Lower corporate tax rates between 15 and 9%;

- Import tax exemption until goods are moved out of the Zone (out of the warehouse);
- Free currency exchange rate (no fees for converting major currencies);
- A fast and streamlined customs clearance;
- A hub of transportation, pick and pack, and logistic service providers;
- Faster VAT refund.

Source FDI China Exclusive: The 21 Free Trade Zones Guide 2022 and China (Shanghai) Pilot Free Trade Zone official website. URL: <http://en.china-shftz.gov.cn/>

Non-financial export support measures include:

- export consulting and information support by specialized institutions (both within the country and on the basis of trade missions abroad);
- trade diplomacy (trade missions, delegations, and agencies that create a favorable image of the country, establish business contacts, support investment projects, lobbying the interests of national business);
- exhibitions' and fairs' support, assistance in establishing business contacts, and cooperation relations with foreign partners;
- technical support for export activities that may include exporters' training and other programs;
- education and training;
- monetary and currency policy for stimulating exports, since weak national currency ensures the price competitiveness of national exporters, thereby stimulating exports. This tool had been actively used by many less-developed countries.

From 1994 to 2005, China had pegged the RMB (renminbi, official currency of China (whereas yuan (CNY) is the unit of account in the economic and financial system inside the country)) to the dollar and kept the rate unchanged, providing high price competitiveness of its export. China's export to the world and the US had risen more than 4 times during 6 years from 2001 to 2007, and more than 5 times to the EU for the same period.

Such a policy raised concerns from China's major trading partners. Since 2003, the US Congress has introduced several currency bills addressing China's currency policy. In 2005, under international pressure, it moved to a managed peg system and allowed the currency to appreciate over the next years. However, the US Department of Commerce equalizes currency undervaluation to countervailing subsidy and applies regulations that allow it to impose countervailing duties on imports subsidized by manipulating exchange rates.

Source US Department of Commerce; Peterson Institute for International Economics (PIIE).

Trade sanctions are another modern specific tool for influencing international economic relations and global trade flows as well. They mean commercial and technological penalties and restrictions imposed by one initiating country (or a group of countries) against a target country, its economic sector, entities, or individuals.

Trade sanctions are:

- export restrictions: an embargo on the supply of arms and equipment (for example, the US embargo on the supply of equipment to Cuba, the EU embargo on the export of dual-use items, and the US ban on the supply of equipment and technologies for Russian oil and gas companies);

The US first embargo on the sale of arms to Cuba was imposed in 1958. In 1960, the US placed an embargo on exports except for food and medicine. Later, foreign subsidiaries of US companies were prevented from conducting trade with Cuba. The embargo was enforced mainly through the Trading with the Enemy Act of 1917, and a set of special regulations, such as the Cuban Assets Control Regulations of 1963, the Cuban Democracy Act of 1992, the Helms–Burton Act of 1996, and the Trade Sanctions Reform and Export Enhancement Act of 2000. The sanction regime was aimed at the democratization of the political regime and human rights protection. According to the Cuban government’s estimations, the cost of the sanctions amounted to a total of USD 933 billion over the 60-year period (or USD 134.5 billion at today’s prices). However, the embargo has not attained its principal political goal.

Sources Representaciones Diplomáticas de Cuba en el Exterior; US Department of the Treasury

- import restrictions, including bans on the import of certain product categories and/or services, as well as restricted trade regimes for products from target countries and their entities (for example, the US ban on import of many Iranian or Russian goods, Russia’s ban on certain agricultural products, raw materials, and foodstuffs originating from the European Union);
- technological restrictions, some of which are closely related to export ones and impeding access on target entities to the global technology market (in particular, the US and EU ban on the export of high-tech goods and technologies to Russia, or US restrictions against Chinese-based technology firms).

Although sanction regimes may use the same instruments (for instance, tariffs or non-tariff measures), trade sanctions differ from traditional instruments of foreign trade policy. Firstly, they are discriminatory, and do not apply to all trading partners, but only to target countries, or to companies or sectors of the targeted country. Secondly, they are used to further the initiators’ political goals, such as a change of

the political regime or behavior of the target country when the latter is perceived as a threat to the national interests and security of the former nation. Thirdly, trade sanctions are based on not only trade regulations but are adopted by special decisions and regulations on national security issues.

6 Conclusions

1. The modern multilateral trading system (MTS) is a set of rules and norms for international trade in goods, services, and intellectual property, formulated on the basis of national tradition and practice under the influence and with a participation of international economic organizations that largely influence the content of national regulatory norms.
2. A country's trade policy is a system of its state measures to promote domestic goods and services to the world market and to protect the domestic market from competition from foreign products. The legislative base of this policy is formed at several levels. The MTS rules are decisive for all countries, i.e., a system of measures and rules for regulating international trade in goods and services, embodied in the GATT/WTO set of documents.
3. Trade policy instruments are divided into tariff and non-tariff ones. Tariff measures are the main instrument of trade policy of all countries and represent a set of customs duties, customs procedures, and rules. Customs duties on imported goods are summarized in a customs tariff, which is a systematized list of goods with customs duty rates indicated on them depending on the country of origin of the goods, although this term is often used to refer to the customs duty for each individual product from this list).
4. Non-tariff measures include different instruments of an economic and administrative nature. The most frequently used, and with a clear legal basis, is the triad of measures to protect the internal market. In turn, technical and sanitary control measures are the most complex and can represent covert protectionism measures. At the same time, the most complex and controversial are the procedures for determining the customs value and the country of origin of goods.
5. Regulation in trade in services is based on the GATS rules. The most important factor in the choice of regulatory measures is the determination of the mode of delivery of services. Under the GATS, countries assume a set of commitments. The commitments under the GATS are divided into horizontal (i.e., covering all countries and service sectors) and specific ones (i.e., relating to market access and national treatment in certain sectors).
6. A special place in the system of foreign trade regulation measures is occupied by instruments of export support, that are governed by WTO and OECD rules. In addition to financial measures, there is a wide range of non-financial measures to provide effective support to exporters.

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World Markets of Goods and Services



Lilia Revenko 

Abstract A huge variety of goods and services are involved in world trade. They are distributed in the world commodity markets, which are complex structures that require special approaches to their study. That is why the chapter explores the main elements of the study of commodity markets. Also, it provides the general characteristics of certain types of markets as well as their specifics of pricing.

1 Introduction

The study of the trends occurring in the world markets of goods and services is a process that should precede the adoption of strategic economic and commercial decisions. Without studying the markets, one cannot optimize the economic activity of economic agents, or formulate an economic policy. The main tasks of studying any world market include determining its capacity, assessing the market factors and conditions, determining the vectors of changes in the main indicators and their intensity, identifying price dynamics and their real level, and assessing market requirements for consumer characteristics and quality of goods.

2 Typology of World Markets of Goods and Services

The global commodity market is understood in a broad sense as a system of relationships between sellers and buyers from different countries regarding the sale of a particular product, in a narrow sense—the point of regular transactions for the purchase and sale of these products. World commodity markets are characterized, not only by a complex, branched structure, but also by a multiplicity of objects and a wide range of participants. Dozens of thousands of items, each of which has various

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modifications, are distributed all over the world. Companies that differ in size, structure, form of ownership, and other indicators establish the relations in order to sell these goods. There is a complex system of interrelations between them that should be studied to successfully engage in foreign economic activity.

Different classifications are used to analyse global commodity markets. Markets are usually classified by commodity, that is, by the products sold, combining them into very large, basic (markets for machinery and equipment, mineral raw materials and fuel, agricultural and forest products) or differentiating them up to sub-items of the product code listing. The product range of large markets is extremely large, so they are usually divided into different groups, as, for example, is done in the machinery and equipment market. Researchers also use the classifications of commodity markets by territorial coverage (domestic, national, international, world), by differences in the nature of counterparty relationships (closed, open, preferential), etc. Depending on the goals and objectives of the study, these basic classifications can be supplemented by others; for example, by the method and channels of sale—to the markets of exchange and over-the-counter goods.

None of the existing classifications of commodity markets is universal, because it does not reflect all aspects of the seller-buyer interaction. The UN's Standard International Trade Classification (SITC) is most used in the world, since it allows one to present commodity items both in a detailed and in an enlarged form. In turn, a clear classification makes it possible to identify factors with varying degrees of detail; for example, the ones affecting the fuel and raw materials market as a whole, or only the coal market.

If we take the markets of machinery and equipment, technological classification is also applied. It assumes the division of all products from this group into subgroups according to the principle of performing a certain technological task. In recent years, this classification has been updated quite actively, for example, due to the products using artificial intelligence elements (industrial and service robotics group). The classification of commodity markets by the degree of knowledge intensity of products is also used, although the problem is the lack of a unified approach to structuring markets by the degree of knowledge intensity of goods and technologies. To do this, in practice, the OECD classification is most often used. It is based on the ratio of research and development costs to value added.

The use of various classification principles is explained by the multiple interactions of conjuncture-forming factors and the need to identify from this variety the dominant and secondary causes of market impact at each chronological stage (Keenan, 2020).

3 World Markets Analysis: Theories, Factors, Indicators

The process of the development and evolution of commodity markets is studied by the conjuncture, the foundations of which were laid at the end of the nineteenth century. The scientific understanding of why the situation on commodity markets changes

became a reality at the beginning of the twentieth century, when the works of C. Juglar, W. Röpke, W. C. Mitchell, J. Kitchin, J. A. Schumpeter became widespread. Of particular note were the works of N. D. Kondratiev, whose ideas and concepts were later developed by various economic schools. However, the variety of approaches to considering dynamic processes in commodity markets has given rise to many definitions of the concept of “conjuncture”, which was called “market situation” or “business situation” in a number of studies.

According to our definition, the conjuncture of the world commodity market *is* a state of interaction between economic agents of different countries regarding the sale of a particular product, which is determined primarily by the production process and manifests itself in a constant change in the ratio of supply, demand and the dynamics of world prices for goods. The conjuncture of the world market of any product is formed under the impact of many conditions and factors, which require their classification. It is diverse, as it considers the market situation from different angles.

Conjuncture-forming factors are understood as real driving forces that determine the vectors and pace of market development. By origin, the conjuncture factors are divided into macroeconomic, microeconomic, political, social, scientific and technological, environmental. They are also considered from the point of view of supply and demand.

The supply of goods on the market can be considered as a result of production activity; its factors are the scale, technological features and nature of production, the degree of utilizing production capacities, the portfolio of orders in the industry, the specifics of investment and investment lags in the creation of new and expansion of existing industries, the level of research and innovation, the state of labour resources, and the size and share of resources in all parts of the production and marketing process.

The aggregate demand for goods reflects the actual current needs of society plus the necessity of legal reserves, therefore, the main factors on the demand side are the amount of personal and industrial consumption, gross investment, investment lags and the rate of profit in consuming industries, the personal income level, the export volume and its pattern, the size and structure of resources, availability of substitute products and demand in their respective industries. For example, the appearance of composite materials on the world market as a substitute product for titanium and other types of alloys has significantly changed the market conditions of these goods, reducing the demand for them in high-tech branches of engineering: aerospace, automotive, medical equipment.

By belonging to the studied commodity market, conjuncture-forming factors are divided into endogenous (internal) and exogenous (external). Those factors that are formed within the commodity market and affect it will be considered endogenous.

No less important is the classification of factors according to the duration of their impact on the conjuncture. According to this principle, factors are divided into short term (from a few weeks to 1–1.5 years), medium term (up to 8–10 years), long term (over 8–10). One can also subdivide conjuncture-forming factors in commodity markets according to their relation to cycles. At the same time, one has to take into

account their cyclical nature, since a number of changes in the studied objects occur under the impact of major cycles (for example, fluctuations in the rate of fixed capital accumulation), others—due to the development of a medium-term cycle (change in inventories), some—due to the presence of specific production cycles in agricultural industries (one can increase the production of goods only after the time of cultivation or maturation of the product, determined by biological characteristics, has expired). On this basis, factors are divided into cyclical and non-cyclical.

In addition to these basic classifications of conjuncture-forming factors used in the analysis and forecasting of almost all commodity markets, there are others that serve the goals and objectives of the study of individual commodity sectors or groups of markets. Accordingly, each market has its own set of these industry factors, which are often called indicators. For example, if we take the world markets of crop production, the most important indicators are those of changes in acreage, yield, volume of products, the level of rolling stocks, the volume and structure of consumption, the size of freight rates, the prices for various types of products and their substitutes.

At the same time, market indicators reflect changes in both economic and non-economic factors (in agricultural markets, the latter includes the state of the weather, soil, physiological norms of food consumption, etc.).

The indicators of scientific and technological progress are of growing importance. For example, one cannot imagine a recent study of the agricultural goods market that would not analyse the impact of new products of agricultural biotechnologies—genetically modified organisms—on the resource sector. The result of such an impact was the stratification of agricultural production into three types of technological systems and, accordingly, the differentiation of the world market of agricultural goods into three sectors: traditional, genetically modified and environmentally friendly (organic).

At the same time, the indicators for the machinery and equipment markets should include the order portfolio, the product range, the geographical structure of production and consumption, the investment in the development of the production base, the utilization of production capacities and the state of the equipment maintenance services market.

In turn, the set of indicators of mineral raw materials and the fuel market should reflect the main supply factors and demand factors. The first group of factors includes the stance of technological progress in geological exploration and production, the current production level, the phase of the reproduction cycle, the reserves of producers, government and monopolistic regulation, inflationary processes, the transportation conditions of raw materials and natural conditions of production. In turn, the demand in the mineral raw materials and fuel markets depends on the following factors: the scale and structure of consumption, the situation with technological progress in consuming industries, the phase of the reproduction cycle, the financial solvency of companies, market regulation, replenishment of strategic reserves and consumer stocks. In addition, the most effective conjuncture-forming factors in the commodity markets at the beginning of the twenty-first century included the imbalance between the intensity of production and consumption of most goods,

an increase in the degree of liberalization in the core segments, and the growth of the speculative component (Garner, 2020).

The factors arising from the digitalization of the global economy have a dramatic effect on all markets of goods and services. End-to-end digital technologies change the nature of the production process and consumption, adjust the structure and amount of costs, the nature of the relationship of counterparties and actually transform the market.

We have to emphasize the holistic effect of these factors on the market situation, their complex system of interweaving and interdependence.

4 Basics of World Market Analysis

The study of commodity market conditions is usually divided into several main stages: determination of the object of research; selection, accumulation and processing of materials; analysis; forecast.

According to the scale, studies of the conjuncture of the world, regional or national commodity markets are distinguished; all of them are equally in demand in commercial practice. According to the depth of the study, the analysis and forecast can be short term (up to one or two years), medium term (up to ten years) and long term (over ten years). Such forecasts are carried out by both international organizations and analytical institutions of different levels.

At the second stage, the search, accumulation and processing of statistical and expert materials are carried out, as well as bringing them to a form convenient for analysis. This period of work is characterized by high labour intensity and relatively high time costs. In today's vast information flow, determining the necessary set of sources to work on market research is a rather complex process that requires certain skills. Besides, the problem of deteriorating in quality of information support with extremely high volumes of data flows is getting worse every year. It is increasingly difficult to choose and evaluate indicators, facts, opinions and judgements of experts to conduct a comprehensive analysis.

In this regard, we have, first, to classify information sources depending on the goals and objectives of the study on the basis of previously developed classification features. They are divided into primary and secondary according to the method of obtaining the data. The first can be obtained directly in the course of commercial activity from business partners or from documents on real transactions. But the main body of information is formed by secondary sources, which include statistical collections, reference books, scientific and business publications, books, monographs, materials of international organizations and national authorities, stock exchange analytics and others. Each group of sources has its own advantages and disadvantages.

After selecting the sources of information, one has to determine the range of indicators that characterize the object under study to the maximum extent. To quantify the market factors, all types of indicators that reflect the main market indicators—absolute (cost and natural), relative and indirect, are used. For example, changes in

the supply of personal computers on the market can be characterized in the number of units produced, in terms of production volumes (absolute indicators), in production indices or in growth rates (relative indicators). To characterize the supply of products with a long production life (for example, ships, aircraft), along with the above absolute and relative indicators, one can use such indirect indicators as the order portfolio and the degree of capacity utilization.

After the information available to the researcher is brought to a form convenient for studying the market, one can proceed to the analysis stage. This stage consists of three logical parts: the division of the entire set of factors and indicators into constituent elements; the determination of the strength and focus of the main conjuncture-forming factors; integration, interconnection of all factors into a single whole.

The overall structure of the finished product market review can be presented as follows:

- Introduction;
- Supply;
- Demand;
- Stocks;
- Trade (internal and external);
- Market regulation;
- Corporate structure;
- Prices;
- Forecast.

When market forecasting, several tasks are solved: determining the vectors of changes in the main indicators of the commodity market and the pace of such changes; identifying possible causes of the market transition from one state to another and the moment of transition, as well as assessing the impact of the general economic situation on the commodity market behaviour.

When market forecasting, one should consider the question of choosing the forecasting methods, of which there are several dozen. All methods of market forecasting are based on three main interrelated ways of obtaining information about the future: the transfer to the future of observed trends, the patterns of which development in the past and present are quite well known; the assessment of the probability of a possible or desirable future state of a phenomenon; and modelling of the predicted phenomena (Keenan, 2020). With a variety of individual forecasting techniques and methods, they can be combined into several groups, the main ones of which are trend extrapolation, economic and mathematical analysis, expert assessments and technical methods.

Extrapolative forecasting methods are based on the analysis of the object's dynamics in the retrospective period. Extrapolation includes determining a time series, a trend and a random component. This group of methods for forecasting commodity markets can be used in cases and situations when a set of conjuncture-forming factors does not undergo serious changes over a long period of time.

Economic and mathematical forecasting methods are increasingly used to determine the situation on commodity markets in the future. They imply identification and use of stable relationships between the indicators of the commodity market. However, the advantages of economic and mathematical forecasting methods can be offset due to selecting incorrect indicators of conjuncture-forming factors, and this is often the reason for the poor quality of forecasts.

Expert assessment methods (intuitive forecasting methods), which are divided into individual and collective (for example, the Delphi method, i.e., an anonymous survey of experts in several rounds), are very popular for forecasting commodity markets.

Technical (mechanistic, graphical) forecasting methods are widely used to predict prices in stock trading. In general, they are based on displaying the amplitude of price fluctuations using vertical segments indicating the price at the time of closing of the exchange, on a positional diagram of stock quotes, or on the moving averages of stock quotes.

In most cases, the priority is integrated use of several methods.

In market research, compliance of the market forecast with the necessary requirements is of fundamental importance.

Requirements for forecasting commodity market conditions

- Consistency
- Scientific validity
- Reliability
- Reproducibility and evidence
- Verifiability
- Discounting
- Alternative character
- Continuity
- Planned nature
- Selectivity of the base
- Similarity
- Clarity of wording.

Failure to comply with these basic requirements entails making incorrect decisions on selling goods in the domestic and foreign markets. Other reasons for errors in market forecasting include: underestimation of the conditionality of forecasts; contradiction between the requirements of accuracy and reliability, the complexity of the task and the depth of forecasting; insufficient elaboration of the theory used for making the forecast; complexity of the forecasting object; errors in the source data.

5 Pricing in International Trade

The commodity price is the most important indicator of the situation in a particular global commodity market, and one of the main tasks of studying this market behaviour is to determine it.

5.1 The Correlation of the Concepts of Conjuncture-Forming and Price-Forming Factors

The evidence from practice suggests that all conjuncture-forming factors affect the price of goods to one degree or another, but some of them do that directly (these are the first-order or fundamental factors), while others work indirectly (these are the factors of the second and subsequent orders). There are also some specific factors that affect the price at the micro level.

The price-forming factors of the first order include the average level of costs per production unit, the ratio of supply and demand, price regulation by the government and economic entities, and the monetary and fiscal situation. The factors of the second order are usually separate elements of first-order factors. For example, a change in wages in the automotive industry should affect the price of a car indirectly through unit costs. Specific price-forming factors include consumer and quality characteristics of the goods, basic terms of delivery, terms of shipment, delivery terms, payment terms, the nature of the counterparties' relationship. It is clear that all factors affect the market price comprehensively, being a part of the system.

5.2 The World Price and the Multiplicity of Prices

Of all the numerous types of prices that are formed at different stages of trade turnover, we should single out the world price. It is considered to be the foreign trade price at which separate import or export operations are carried out on a regular basis in the open sector of the commodity market, the payments for which are provided in a freely convertible currency. The world price may differ. Depending on the characteristics of the product, the most common types of world prices include stock quotes, auction prices, average export or import prices, reference prices, offer prices of large firms, and prices of actual transactions. For example, the world price for wheat will be the stock quotes of the New York and Kansas Commodity Exchanges, the world price for tea will be determined at international auctions in Coimbatore (India), Guangzhou (China), Mombasa (Kenya) and Colombo (Sri Lanka) (Table 1).

This means that one of the characteristic features of the world commodity market price is its multiplicity, understood as the presence in the same period of time with a similar conjuncture of different levels of prices for goods with the same qualitative

Table 1 Types of foreign trade prices that are considered as world prices for basic groups of world trade goods

Type of foreign trade price	Examples of products that are characterized by the specified method of price formation
Stock quotation	ferrous, non-ferrous, precious metals energy sources cereals, oilseeds, vegetable oils sugar
Auction price	tea furs flowers fish and seafood art objects
Bidding price	complete equipment complex investment objects
Reference prices of offers of large firms	products of the machine-technical group

characteristics. This price variance is based on specific price-forming factors. The real and imaginary multiplicity of prices creates methodological problems of practical choice of the world price, which are solved by identifying the basis of their formation in a particular commodity market. For example, with a certain variance in exchange prices for sugar, it is better for a buyer or seller from any country to focus on the indicators of the London Intercontinental Futures and Options Exchange, since the indicators of its main contract for this product, White Sugar No. 407, are more in line with the realities of most national markets.

5.3 *General Trends in Price Dynamics in the Twenty-First Century*

The world price development in the twenty-first century is affected by a new set of conditions and factors. Under their influence, the relations between the elements of the market mechanism and the amplitude of fluctuations in the main indicators, including prices, have changed significantly. This has made it possible to unite theoretical approaches to understanding pricing processes under the general concept of a “new normal”.

The need to assess the optimal prices situation in the raw materials markets for each stage of the global economy’s development is a permanent phenomenon that has developed since the era of the most severe commodity crises of the seventies. In this century, the need to determine the causes of sharp market fluctuation, and to assess the development vectors of raw materials markets is caused mainly by price shocks, i.e., rather sharp changes in the trend of prices (Russel, 2022). Attempts to comprehend the complexity of problems of commodity market price tendency

Table 2 Dynamics of the price indices for basic groups of world trade goods

Goods	2000	2005	2015 = 100			
			2010	2020	2021	04/2022
Fuel	61.8	118.3	149.7	78.7	146.2	234.6
Minerals, ores, metals	36.4	60.6	136.3	144.6	174.6	193.4
Agricultural raw materials	51.0	86.3	142.4	97.0	110.0	115.6
Food	58.2	68.2	114.0	100.0	129.9	159.3

Source (UNCTAD)

are being made at various expert levels. A meaningful analysis of the new norm (understood most often as a new price norm) of the commodity market is carried out, in particular, within the UNCTAD global forums on commodity trade.

The studies of the new normal in the commodity markets are conducted from different angles: through the prism of changes in the duration of investment cycles, identifying new technological realities, etc. The price indices for the main commodity groups show different dynamics (see Table 2).

For example, prices for agricultural goods are characterized by a number of features that determine the business conditions in the world markets for these goods. First, we have to emphasize the rental principle of pricing in agriculture, which is associated with the use of land as the main production resource. According to this principle, market prices are formed on the basis of the worst production conditions, and this determines the competitive conditions. Another feature of this market is the multiplicity of prices for similar goods in different regions of the world economy. In addition, the formation of prices for agricultural products is characterized by cyclicity and seasonality, increased instability and high amplitude of fluctuations, although price fluctuations for individual commodity groups usually differ by amplitude. Large-scale ups and downs in agricultural commodity prices are mitigated by the low elasticity of price for supply and demand. The price indicator for producers of agricultural food raw materials, which gives impetus to steadily reorient in the short term from the cultivation of some crops or the raise of livestock to others, is the ratio of price indices for technologically interchangeable production facilities.

There are calculated ratios of these indices in the agricultural market, indicating not so much the possible reorientation of producers to other goods, but rather the relative efficiency of individual commodity sectors in the short term. For example, the market efficiency of meat and dairy products production is largely determined by the price ratio for intensive livestock products and for grain and oilseed products, which are the most important feed constituents.

As for the machinery and equipment market, with the multidirectional impact of price-forming cyclical and non-cyclical factors, the general trend of price move for machinery and equipment at the beginning of the twenty-first century develops as a moderately upward trend being the continuation of the situation of the late twentieth century. The main reasons for this phenomenon may include an increase in the degree of both vertical and horizontal commodity diversification, the need

for continuously improving the product quality, which increases production and research and development costs, raises requirements for goods in terms of accuracy and productivity.

At the same time, the prices for individual product groups in this market fluctuate. A long-term trend in the price moves is the lowering of prices on standard mass-produced industrial and household products and an increase in the prices for unique, non-standard equipment. Increasing the seriality of equipment contributes to lowering the prices, as it affords opportunities to reduce costs and increase productivity. The price rise, in turn, is stimulated by government programmes to support certain industries, military orders and government programmes to participate in megaprojects.

The methods of determining prices on the machinery and equipment market vary depending on the product groups. Prices for mass-produced standard products are generally based on manufacturer's average costs and profit margins. Their main types are published reference prices and offer prices of the largest market operators. Since such information is published by companies, these prices are usually available to the parties not involved in the transaction.

Prices for non-standard and unique equipment are based on individual production costs and individual profit margins. To determine prices in these commodity markets, calculation methods are often used, i.e., of unit values, sliding prices and indices. Accordingly, the price variance is high. For example, the contract price of equipment with a long manufacturing period (large power equipment, aviation equipment, ships) is determined by a sliding price based on the following sliding formula:

$$P_1 = P_0 \times (A \times K_a + B \times K_b + C),$$

where P_1 is the contract price;

P_0 is the base price;

A is the share of materials in the price;

B is the share of wages in the price;

C is the proportion of permanent components;

K_a, K_b are the average values of the price rise coefficients for the respective elements over the period of price sliding.

In the aggregate, the use of this formula may look as follows. With the share of raw materials in the base price of the finished product at 40% and with an increase in the price for the sliding period by 10%, the price of the finished product in the final period will increase by 4%.

Active updating of the model range of machines and equipment implies the need to use appropriate methods of pricing new products. With all their diversity, we can single out a general principle in the example below:

$$P_n = P_1 \times Q_n + D,$$

where P_n is the price of a new product;

P_1 is the unit price according to the main parameter of the existing product on the market;

Q_n is a quantitative indicator of the main parameter of the new product;

D is the price change due to secondary properties of the new product.

For example, if the unit price of packaging equipment with a capacity of 100 conventional units per hour is \$300,000, the price for a more modern version of similar equipment will reach \$335,000 with an increase in capacity by 20 units and an addition of 5% to the base price due to an increase in the product's ergonomics.

In recent years, the trend of price dependence on the service sector has been very pronounced in some segments of the machinery and equipment market. For example, if we take the "mobile phone - service" system, the services of operators are playing the key role, i.e., the subscriber first chooses a communication company, and the phone becomes only a means of receiving the service. This has equalized the prices for this product, decreased their dispersion and stabilized the prices in commodity segments (except for the elite one).

When calculating prices for complete set of equipment, the cost of technological equipment, design and survey work, engineering and consulting services, construction and installation and other works are taken into account as the main elements. The main methods for calculating prices include the parametric one (based on mathematical models of the ratio of parameters of individual manufacturing lines and object prices) and the method of consolidated indicators (by average costs). Prices are also affected by the state of industries that consume equipment. For example, the introduction of digitalization elements in the agricultural sector of developed countries through the use of grain harvesters involved in the Internet of Things network decreased prices for previous-generation harvesters by 30–40%, and for seeders by 40–45%.

With the multidirectional impact of an increasing number of factors on commodity markets in the context of the constant development of all areas of technological progress, especially digitalization, we can witness a further deepening of price dispersion.

6 Conclusions

1. The world commodity market is, in a broad sense, a system of relationships between sellers and buyers from different countries regarding the sale of a particular product; in a narrow sense, a place where regular transactions for the purchase and sale of these products are carried out. The conjuncture of the world markets of goods and services is understood as the interaction between economic agents of different countries regarding the sale of a particular product in the context of constant changes in the ratio of supply, demand and the dynamics of world prices for this product. It is formed under the impact of general conditions and conjuncture-forming factors. The first—determine the development vector, the second—real changes.

2. From the methodical point of view, there are four stages of studying commodity markets. They are considered to be uniform, which allows a comprehensive analysis of the situation in the market. The established practice assumes the mandatory structure of the study including the following sections: supply, demand, stocks, trade, regulation, corporate structure, prices, forecast. Regulatory market research is expected to develop recommendations to economic entities on optimizing activities in the context of the current situation.
3. The current stage of development of the world commodity markets is characterized by a significant change in price proportions associated with the impact of both new general conditions and dynamically changing conjuncture-forming factors. In this regard, the concept of a “new normal” or “new norm” has emerged in the twenty-first century; it is especially applicable to commodity markets. New trends in the markets, including raw materials markets, are explained by the changes in the duration of investment cycles and technological and infrastructural realities. The general trend of pricing for all commodity markets also includes the strengthening impact of non-economic conditions and factors.

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Marketing in Global Business



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Abstract This chapter takes a close look at marketing in global business and the authors highlight the benefits, prospects and progressiveness of globalization and digitalization strategies in international marketing, global business and the external market environment. Modern features of the means of communications of global companies and new technologies for the formation of global brands are considered, forms of hybridization of marketing tools are determined, including phygital, omnichannel promotion and contactless sales across new digital frontiers and the implementation of the empirical concept in world trade activities.

1 Introduction

In the modern period, especially with the development of digitalization and empirical neuro-tools for marketing impact on consumers in global business, as well as in the context of Covid-19, there is a trend toward increasing the importance of marketing, which provides significant benefits as a result of the implementation of advanced technologies, the rapid growth of e-commerce and hybridization of marketing methods of work in global markets, combining real-life technologies with digital tools such as phygital and omnichannel systems in the promotion and advertising of goods and sales organizations.

This is largely facilitated by numerous environmental factors that form the global cumulative ecosystem. Differences in the needs and preferences of multi-local consumers are blurred. Global companies develop and implement effective technologies for creating global brands in order to form a high degree of loyalty on the part of consumers around the world.

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2 A Close Look at Marketing in Global Business

Companies seeking to expand and develop their business are interested in determining the best strategies to achieve their goals. This is connected primarily with the choice of strategic zones of management, its global vectors of development, which make it possible to ensure the efficiency of entrepreneurial activity and business globalization. Marketing has developed three main global strategies that ensure the expansion and development of business (Fig. 1).

They suggest:

- vertical and horizontal differentiation and business diversification;
- business expansion due to market segmentation and consumer groups;
- geographical expansion of business, including globalization.

Global business takes the international marketing concept (based on the three above mentioned strategies) for managing the international activities, focused on the needs of consumers in various countries and the formation of their preferences in accordance with the strategic goals of optimizing and expanding business on a global scale. International marketing defines marketing technologies in relation to international activities at the firm level, and primarily the largest MNEs when moving capital, goods and services across the borders of states, but also includes work on foreign markets of small and medium-sized firms.

International marketing is a way of thinking, a philosophy, a company's approach to business from international, global positions. It involves the possibility of finding and optimizing profits on a global scale, in the global market territory. In the modern

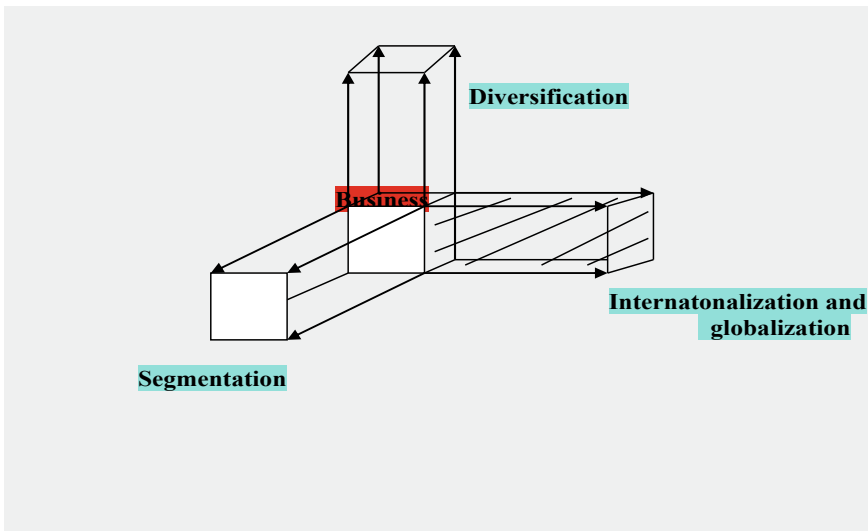


Fig. 1 Marketing main global strategies

era of globalization and digitalization, there is no separate national (local) marketing in its pure form, since its isolation is unthinkable from global trends.

Global business operates with two main strategies for conquering the global market space, increasing and expanding its market presence in various countries of the world with different types and systems of economy: the adaptation strategy and the standardization strategy. Their implementation makes it possible to fully satisfy the needs of consumers located in different parts of the world and receive the highest possible income, creating a solid foundation for further, promising business development on a global scale.

The standardization strategy improves the mechanisms for coordinating and integrating a firm's marketing methods at the international level, and activates the transfer and exchange of knowledge and experience in marketing between its foreign divisions located in different countries, which leads to the need to develop an optimal, globally oriented and unified marketing strategy, finding common features in the local demand of consumers in different countries, or ignoring them. In this case, the company's attention is focused on the issues of consolidation and integration of international and foreign economic activity, which determines the benefits due to the synergy of multilocal marketing activities.

The adaptation marketing strategy, on the contrary, sets the main goal of identifying and satisfying differences in consumer demand in individual countries and regions, which increases costs due to the individualization of marketing technologies in terms of product characteristics, methods and forms of their sales and promotion in a geographical and culture context, but allows to better meet the needs and preferences of local buyers.

In some cases, it is more profitable for firms to adapt a product for each country or regional market; in other cases, they offer one standardized product everywhere. In addition, for a number of products, companies compromise, a combined strategy, and "stop in the middle", that is, they implement a strategy of adaptive standardization or partially standardized adaptation. The manufacturer must then find the optimal balance between designing different types of products for each market, which would be prohibitively expensive, and designing one single product for all markets.

A number of companies develop the same product for all markets, regardless of existing local preferences. Companies like Kellogg have succeeded in changing consumption patterns in foreign countries. Kellogg shrugged off a study that found "breakfast cereal" to fail in France. Breakfast cereal was previously unknown in France, but with active marketing techniques, it has transformed French habits and now cornflakes with milk for breakfast is commonplace.

In contrast, The Coca-Cola Company is changing the taste of its non-alcoholic soft drink in accordance with the local preferences of foreign consumers. Thus, Coca-Cola in the United States tastes different from Coca-Cola in Great Britain, which, in turn, differs in taste and color from Coca-Cola in India.

The use of an intermediate strategy can be illustrated by an example from the innovation activity of the Japanese company Nissan. They understood that one

single car would not be able to appeal to consumers in all countries of the world, but did not want to bear the huge costs of implementing a strategy to adapt to the needs of consumers in different countries. Therefore, the company chose the way to reduce the number of different car chassis constructions from 40 to 8, designed for 75 car models of various national markets.

At the same time, it should be emphasized that targeting a scaled global segment of consumers in all countries of the world with common characteristics of demand and preferences is a highly effective and promising direction for the development of global business, requiring complex and highly competent marketing technologies.

Marketing is based on the philosophy and ideology of the marketing concept, in which we strive to identify and respond to the needs and wishes of target markets better than competitors, the concept of social marketing: when organizations find the optimal ratio of short-term consumer needs and the long-term well-being of society (Kotler et al., 2019).

At the same time, it is necessary to emphasize the specific characteristics of modern marketing, which create optimal prospects for the further development of global business. First of all, these are the processes of globalization and regionalization. Despite forecasts of a certain slowdown in globalization processes under the wave of economic protectionism and disunity of states during the pandemic, some of its transformation and the formation of a new model can be noted.

Advanced digital technologies and digital services are also becoming an increasingly active driving force in the development of marketing technologies for global businesses. Digital Integration, Industry 4.0, robotics and robotization includes the massive introduction of cyber-physical systems into production and management, fully automated and robotic processes, artificial intelligence, big data, virtual and augmented reality, the Internet-of-things, revolutionary achievements bio—and neuro-technology, 3D printers, artificial intelligence technologies and digital ecosystems significantly reduce marketing mix costs and increase the effect in the context of global marketing events.

The period of the COVID-19 pandemic additionally caused the active development of international e-commerce. For example, in the US e-commerce growth over the last three months of 2021 was equal to the growth in e-commerce sales over the previous ten years. The Chinese e-commerce company, Alibaba, in a short period of time, in its trading operations in the global business, has practically formed into a global trading conglomerate, resembling a Japanese *sogoshosha* general trading company (chapter “[Advanced Asian Economies](#)”).

At the same time, there is a hybridization of marketing technologies of companies in global markets due to the effective combination of digital methods with real-life methods—phygital, omnichannel, contactless trading—in the system of organizing sales and promotion and advertising.

The term phigital was first used by fashion designer Ermenegildo Zegna when he announced his fashion show at Milan Men's Fashion Week 2020. Phigital meant that with the pandemic in mind, his fashion show would take the form of pre-recorded films screened side by side with a real outdoor podium. Since then, the word has come to define the experience of simultaneously hybridizing Real Reality (IRL), Virtual and Augmented Reality (URL) marketing techniques with social media content.

Digital content and online active events have now become as important in global business as the physical traditional means of marketing promotion and are even more effective.

New unifying trends in the behavior and preferences of consumers in different countries are noted, which form the general characteristics of their demand, including through the cascade effect of empirical marketing tools, taking into account the increasing role of psychology, physiology and medical research on brain processes in the context of the formation of a system of motivational factors in building marketing technologies for influencing consumer behavior in the international marketing environment. The goal is to arouse positive fantasies, create feelings of happiness, joy, pleasure and social success associated with the consumption of the product. Buyers are not sold the goods themselves with their real properties, but with myths and legends.

Marketing directions related to the concept of sustainable development and protection of the environment have great potential in the development of global business, which structures the commonality of requests and preferences of consumers around the world. The global business of global companies implements international marketing strategies of various content, using a whole range of modern market technologies and measures of intensive influence on the consciousness and subconsciousness of consumers in various countries of the world in order to develop the ecosystem of the global marketing space.

3 Modern Trends in the Global Marketing Environment

Companies operate in a global market environment that can facilitate and limit stated goals and objectives. Carrying out marketing activities in international business is very difficult since the firm, focusing on the overall increase in revenue and customer base, operates in a completely uncertain environment, subject to rapid changes, with different economic and market conditions. The marketing environment comprises the external macro- and microenvironment of the company (Fig. 2).

The marketing macroenvironment is a set of factors and trends outside the firm that affect its ability to meet customer needs. The macroenvironment of a firm is strongly influenced by three phenomena: globalization, the digital revolution and the emergence of new social values. Globalization has led to a more integrated world in which

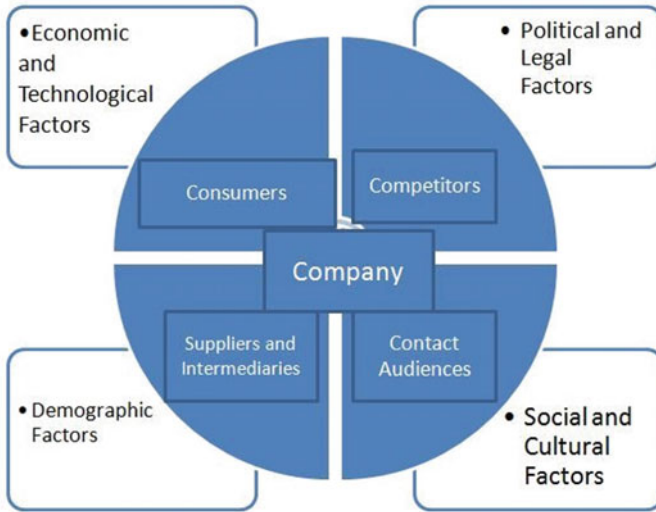


Fig. 2 Marketing external macro- and microenvironment

goods, services and resources are exchanged in addition to information, culture and social ideas. New transportation and communication technologies, liberalization of international trade and economic policy, and the opening of substantial new markets created a radically new global business landscape. Cultural globalization has led to the formation of global consumption habits and standards. In an increasingly integrated global economy, companies must internalize their operations to attract new customers, expand their client base and use outsourcing and global value chains to gain leadership and profit.

The external macro environment includes the following factors: competition and the economy, government regulation, scientific and technical, demographic, natural-geographical and environmental, political, legal, cultural and social, lifestyle.

Among the most critical factors of the external macroenvironment are:

- *Demographic factor* is of vital importance. Overall population, its growth rates and composition, gender and age, density, birth rate and average life expectancy, aging and migration, level of urbanization, income disparity and family characteristics all determine many marketing aspects.

The global population in December 2021 reached 7.9 billion people. In the meantime, extreme global poverty during the past 40 years has diminished from 42.7% in 1981 to 10.1% in 2015. Growth in emerging markets and a more diverse audience characterize today’s consumers. More than a billion new middle-class consumers will appear in China, India and Indonesia by 2035. In terms of age, millennials are

currently the essential consumer age group. In 2020, millennials accounted for just over 40% of the world's adult population. By 2030, that percentage will drop to just under 37% when Gen Z begins to come of age.

- *The economic factor* includes all the aspects considered when doing business in any country. The economic factor is determined by GDP volume and GDP per capita, dynamics of growth and structure of the economy, investment and savings, credit facilities and currency rate, infrastructure and the availability of raw materials and labor. Accounting and tax issues, price and cost structure, the role of the public sector and monetary policy are essential. The level of development of countries primarily determines the peculiarities of the financial challenges and opportunities;
- *Political factor*. This factor includes the type of policy realized, political stability or its lack, governmental plans and programs of the leading parties and economic and business regulations prevailing in the economy. Country tensions and uncertainty in international relations are severe challenges and threats for business. While doing business in other countries, companies should consider the government's relationship with business and the risks of the economic and political environment, corruption, political instability and the threat of changes in rules and policies;
- *Environmental issues, sustainable development and responsible consumption*. Climate agenda, social responsibility and environmental problems are becoming critical aspects of relations with customers. Decarbonizing the supply chain is important, but forward-thinking companies are looking beyond the supply chain to increase the resilience of all business operations. Sustainability, the ability to adapt and survive in the long term, becomes the focus of marketing activities;
- *Technological factors* are determined by technological progress and innovations in different fields. They are associated with R&D investment, development of new technologies, the number of researchers and patents received, innovations activity of the firms and advancement in production methods. Technologies are becoming more complex, efficient and cheap, and more and more associated with digitalization, changing the face of the economy and every person's daily life—smartphones, smartwatches and smart TVs are already commonplace. The Internet-of-things (IoT) is becoming an essential technology; robots and artificial intelligence systems are increasingly being used to perform tasks that humans previously performed;
- *Cultural environment*. Culture in any country refers to the beliefs and values held in that country. Factors such as language, history, background, educational level, the customers' propensity to save and spend, resistance to change, people's attitude to life and social values, religious traditions, cultural differences, languages, social norms and lifestyle as well as online behavior have an increasing influence on marketing (see chapter "[Business Cultures in International Business](#)"). The difference in cultures and languages around the world is a severe problem. A firm needs to know and consider all cultural values and norms in marketing, such as

verbal and non-verbal communication traditions, greetings, body language and handshake;

- *The legal environment* of each country is different. Along with continental and Anglo-Saxon law systems dominating the civil legal sphere, Islamic law is applied to business in several countries. The firm must completely understand the country's local laws and regulations. From tax consequences to trade regulations—legal requirements are different for each country.

The firm's external environment is increasingly determined by global trends, mainly because marketing is becoming digital and shifting primarily to the Internet.

Modern consumers are more demanding than ever when choosing brands and looking for a more constructive relationship. Mainly it is due to market saturation, choices, and the expansion of digital marketing that allows people to connect with brands far beyond their geographic region. An integrated online, offline customer experience is becoming the norm. Brands must deliver unique and engaging customer experiences with good service to compete successfully. Customers today base their brand loyalty on the experience it provides more than anything else. Artificial intelligence, machine learning and augmented/virtual reality technologies make customer service smarter, faster and more efficient. Firms tend to implement bots in marketing to establish one-to-one real-time communication between customers and those who sell to them. Along with increasing personalized customer service, geolocation data is used in marketing. Geolocation marketing is 20 times more effective than traditional advertising because it personalizes marketing costs.

Social commerce is becoming the main form of shopping and will grow in the coming years. Brands increasingly leverage influencer marketing, create ads that fit seamlessly into social media channels and integrate their e-commerce platforms with social media channels. Instagram and Tik Tok have been particularly influential in driving the social commerce trend.

The microenvironment of a firm represents the organizations and individuals that interact directly with the firm and includes consumers, competitors, intermediaries, suppliers and contact audiences. Consumers are mainly the buyers who further consume the bought goods and services. Competitors are the companies producing similar products and services and competing for the market share. Suppliers are the firms delivering necessary products, raw materials, parts and modules, connected with the company via supply chains which today, for many firms, convert into global value chains. The contact audiences are the organizations and social groups that are not direct business parties but have a tremendous indirect impact on achieving the firm's goals, i.e., financial sector, mass media, state organizations, local and municipal authorities and social organizations.

4 Omnichannel Promotion Policy of Global Companies

The omnichannel approach to interacting with consumers is increasingly used in the commercial activity of global companies. In order to create a unified brand image and a consistent brand experience, firms integrate both physical distribution and communication channels as offline stores, and digital platforms such as websites or mobile applications. The main feature of the omnichannel approach is that the consumer data is not stored separately for each channel; on the contrary, the manufacturer forms a global unified management system for all channels through which the interaction with the consumer is carried out.

Traditional retailers try to synchronize their physical and digital tools in order to offer consumers a transparent experience at every step of purchase, creating enormous opportunities for personalizing offers and self-realization of consumers and attracting them to points of sale.

The omnichannel communication has come from the new model of consumers behavior: they make purchases online, in-stores and in marketplaces, from traditional retailers and independent digital brands or from a combination of the two, such as “buy online and pick up in store”.

Thanks to online channels, modern consumers have more options than ever and expect information in real-time. Omnichannel marketing enables them to engage with brands on their own terms, leading to a better customer experience overall.

While benefitting from the omnichannel strategies a wide variety of companies actively use this approach—healthcare, retail, finance, techno, etc.

Amazon's executives know that physical points of sale offer something that even the most robust online shopping platform cannot: an innovative and memorable experience. This is why Amazon has started opening a multitude of stores, beginning with grocery and book stores. These serve as showcases where buyers can browse and interact with products in person. The Amazon Go convenience store concept uses weight sensor technology integrated in each shelf to track items when they are taken and put in the customer's basket. With this technology, customers are automatically billed when they have finished shopping.

The *Starbucks* app is frequently mentioned in lists of companies that have excelled in the area of omnichannel retail. The brand offers a transparent user experience in all channels. Customers can check their balance and recharge their card using their phone, the website or when they are in a shop. All changes to the balance or customer profile are updated in real-time on all channels (web and mobile app). Consumers can pay anywhere and via any device. Furthermore, all rewards are automatically taken into account, with no action required from the user: customers can choose how to pay—by using a gift card or their smartphone.

Nike has deployed an omnichannel retail system that fully integrates its stores into its online strategy in terms of design and functionality. Customers can make purchases from any channel (online, in-store or via mobile) and order products for delivery anywhere.

Harvard Business Review studied 46,000 customers to assess the impact of omnichannel commerce on their experience: they revealed—7% purchased exclusively online, about 20% purchased exclusively in-stores and 73% used several channels. In the survey it is concluded that companies with omnichannel customer engagement strategies keep 89% of their customers on average, compared with 33% for companies with poor omnichannel engagement.¹

The omnichannel approach ensures the companies definitely benefit in favor if the consumer receives:

- a consistent, recognizable brand image that simplifies brand recognition;
- personalized offers based on previous specific requests;
- content recognized by previous interactions, which increases the consumers' intention to interact with branded content across different channels.

Strategically, the omnichannel approach is very like multichannel concepts based on engaging consumers across multiple platforms. But the difference is that multichannel looks at a specific channel and how the transaction will be completed there. Alternatively, omnichannel considers how to create the best experience as consumers move between different channels. Every interaction is a touchpoint along the path leading to a purchase. Moreover, the omnichannel approach enables a consumer-centric approach.

Multichannel is much simpler in its intention, which is to distribute content and advertisements across various channels. A multichannel strategy makes companies available to consumers online, in print, in-store, etc. The consumer can choose where they want to interact with the brand; however, content and engagements within these various channels are often very siloed. With this in mind, multichannel is more reflective of operations, reaching as many channels as appropriate, while omnichannel is more reflective of the overall customer experience.

5 Global Communications and Branding

The modern media and communication industry is a highly intelligent and high-tech sector of the world economy. It is one of the most dynamically developing sectors: according to surveys, more than 50% of transactions in the startup market are in media and communications.²

The structure of global communications is characterized by a wide variety of actors pursuing multilateral interests: manufacturers and advertisers, media companies, advertising producers and distributors, advertising buying and selling agencies, research companies, and different types of consumers which are determined by the omnichannel approach in the development of the global industry as a whole.

¹ <https://www.sqli.com/int-en/insights-news/blog/store-heart-omnichannel-approach>.

² https://www.rvc.ru/upload/iblock/986/201309_media.pdf.

To ensure effective integration into the global competitive environment, modern businesses implement strategies and operations based on the key priorities of principles:

- *Analysis of the external environment*: in fast-growing segments any change can be critical to the success of a business. So, the players should keep a close eye on technology developments, regulatory innovations and the emergence of competitors with innovative business models;
- *Transformation of business models*: traditional companies go digital and develop new products of their own, while digital platforms have to think about producing their own content;
- *Expansion of competencies*: building a loyal customer audience requires a business to constantly stay in touch with their customers by the formatting of a whole system of products and services that meet any customer needs where business diversification contributes to its sustainability in the long term;
- *Personal focus*: in the context of increasing competition for the time and money of consumers, and approximately when the same quality of goods and services are on offer, a strong brand and individual approach becomes the key criteria for the audience's choice. Customers expect the service interface and the content itself to be as personalized as possible based on the preferences and consumption patterns of each individual;
- *A personalized approach*: new ways of collecting data about consumers provided by digital technologies has become a serious competitive advantage, which makes it possible to predict the desires of each consumer. It helps not only to effectively "recruit" a new audience, but also, and more importantly, to retain and strengthen the loyalty of the existing user base.

Global communications in a broad sense are a system of means and channels of information transmission that are used to reach and communicate with consumers. Communications allow companies to manage a unique set of attributes that make up a brand.

In a wider content, the brand is considered as a name, a term, a sign, a symbol, a design or a combination thereof designed to identify the goods or services of a single manufacturer or group of manufacturers as well as the differences between their goods and services from competitors' products and services.

A special perception of the brand is formed through a system of relationships with consumers, in which each individual message coming from a manufacturer, product or brand complements or refines other communications in a certain way, creating a single holistic image.

This concept of branding is mainly used by modern companies due to their highly diversified businesses and the high level of social responsibility usually required. Currently, rapid technologic development of the companies has reoriented the business to the competition between brands, the strengthening of which provides companies with significant advantages in the B2B market as well as B2C.

Global brands are important components of companies' activities, peculiar symbols of production and commercial activity which symbolize trust, stability and corporate responsibility as a certain set of expectations for consumers. Brands occupy a solid place in their minds, evoking a single set of associations and a holistic image: *Gucci* for luxury, quality, high cost; *Yandex* for search, services, information, yellow and red; *Lay's*—crunch, potatoes; *Coca-Cola* is a holiday, sweetness, classic; *Chanel* for pleasant fragrance and France.

The overwhelming number of associations directly depends on the quality of the product or service. Words, visualization, colors, emotions, sometimes even smells—all these are the associations that a person has when thinking about a brand. In most cases, the same brands evoke the same associations in people—brands are an important part of all corporate cultures across borders.

To simplify understanding of the holistic concept and to make it easier to grasp, the brand is quite often equated with the more tangible marketing communications elements that are used to support it—advertising, logos, taglines, jingles—but in fact a brand is more than this and realized by “5P” marketing complex (product, price, people, place, promotion) as well as total perceptions about the product, service or business (everything which consumer can see, hear, read, know, feel, think, etc.). A brand holds a distinctive position in customers' minds based on past experiences, associations and future expectations. A brand is a short-cut of attributes, benefits, beliefs and values that differentiate, reduce complexity and simplify the decision-making process.

Whereas traditional marketing aims to continually increase consumption, advanced companies and sustainability marketing seek to meet demand in a way that enhances public goods and conserves and enhances natural resources for future generations. In the context of the concept of sustainability, sustainability marketing aims to a balance between economic benefits and benefits for society and nature. At the same time, the very process of creating and distributing messages must also comply with the requirements of the concept of sustainable development.

The importance of sustainability marketing is demonstrated primarily by consumer demand. 91% of *Dentsu* and *Microsoft* Advertising joint survey respondents want brands to demonstrate more clearly that they are making positive environmental and planetary choices. And more than a third of respondents (77%) say that in the coming 5 years they will buy only responsible and “green” brands.³ In fact, there are different approaches to communications in the area of sustainable development and the ESG-branding concept with the most used topics being COVID-19, ecology, social communications and help for animals.

³ <https://www.dentsu.com/news-releases/the-rise-of-sustainable-media-global-release>.

Global businesses operate in both markets—industrial and final consumption—while differing in the content of communications in connection with tools and methods required by the target groups.

As stated before, branding is the marketing activity for creating a long-term preference for a product based on a joint enhanced effect on all elements of integrated brand communications.

Integrated brand communications are a combination of forms and methods of creating and developing a brand image including mass-media advertising, PR, sales promotion and direct marketing where each element solves certain tasks:

- advertising provides brand awareness and forms its image;
- public relations create reputation and favorable public attitude toward its brands;
- sales promotion encourages consumers to make a purchase;
- personal sales and direct marketing methods form brand loyalty and establish long-term relationships with target consumer segments.

Brand-communication campaigns include various activities carried out in the field of ATL (above-the-line), BTL (below-the-line) and TTL (through-the-line).

ATL-communications (or mass media) include direct advertising in the media, television and radio spots, advertising modules in printed publications and the placement of advertisements on outdoor carriers, as well as advertisements on the Internet.

BTL-technologies include all models and tools of establishing indirect communication with the consumer. They cover all forms of advertising and information activities carried out by public relations methods (PR), sales promotion (SP) and direct marketing (DM). Stimulation of sales is short-term and maximally “brings the product closer to the consumer”; the effect of stimulating measures comes faster than from advertising. Advertising covers a much larger audience, but the stimulation creates a stronger attachment to the brand and quickly shapes a positive image of the company.

TTL—communications have emerged from a common group of communication tools due to their integrated impact and the integration of multi-directional communication tools. They include all advertising and communication activities that contain both ATL- and BTL-events, thus forming a special field for the consumer’s relationship with the brand. It includes various events, sponsorship, the placement of brands in artwork and other forms of communication.

Currently, firms are actively pursuing a global brand policy of maintaining corporate identity, aimed at strengthening the corporate component in branding and building a sustainable reputation as a leader in the category.

And finally, the presence of common interests among partner firms contributes to the unification of mutual efforts to achieve goals in global branding.

6 Conclusions

1. Marketing defines a progressive line for the effective development of the global business of international companies through the development and implementation of strategies and tools to expand the market space on a global scale.
2. The COVID-2019 pandemic has transformed the needs, preferences and behavior of consumers in various countries and has made significant changes in international marketing approaches, defining the vectors of its future development.

First of all, these are rapidly developing marketing digital technologies, artificial intelligence and digital ecosystems, which significantly reduce costs in the field of marketing mix tools, create a cascading marketing impact on the global market and consumers in various countries, and also increase the effectiveness of global business activities. There is a rapid growth of e-commerce, hybridization of the Internet and digitalization with the real world, online and offline marketing, including in the form of contactless, omnichannel and phygital methods of promotion and sales organization.

3. Global branding and brand management, using modern methods of influencing the neuro processes of the brain of multilocal consumers, activates the formation of a high degree of loyalty to the products and services of companies. The development of global business is largely facilitated by the processes of globalization and regionalization, cultural unity and digitalization, as well as the improvement of empirical approaches, which ultimately combine market strategies and marketing mix technologies into a global marketing ecosystem.

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International Trade Purchase and Sale Transactions



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Abstract The chapter starts with a paragraph on the legal regulation of international trade transactions. The following paragraphs describe the technique of international trade operations, terms of the contract for the export sale of the goods, and basic terms of delivery.

1 Introduction

The chapter analyses the key points in the organization and the technique of the company's operations in international markets. The chapter aims to describe the legal framework of international economics, primarily foreign trade, transactions, the application of various conditions when concluding foreign trade contracts and the specific risks accompanying international trade transactions.

2 Legal Regulation of the International Trade Transactions

The modern system of norms regulating international trade operations includes:

- Domestic legislation of the states participating in the transaction;
- International agreements;
- International and national legal usages and business practices.

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2.1 *Domestic Legislation*

Legislation on the regulation of international trade operations differs. In some countries, the rules of law relating to international trade are fixed as part of general economic legislation, sectoral laws and by-laws. In other countries, the state adopts special laws and even codes of laws on international economic relations.

For instance, in Russia, there is no single international economic code, but there is a significant number of legal acts containing norms of international economic law, and the most important among them is the Civil Code of the Russian Federation. At the same time, Russia has a significant number of laws and by-laws regulating the procedure for carrying out economic and investment activities with foreign participation. As a rule, these acts are complex and contain rules of conduct relating to various branches of law—administrative, financial, customs, labour, civil, etc. For example, the Law “On the Fundamentals of State Regulation of Foreign Trade Activity” (2003) defines the principles of regulation of this sphere, forms and methods of regulation, as well as the system of bodies performing certain regulatory functions.

Many of these laws and by-laws, as well as the provisions of the Civil Code of the Russian Federation, are based on the norms introduced into domestic legislation, taken from international treaties.

2.2 *International Treaties*

International treaties may have the character of multilateral agreements (conventions), which are usually developed by international intergovernmental organizations, regional treaties and bilateral interstate agreements. International treaties developed by international organizations are universal and are designed for wide application. However, significant differences in the practice of applying international law existing in different countries and the unwillingness of many States of the world to abandon the application of their national legal acts in favour of unified norms of international treaties continue to remain a serious obstacle to their universal recognition and dissemination. Currently, this increasingly applies to foreign trade activities and international settlements.

Among the international treaties already functioning in this area, it is worth mentioning, in particular:

- The UN Convention on Contracts for the International Sale of Goods (Vienna Convention) of 1980 (regulates the procedure for concluding a contract for the international sale of goods, and also defines the rights and obligations of the seller and buyer that arise from such a contract);
- The 1974 Convention on the Limitation Period in the International Sale of Goods and its Additional Protocol of 1980 (establishes a single limitation period for the presentation of claims arising from an international sale agreement by the seller and the buyer to each other);

- The Hague Convention on the Law Applicable to Contracts for the International Sale of Goods, 1986 (it contains mainly conflict-of-laws rules governing the procedure for determining the law applied in the execution of international trade transactions, and establishes the scope of its operation).

In the field of international settlements, the three Geneva Conventions on the Unification of the Law Relating to Bills of Exchange and three subsequent Conventions, also signed in Geneva, on the Unification of the Law Relating to Cheques are currently the most significant.

A significant number of international agreements have been concluded in the field of transport, transportation of goods and passengers. Among the most significant agreements are the following:

- The International Convention on the Unification of Certain Rules on the Bill of Lading;
- The Warsaw Convention on the Unification of Certain Rules Concerning International Air Transportation;
- Convention on the Contract for the International Carriage of Goods by Road;
- Agreement on the Carriage of Passengers and Baggage by Rail in Direct International Traffic;
- Agreement on International Freight Traffic;
- UN Convention on the Carriage of Goods by Sea (Hamburg Rules);
- Convention on the International Carriage of Goods, Passengers and Baggage by Rail;
- The UN Convention on International Multimodal Transport of Goods.

Besides, one can single out a fairly large group of international legal agreements on intellectual property issues. Among them, one of the oldest sources of modern private international law—the Paris Convention for the Protection of Industrial Property of 1883, to which more than 140 countries of the world are parties, as well as another important document—the Patent Cooperation Treaty (PCT) of 1970.

For instance, the legal basis for international trade activity is currently the treaties and agreements regulating the functioning of the Eurasian Economic Union, among which:

Agreement on the Union (2014).

- Agreement on the Customs Code of the Eurasian Economic Union (2017), the annexe to which is the Unified Customs Tariff of the Union (ETT).

Agreements on the procedure for circulation of certain categories of goods on the territory of the Union.

Agreement on the Coordination of Actions for the Protection of Intellectual Property Rights.

2.3 International and National Legal Usages and Business Practices

A feature of commercial transactions, both in domestic and international trade, is the role that is assigned to trade usages and business practices. In international trade, usages were perhaps the first and main source of law, supplemented subsequently by a system of international treaties, conventions and agreements. The usage often had an oral form, which gave rise to its different interpretations and complicated the process of proving its existence. In this regard, various participants in international trade have been working on the informal codification of trade usages.

A trade usage is understood as a rule that has developed in the field of trade based on constant and uniform repetition of actual relations. Accordingly, international usage is understood as the rules of conduct of subjects of international law that have emerged as a result of long, uniform practice and are recognized as an international legal norm. Trade customs are characterized by the following features:

- an established rule, stable and sufficient in its content;
- widely applied rule;
- a rule not provided for by law.

The conditions for the application of a trade usage include the parties making the transaction being aware of it. Trade usages are not always fixed in any written document, although now such documents are most often available and are desirable, since they bring certainty to the relations of the parties and exclude the occurrence of commercial disputes.

The presentation of trade usages can be found in the rules of stock or commodity exchange trading, in special collections issued by national chambers of commerce, and in standard contracts. Arbitration courts, when considering disputes on transactions on certain issues, also rely on established trade usages.

The most important role in the study and systematization of trade usages is played by national chambers of commerce. Generally, national Chambers of Commerce testify trade and port usages adopted in the country and can give appropriate conclusions.

The main organization engaged in the systematization of trade customs and the development of relevant documents in the field of international trade is the International Chamber of Commerce. This organization has prepared several documents that contribute to the uniformity of understanding and practice of conducting transactions in the field of international trade. One of the most well-known and used documents is the International Rules for the Interpretation of Commercial Terms, which have received the abbreviated name “Incoterms” (see Paragraph 36.4).

Trade usages have a significant impact on the content of the parties’ obligations under contracts, and also play a decisive role in resolving disputes in arbitration. If there are ambiguities or inaccuracies in contracts, trade usages help clarify their content. Trade usages often replace some rules of law when there is a direct indication of the application of trade usages in the contract. The role of trade usage in regulating

trade relations is enshrined in some international agreements. For example, under Art. 9 of the UN Convention on Contracts for the International Sale of Goods, the parties to the contract “are bound by any usage to which they have agreed and by any practices they have established between themselves. In the absence of an agreement to the contrary, it is considered that the parties have impliedly made applicable to their contract or its formation a usage of which the parties knew or ought to have known and which in international trade is widely known to, and regularly observed by, parties to contracts of the type involved in the particular trade concerned”.¹

2.4 UN Convention on Contracts for the International Sale of Goods

The agreement of the terms of the transaction between the parties is completed, as a rule, when they make a document in which the rights and obligations of the parties are recorded in detail. Such a document is called an international trade agreement or an international trade contract. The terms “contract” and “agreement” are synonymous, but in practice, international agreements at the level of state bodies are more often referred to as contracts, whereas the term “contract” is more often applied to commercial transactions.

A special role in the legal regulation of international trade transactions is played by the UN Convention on Contracts for the International Sale of Goods, which was developed within the framework of the UN Commission on International Trade Law (UNCITRAL) and was adopted at a specially convened international conference in Vienna in 1980.²

The importance of the Vienna Convention is determined not only by the fact that many states are already participating in it but also by the fact that it represents an international unification of substantive legal norms governing the most common type of contract—purchase and sale.

Legal solutions in the Vienna Convention sometimes differ significantly from those approaches that exist in the regulation and practice of individual states. This explains the reason that some countries participating in world trade (USA, UK) are in no hurry to sign this Convention. With all the positive consequences of applying unified regulatory norms in practice, this also means certain difficulties for participants in trade transactions who cannot immediately adapt to new legal norms.

At the same time, the appearance of this Convention did not affect the principle of autonomy of the will of the parties and the ability of the seller and the buyer to independently agree on the terms of the transaction suitable for them. The principle of “autonomy of the will of the parties” is a specific feature of international transactions and indicates the ability of participants in such a transaction to agree on any terms

¹ ICC (2020).

² UN (2010).

convenient for them, without taking into account the norms of national legislation. The only restriction is mandatory, i.e. mandatory for the application of the norms of national law.

The provisions of the Convention apply to the rights and obligations of the parties to the transaction dispositively, i.e., only if the parties have not settled their relationship in some other way than specified in the Convention.

The Convention applies to contracts for the sale of goods concluded by parties whose commercial enterprises are located in different States. Thus, the Convention establishes the criterion that makes it possible to consider the purchase and sale internationally from the point of view of the Convention, namely, the location of the counterparty's enterprises in different countries. At the same time, the affiliation of the enterprises themselves to different commercial organizations is not mandatory. Thus, the delivery of products from the parent company to its foreign branch will be an international transaction. Due to their specifics, the Convention does not apply to some purchase and sale transactions (commodity exchange transactions, supply of air and water transport vessels, electricity).

The Vienna Convention has established very important provisions concerning the form of the contract. Thus, according to Article 11, "the contract of sale need not be concluded in or evidenced by writing and is not subject to any other requirement as to form. It may be proved by any means, including witnesses".³ At the same time, since this provision of the Convention contradicts the mandatory requirements of the national legislation of some States requiring the conclusion of an exclusively written contract, article 96 of the Convention granted such States the right to such a decision. In this regard, when Russia joined the Convention based on Article 96, it made a statement that contracts for the international sale of goods with the participation of Russian organizations should be concluded exclusively in writing.

A significant place in the Convention is given to the methods of concluding international transactions for the purchase and sale of goods. The main instruments of the parties are the offer and acceptance. An offer, according to the Convention (Article 14), is understood "as a proposal for concluding a contract addressed to one or more specific persons" and expressing "the intention of the offeror to be bound in case of acceptance". The necessary conditions for considering a commercial offer as an offer are the designation of the goods and a direct or indirect indication of the quantity and price. The Convention considers proposals addressed to an indefinite circle of persons only as an invitation to make offers, unless otherwise expressly indicated by the offeror.

Considering the offer, the buyer may have some suggestions of his own about the future transaction, which he sets out in his response. The Vienna Convention (Article 19) proceeds from the fact that the response to the offer, which contains additions, restrictions or other changes, is a rejection of the seller's offer and is a counter-offer. At the same time, however, the Convention makes distinctions concerning the changes made by the addressee of the offer. Thus, a response to an offer is recognized as acceptance of additional or different conditions that do not significantly change

³ Ibidem.

the terms of the offer. Such a response will not be recognized as acceptance only if the offeror objects to the relevant changes without delay. If there are no such objections from the offeror, then the contract is considered concluded on the terms of the offer with the changes contained in the acceptance. For example, the seller's offer states that the delivery and acceptance of the goods will take place at the port of departure. In his letter, the buyer indicates that this procedure should take place in the presence of representatives of both parties. In this context, this addition is not essential, and the response will be recognized as acceptance.

But if the changes of the addressee of the offer relate to the essential terms of the transaction, such a response is considered only as a counter-offer. At the same time, the Vienna Convention provides for an approximate list of conditions for contracts for the international sale of goods that significantly change the terms of the offer: price, terms of payment, quality and quantity of goods, place and time of delivery, the scope of delivery, responsibility of one party to the other, dispute resolution procedure (article 19.3). Let's continue the above example of the terms of the seller's offer regarding the delivery and acceptance of the goods at the port of departure. If the buyer indicates in his response that this delivery acceptance will be considered preliminary, and the final one must take place at the port of destination, then such a change is significant and will be considered a counter-offer.

The provisions of the Vienna Convention regarding acceptance with amendments differ from the interpretation of the Civil Code of the Russian Federation. According to the Civil Code of the Russian Federation, not only the conditions on the subject of the contract are recognized as essential, but also the conditions that are named in Russian legislation as essential for a specific type of contract, as well as all those conditions on which the parties must agree. Simply put, according to Russian law, any changes are considered significant and give the buyer's response the character of a counter-offer. Thus, the moments of the conclusion of the contract under Russian and international law may not coincide. Understanding this difference is especially relevant for those Russian participants in international economic activity who rarely conclude foreign trade transactions.

According to Article 25 of the Convention, "a breach of contract committed by one of the parties is fundamental if it results in such detriment to the other party as substantially to deprive him of what he is entitled to expect under the contract".⁴ This article is relevant for the application by the seller or buyer of remedies also provided for by the terms of the Convention. Such violations, for example, can occur when supplying industrial raw materials (oil, coal) of inadequate quality. If the buyer's processing technology does not allow the use of the delivered grade of goods, then he will be forced to resort to the additional purchase of goods of proper quality and at the same time, he may be liable to his customers for the delay in the delivery of processed products.

Unlike the obligations of the seller, the obligations of the buyer, under the Vienna Convention, are less regulated and consist primarily in paying for the goods and

⁴ Ibidem.

receiving them. The main violation, which, as a rule, the buyer admits, is precisely the non-payment (partial payment) of the price of the goods.

The Vienna Convention contains several rules governing the relations of the parties to the contract of sale when it becomes clear that one of the parties to the contract will not fulfil a significant part of its obligations until the moment of performance or will allow a material breach of the contract. Thus, Article 71 of the Convention provides that “a party may suspend the performance of his obligations if, after the conclusion of the contract, it becomes apparent that the other party will not perform a substantial part of his obligations as a result of either a serious deficiency in his ability to perform, or in his creditworthiness, or his conduct in preparing to perform, or in performing the contract”. In this case, the party suspending the execution must immediately notify the other party. However, if the second party provides sufficient guarantees for the fulfilment of its obligations, the first party must continue to carry out the execution.

In addition, according to Article 72 of the Convention, if “it is clear that one of the parties will commit a fundamental breach of the contract, the other party may declare the contract avoided”. A party may declare the termination of the contract also in case of violating the obligations to supply goods in separate batches in respect of any of the batches of goods (Article 73 of the Convention).

Violation of the contract entails the claim of the injured party to recover damages. Analysing the provisions on the procedure for compensation of losses, it should be noted that following Article 74 of the Convention, losses are understood to be amounts equal to damage, including loss of profits, caused to the other party as a result of a breach of contract. In this case, the losses should not exceed the damage that the guilty party foresaw or should have foreseen at the time of conclusion of the contract, taking into account the circumstances that she knew or should have known at that time. Thus, the maximum losses of the buyer who received an improper grade of goods will amount to the amount spent on a new transaction, plus the penalty paid for non-performance of the contract to third parties.

Articles 75 and 76 of the Vienna Convention provide for alternative provisions regarding damages:

- the injured party has the right to receive the difference between the contractual price (the price specified in the contract) and the price of the transaction made in return;
- if at the time of termination of the contract there is a market price known to the parties for the relevant goods, and the aggrieved party has not purchased or resold the goods, then it has the right to demand the difference between the price set in the contract and this price.

This means that, at present, almost all aspects of foreign economic activity are regulated either by international agreements or by national legal acts.

3 The Technique of International Trade Operations

Most companies, having reached a certain level of development and share in the domestic market, consider export trade activities as the next stage of their activities. However, commercial operations carried out on the world market have several features. These specific features are constant changes in the ratio of supply and demand; significant price fluctuations; instability of foreign exchange rates; the competition between producers. These factors have a significant impact on the organization and technique of commercial work of participants in foreign economic activity, and the activity itself becomes more extensive and more complex than business on the domestic market.

At the same time, if we are talking about exports, it is assumed that at the preliminary stage the company has already assessed its capabilities to enter foreign markets, has the necessary products, technological and financial potential, and the company's products have a sufficient level of competitiveness.

An export transaction consists of three stages: preparation of the transaction, the conclusion of the contract and fulfilment of the obligations assumed. Each of these stages, in turn, includes a set of operations that should ensure a favourable financial result for the company with minimal risks.

If the company is planning to conclude a transaction with a foreign partner for the first time, then the preparation stage is of particular importance. At this stage, the key parameters of the future transaction are determined: the market or markets in which the company will operate; the range of possible counterparties for negotiating the transaction; establishing contacts with selected counterparties; preparing commercial proposals and requests for foreign partners.

Analysing foreign markets from the point of view of their attractiveness for export, companies take into account both the general economic situation in the country, the presence of domestic and foreign competitors, and issues of a trade and political nature: customs duty rates, the presence of any restrictions in trade or their absence, i.e. the degree of accessibility of a particular market for export. As a result of such a study, the company should choose a potential market with the least degree of risk and relatively easy access.

The decision on future business partners is largely determined by whether the company is ready to conduct commercial operations directly by concluding contracts with consumers of its products, or whether it plans to carry out the initial stage of export activities through an intermediary. The use of an intermediary in foreign trade (distributor, commission agent, consignee or agent) has both advantages and disadvantages, their ratio in each case will prompt the exporter to the right decision. However, it should be taken into account that if a company plans long-term work in a foreign market and wants to achieve success, then at some stage it will need to switch to direct work with consumers.

There are two ways to find foreign buyers. The first is when potential buyers themselves enter the exporter's market and find out how the potential exporter's capabilities meet their needs. In this case, the parties to the transaction, as a rule, do

not have sufficient information about each other and, during preliminary negotiations, conduct a mutual analysis of both the technical possibilities of implementing the transaction and each other's degree of reliability. It should be noted that this method of acquiring new customers is unreliable from the point of view of establishing stable business relationships.

The second method is also possible, which assumes that the initiative will come from a potential exporter. The main condition for the implementation of such a relationship scheme is the availability of reliable information based on which the company will be able to make informed and promising decisions about the choice of sales markets and entering into business relations with specific partners.

Many specific conditions determine the choice of a trading partner, but at the same time, some general provisions guide all merchants when carrying out export and import operations.

Firstly, the degree of the solidity of a potential partner is assessed. The degree of solidity refers to quantitative indicators of activity, the scale of operations, the degree of solvency and creditworthiness, as well as the degree of trust that banks place in it.

The second important principle in choosing a counterparty is his business reputation. The reputation of the company is determined by thoroughness and conscientiousness in the performance of obligations, the presence of experience in a certain area of business, the desire to take into account the proposals and wishes of the counterparty and solve all emerging complex situations through negotiations. The business reputation of a firm is not directly related to the indicators of solidity and is mainly determined by the experience of a particular firm that has been conducting commercial activities for a long period.

Among the principles of choosing a counterparty firm, one can also mention taking into account the experience of past transactions. All other things being equal, merchants prefer those firms that have proven themselves well in the past.

Today, potential partners are very often searched for in the Internet. The first step here is to create an English version of the company's website, index the site in foreign search engines and register in the network catalogues. For companies operating in the B2B market, the next step is often to register on the electronic trading platforms of the selected country.

At the preliminary stage of the transaction, the exporter needs to check the information about possible partners. To do this, you can contact the trade register of the partner country or order a report on the company from an international credit rating agency. Based on the data obtained, exporters prepare dossiers on counterparties, which will be further updated with new information from other sources, both open and confidential.

The most important elements of the preparation of a foreign trade transaction include the analysis of the current prices of the world market and the determination of the price level of the future transaction. This work includes collecting information on the current prices of the world market, systematizing and analysing, determining the trends in market prices and calculating an acceptable price level for the exporter. The exporter takes the prices of similar goods sold on the world market as the basis

for the price of a future transaction, with amendments to the quality, packaging, configuration and commercial terms of delivery of the planned transaction.

After the completion of the preparatory stage, the exporter proceeds to the negotiation process. At the same time, it should be borne in mind that in international economic relations, partners enter into mutual relations, having, as a rule, different goals, positions on the main issues of the future transaction, different experiences and legislation in the field of entrepreneurship. Therefore, the negotiation process consists of two stages: firstly, the presentation of one's position and wishes to the partner, as well as the study of his proposals and conditions, and, secondly, the search for a mutually acceptable compromise and its formalization in the text of the agreement.

The parties may come into contact with each other in various ways. However, the most generally accepted is the following order of interaction between partners: preliminary presentation of proposals and wishes, which is usually carried out in writing; clarification and coordination of individual positions of the transaction, which can be carried out by a faster method of communication; final settlement of all terms of the transaction at a personal meeting of the parties.

If the initiative to start negotiations belongs to the seller, then he declares his desire to conclude a purchase and sale agreement on certain conditions by sending initiative proposals. Such a written proposal of the seller in commercial practice is called an *offer*, and the person who sent the offer is an *offeror*. Currently, the main international agreement regulating the process of concluding sales transactions is the UN Convention on Contracts for the International Sale of Goods, often called the Vienna Convention. The procedure for concluding a transaction based on the Convention is presented in Paragraph 1 of this chapter.

The exporter takes into account various factors when preparing the offer. In particular, if the counterparty is not familiar with the exporter, then the offer is often both business and partly advertising in nature, representing the supplier company from the best side. In some cases, reviews of well-known companies—buyers of products are even provided.

The offer usually specifies all the commercial terms of the transaction: the name of the goods, quantity and quality characteristics, basic terms of delivery and price, delivery time, terms of payment, the order of delivery and acceptance of the goods, the nature of packaging and packaging, guarantees and sanctions.

In international practice, two types of offers are used: firm and free. A firm offer is an offer that is sent only to one possible buyer with an indication of the period during which the seller is bound by his offer and cannot make a similar application to another buyer. If the buyer accepts the received offer, the date of receipt of the acceptance by the exporter is considered the date of the transaction. A free offer can be sent for the same batch of goods to several possible buyers. It does not set a deadline for a response and therefore does not bind the offeror. The buyer's consent to the terms of the free offer is confirmed by the seller's firm offer, after which the transaction is considered concluded.

4 Terms of the Contract for the Export Sale of Goods

An agreement on the basic terms of mutual obligations reached during negotiations by participants in an international trade transaction is usually drawn up in a written document—a contract or a contract of sale. The contract of sale is a document indicating that one party to the transaction (the seller) undertakes to transfer the goods specified in the contract (or another subject of the agreement) to the ownership of the other party (the buyer), which in turn undertakes to accept it and pay the set price for it.

In international trade practice, there is a wide variety of contracts, their content depends on the operation that the counterparties are going to perform. But, despite the variety of types of contracts, each of them is based on the provisions of the classical contract of sale. A written contract for the export sale of goods should:

- Be executed by persons empowered to legally bind the parties;
- Stipulate the country whose law will govern the contract;
- Exclude any terms imposed by law that the parties do not want to apply;
- Stipulate price, terms of sale, terms of payment and currency of settlement;
- Provide for arbitration where this course of dispute resolution is preferred;
- Stipulate all other matters agreed to by the parties.

In general, export sale contracts usually contain the following main articles, arranged in a certain sequence: preamble and definition of the parties; the subject of the contract; quantity and quality of goods, price and the total amount of the contract; delivery date; terms of payment; packaging and marking of goods; guarantees; penalties and damages; insurance; force majeure circumstances; arbitration clause.

If the subject of the transaction is machinery and equipment, then contracts may include other articles: technical conditions, maintenance obligations, etc. In case of sale of the results of intellectual activity, in particular licenses and know-how, several other articles are included in the contract: the ones on confidentiality, the contractual territory and others.

Some contract terms, primarily technical conditions, packaging and marking, and some others, can be included in the main text of the contract, and can also be formalized by annexes to the contract, which are an integral part of it.

The text of the contract begins with a preamble, which indicates the full legal name of the parties who concluded the contract. In some cases, especially when concluding transactions for services or intellectual property, the preamble may indicate the purpose of the contract and the interpretation of some terms used in this contract.

The name of the seller is traditionally indicated first, and the name of the buyer company is indicated second. For example:

JSC “Toyo Menka Kaisha Ltd”, Osaka, Japan, hereinafter referred to as the “Seller”, on the one hand, and LLC “Trading House “Metropolis”, London, UK, hereinafter referred to as the “Buyer”, on the other hand, have concluded this contract on the following:

4.1 *The Subject of the Contract*

The subject of the contract may be the sale and delivery of a particular product, the provision of any services, as well as the transfer of a particular type of technology. In this regard, the relevant article of the contract briefly defines the type of export transaction (purchase and sale, leasing), and then the object of the deal itself is indicated. For example:

The Seller sold, and the Buyer bought Japanese textile products on FOB terms.

If a heterogeneous product is supplied under the contract, then in this case a detailed list of all varieties, types and brands supplied is indicated in a separate document called the “Contract specification”, which is issued as an annex to the contract:

The Seller sold, and the Buyer bought, on FOB Yokohama terms, textile products in quantity, assortment, at prices and according to the specifications specified in Annexes 1 and 2, which are an integral part of this contract.

If the subject of the transaction is one product, but with complex technical characteristics, then a detailed description of the subject of the agreement is given in special sections called “technical specification”. They can also be issued as appendices to the contract, and in the section on the subject of the contract itself, a brief definition of the goods is given and a link is made to the corresponding section or appendix.

4.2 *Quantity of Goods*

When determining the number of goods in the contract, the parties must agree on the unit of measurement of the quantity, the system of weights and measures and the procedure for determining the quantity.

The number of goods in the contract can be determined by units of weight, volume, length, pieces, etc. The choice of measurement units depends on the nature of the product itself and the established practice of international trade. If the unit of measurement is weight, then it is necessary to specify the net or gross weight, or maybe gross for net (the container in the latter case is no more than 1–2% of the weight of the goods and the price of the goods in the package does not differ much from the price of the same weight unit of the goods) in the text of the contract.

If the goods are subject to natural loss during the transportation from the seller to the buyer, then the contract should include conditions for the distribution of natural loss (shrinkage, leakage, etc.) between the parties. In the absence of such a condition, it should be assumed that until the moment of transfer of the goods, the natural loss lies with the seller, and after that moment—with the buyer.

When delivering bulk goods, the designation of the quantity is usually supplemented by a clause allowing the deviation of the number of goods supplied by the seller from the quantity stipulated in the contract. This reservation is called an “about”

clause, or an option, and can be carried out at the choice of the seller or the buyer. The option is most often used for sea transportation of goods. The availability of the option helps the party responsible for the transportation of the goods to charter the tonnage necessary for this transportation and not pay for the “dead” freight, i.e. the freight for the unused space of the vessel. The size of the option is set as a percentage of the main amount and is determined by the agreement of the parties and trading customs. As a rule, it does not exceed 10%, but, for example, the “about” clause for grain is 5%, coffee—3%, rubber—2.5%, wood—10%. The delivery of goods under the contract within the option is paid by the buyer according to the actual quantity and is not a violation of the terms of the contract.

4.3 *Quality of the Product*

The article “Quality of the product” is necessarily present in every contract. According to the trade customs of some countries, contracts in which there is no information about the quality of the goods may be invalidated. In Russia, according to the Civil Code of the Russian Federation, in the absence of an indication of the quality of the goods, the seller must deliver the goods of the usual quality for the seller, used for the usual purpose. At the same time, since the Vienna Convention considers the characteristics of the subject of the contract to be an essential condition, and international agreements take precedence over domestic legislation, the absence of an agreement on the characteristics of the subject of the contract means the absence of a deal.

In this article, the parties establish the qualitative characteristics of the product, i.e. a set of properties that determine its suitability for its intended use. The parties to the contract should strive to provide the most complete qualitative description of the subject of the transaction.

In international practice, the following methods of determining quality in contracts are most often used.

- by standards;
- by technical description;
- by samples.

When delivering goods according to standards, the parties can choose and fix both the national standard of the seller, the international standard (if existed), and in some cases, the standard of the buyer company (used relatively rarely). According to the technical description, mainly machines and equipment are sold and bought, as well as other goods for which there are no standards or for which special quality requirements are imposed. To determine the quality of goods with individual characteristics, for example, fruits, a method of establishing quality by description is used. In this case, the contract describes in detail all the properties of the goods.

The determination of the quality of the goods according to the sample means that the seller presents some samples of the goods to the buyer. After the buyer confirms

them they become the standard for this contract. This method is common mainly in the trade of consumer goods. The text of the contract contains an indication of the number of samples taken and the procedure for comparing the delivered goods with the sample, for example:

The quality of the goods must correspond to the samples agreed upon and confirmed by both parties and are the standards for this contract. One copy of the reference sample is kept by the Buyer—the other by the Seller for eight months from the date of completion of delivery. They will serve as arbitration samples in the event of a dispute between the parties under this contract until the claim is settled.

For some special goods, there may be other ways to establish quality. So, the clause “by preliminary inspection” can be fixed when the goods are sold from the warehouses of the seller. The clause “according to the content of individual substances in the goods” is often fixed in the contracts for raw materials (ores, metals, chemicals). An indication of the quality of the goods “tel quel” (such as it is), waste paper and other types of secondary raw materials are supplied.

The main document confirming the quality of the goods is a quality certificate issued either by the manufacturer or by a neutral organization that checks the quality of the goods. In the practice of international trade, there are cases when firms with a worldwide reputation took an additional fee for providing a quality certificate.

4.4 Delivery Time

The delivery period is the period agreed by the parties and stipulated in the contract, during which the seller must transfer the subject of the transaction to the buyer. The delivery dates in the contract can be set in the following ways:

- determining a fixed delivery date;
- determining the period during which delivery should be made (month, quarter, year), which is most often found in contracts;
- using special terms (“spot (immediate) delivery”, “from the warehouse”, etc.).

The term “immediate delivery” in international practice means delivery within a certain period after the conclusion of the contract. This period is determined by trade customs and is 1–14 days. But for certain types of goods spot delivery has a different interpretation. Thus, in the international trade of oil and petroleum products, the concept of spot (immediate) delivery assumes the delivery within 30 days from the transaction date.

Contract parties can add a clause fixing what will be considered the delivery date. This allows the parties to avoid further disputes about the accuracy of compliance with delivery dates. This date is determined depending on the methods of transportation of the goods and may be:

- the date of the transport document certifying the acceptance of the goods for transportation;

- the date of receipt of the freight forwarding company in receiving the cargo for further dispatch to the destination;
- the date of the warehouse certificate, if the buyer does not provide the tonnage in time and the seller uses his right to transfer the goods for storage to the warehouse at the buyer's expense;
- the date of signing of the acceptance certificate by the representatives of the seller and the buyer after the delivery of the last batch, without which it is impossible to use all previously supplied equipment (in contracts for complete equipment).

Example of contract terms:

The delivery of goods under this contract must be made during January–February 2019 in three batches. The Seller is granted the right to make early delivery of the goods with the consent of the Buyer. The date of delivery is the date of the Bill of Lading.

4.5 Basic Terms of Delivery

When preparing an export contract, partners must distribute among themselves the numerous responsibilities associated with the delivery of goods from the seller to the buyer (transportation, insurance, customs clearance, etc.). Each of these responsibilities involves different costs, while transporting goods there is also a risk associated with its damage or loss.

To unify the understanding of the rights and obligations of the parties to the contract, The International Chamber of Commerce has developed the basic terms of delivery, which define the list of obligations of the seller and the buyer for the delivery of goods, establish the moment when the risk of accidental death or damage to the goods passes from the seller to the buyer. These terms are called basic because they establish the basis of the price of the product, depending on whether delivery costs are included in the price of the goods or not. All details about them will be discussed in Sect. 4.6.

4.6 Product Price

The main problems that need to be solved when setting the price of a product are the following:

- which market prices should the exporter focus on when setting the offer price and the importer when determining the feasibility of purchasing (price level);
- how does the price of the goods correlate with the costs of delivering the goods to the buyer (price basis);
- how to fix the price in the contract;
- in which currency to set the price of the goods;
- how to avoid currency risks.

The price level that the seller and buyer are guided by when concluding a transaction is determined by them at the preliminary stage of preparation for negotiations. The price level is usually understood as the current value of the price of a similar product offered by large suppliers of goods, or the prices prevailing in organized commodity markets (exchanges, auctions). In the process of negotiations, this level is the starting point for agreeing on the price of a specific delivered product, taking into account differences in quality and several other terms of the contract.

The price in the contract is indicated in units of a certain currency for a quantitative unit on an agreed delivery basis. E.g.:

The price is set in US dollars and is understood to be FOB Japanese port. The above price includes the cost of packaging and marking. Lightening, and loading of goods onto the vessel, including stowage in the hold, is carried out by the Seller at his expense.

The choice of the currency for pricing the product is determined by the nature of the product and the practice that has developed on the world market when trading such product. At the same time, it should be assumed that the buyer wins when setting the price in a weak currency and in a currency whose exchange rate tends to decrease. The exporter, on the contrary, tends to be the strongest currency or a currency that tends to increase.

The price in the contract can be set for a quantitative unit of goods (for example, a unit of weight, volume, per piece, set, etc.), a counting unit (for a dozen), a weight unit based on the basic, i.e. specified in the terms of the contract, the content of the main substance in the product.

If goods of different quality and assortment are supplied under one contract, then the price is set separately for a unit of goods of each type, grade or brand. In such cases, the prices of goods are indicated in the annexes to the contract—specifications, which are an integral part of the contract.

When delivering complete equipment, the price for each component is indicated in the specification. For partial deliveries, the price for each partial delivery is indicated in the specification.

At the same time, the parties stipulate how the set price is understood, i.e. whether it includes the costs associated with the shipment of cargo for packaging, labelling, etc.

Contract prices can be fixed differently:

- Fixed price;
- Formula price;
- Flexible price.

The fixed price is entered into the contract after the agreement between the parties during negotiations and is not subject to change during the execution of the contract. Fixed prices are better suited for short-term deals. Fixing a fixed price in contracts with a long execution period may lead to the fact that the contract price will differ significantly from the current market price, and this will be unprofitable for one of the parties.

Formula prices are not specified directly in the contract, but the parties indicate the method of setting the price in the future, i.e. at the time of execution of the contract, is described. Thus, it may be provided for the establishment of contract prices based on prices of some commodity exchange on the day of delivery or payment or the basis of other reliable reference prices. For example:

The price of aluminium supplied under this contract is set at the level of the spot price of the London Metal Exchange on the date of the Bill of Lading.

The sliding (flexible) price provides for fixing the initial (base) price in the contract, which during the execution of the agreement may change according to the method agreed by the parties when the price-forming elements change. This method of setting the price can be used for supplying both raw materials and machinery and equipment. For example, the sliding price of the equipment is the price calculated at the time of execution of the contract by revising the base (contractual) price, taking into account the changes in production costs that occurred during the execution of the contract. The sliding price is often set when trading machinery and equipment with delivery dates exceeding one year, as well as when performing large-scale and long-term contract work.

This method of setting the price can be applied to the supply of raw materials. In this case, the contract price is linked to changes in the market price of this product at the time of its delivery. The contract must specify the source by which the price change should be judged, and also specifies the permissible minimum and maximum deviation of the market price from the contract price.

4.7 Payment Terms

The terms of payment include the currency of the payment, the method and procedure of the payment for the delivered goods, a list of documents submitted for payment, and protective measures against unjustified delay in the payment or other violations of the payment terms of the contract.

Correctly chosen terms and forms of settlements largely determine the speed of the turnover of funds in each foreign trade operation, as well as its effectiveness.

When choosing payment terms, partners take into account many factors such as the nature of the goods (raw materials, food, equipment, services, know-how); the market situation with the relevant goods; trade customs; the existence of intergovernmental payment agreements; norms of national currency control of counterparty countries; uniform rules for the use of various forms of settlements established in banking practice.

The terms of payment establish at what stage of the movement of goods its payment is made and whether it will be made in a lump sum or several instalments. So, payment can be made before the delivery of the goods, during the delivery of the goods, or for a long time after the delivery of the goods. At the same time, in each of these cases, the buyer can pay for the purchased goods in full or in parts.

The main payment methods used in the practice of international trade are cash payment and credit payment, as well as their combination.

Cash payment includes all types of settlements in which the goods are paid in full during the period from their readiness for export to or at the time of the transfer of the goods or commodity documents to the buyer's disposal. The forms of cash settlement are:

- by check;
- by bank transfer;
- by Letter of credit;
- by the collection of payments;
- via an open account;
- by Bill of exchange.

A check (in foreign trade settlements) is a written order of buyers or customers to their banks to pay the amounts indicated in them to bearers (specific persons, organizations) or by their order to other persons (order checks). The check form of settlements is rarely used in practice.

Bank transfer (in foreign trade settlements) assumes that exporters send invoices and other documents to importers for goods delivered, or services performed, claims and other mutual settlements. Based on these documents, buyers send payment orders to their banks to transfer money to the accounts of exporters or creditors.

Collection of payments is an obligation of the bank on behalf of the exporter to receive from the importer the amount of payment under the contract against the transfer of the commodity documents and transfer it to the exporter. Usually, the collection of payment is made against the submitted foreign trade documents and in this case, is referred to as a documentary collection.

The letter of credit provides for the buyer's obligation to open a letter of credit in favour of the seller for a specified amount by the deadline set in the contract at a certain issuing bank. As in the case of collection, a letter of credit is opened against the presented foreign trade documents and is called a documentary collection.

The most profitable form of payment for the exporter is an irrevocable documentary letter of credit. The bank should make, at the request and under the instructions of the importer, a payment to the exporter (for cash payments) or accept the expense (for credit payments) against the transfer of the provided documents to the bank and subject to all other conditions of the letter of credit.

In international practice, letters of credit and collection forms of payments have become the most widespread. At the same time, the letter of credit is more convenient for the seller, since it creates greater guarantees of payment for him, and the collection form is for the buyer since it allows him to make payment after receiving commodity documents from the seller. E.g.:

Payments for the delivered goods are made in US dollars by invoicing for collection through Alfa-Bank, Moscow. Invoices are paid in the amount of 100% of the value of the shipped goods within 14 working days after receiving the documents from Alfa-Bank.

In the practice of international trade, commercial credit is used, i.e., an exporter's loan to an importer or the issuance of advances by an importer to an exporter, and a bank loan. Settlements on credit may involve the provision of a promissory note loan, instalment payment or lending on an open account.

Promissory note (*tratta*) is the main form of commercial credit for many participants in international trade. The exporter issues a bill of exchange (usually an urgent one, i.e. a bill of exchange indicating the date of payment) to the importer and, together with the documents of title, transfers them to the bank. The buyer receives the documents in his bank only against the acceptance of the spending, i.e. his confirmation. When providing a bill of exchange loan in international trade, bills of exchange have become widespread. They are more convenient because they can be used as a means of payment.

When agreeing on an instalment payment in the contract, the parties may provide for partial payment in the form of advance and partial collection payments. The amount of the part to be credited, the terms of the loan and the procedure for repayment of the loan should be described in detail in the contract.

4.8 Terms of Delivery and Acceptance

Among the obligations of the seller under the contract, the delivery and acceptance of the goods play an important role. As a result of delivery and acceptance, the buyer gets the opportunity to dispose of the goods, and the seller is considered to have fulfilled his obligations.

In the contract, the parties have to fix the order of delivery and acceptance, namely

- type of delivery and acceptance;
- place and terms of delivery and acceptance;
- methods of delivery and acceptance of goods by quantity;
- methods of delivery acceptance by quality.

The contracts may provide for preliminary and final delivery acceptance. Preliminary delivery acceptance is aimed at establishing compliance of the manufactured goods with the terms of the contract. As a result of the preliminary acceptance, the buyer may reject the goods in case of defects or require the elimination of such defects. Final delivery acceptance means the actual fulfilment of the contract in terms of quantity and quality. The final acceptance data is the basis for the parties' calculations.

The place of actual delivery and acceptance of the goods is precisely set in the contract. It can be selected both in the seller's country and in the buyer's country. This may be the seller's enterprise or warehouse; the agreed port of shipment, the railway station of departure or airport; the port of destination, the border or final railway station in the destination country, the buyer's warehouse or the final point of sale of the goods.

According to the quantity, acceptance is carried out by recalculation or weighing of the goods, and its results are reflected in the relevant documents. The buyer is usually to check the quantity immediately upon arrival of the goods. By quality, delivery acceptance of goods is carried out either based on the document confirming the conformity of the quality of the goods to the terms of the contract or by checking the quality of the goods delivered at the place of acceptance.

Acceptance may be carried out by the parties or their representatives jointly, as well as by the competent organization specified in the contract.

4.9 Guarantees

When delivering machinery and equipment, the contract formulates the seller's obligations regarding the quality assurance and technical characteristics of the goods. At the same time, the parties should agree on the terms of the guarantees, the obligations of the seller during the warranty periods, and the procedure for filing claims and satisfying complaints.

The scope of the guarantee provided depends on the nature of the goods and the technical requirements of the contract. The warranty period can range from several months to several years.

The warranty periods are set by the parties taking into account the established international practice and the type of goods. The warranty period can be calculated: from the date of delivery of the goods; from the date of transfer of the goods to the first consumer; from the moment the buyer receives a written notification from the seller that the equipment is ready for shipment; from the date of commissioning of the equipment.

When delivering complex equipment requiring installation and maintenance by the seller, the contract must contain articles stipulating the procedure for installation and maintenance. These terms can be included in the text of the contract itself in a separate paragraph, however, one can stipulate all these terms in a separate contract for installation, and maintenance, which will complement the main contract of sale.

4.10 Complaints and Sanctions

The claims made by one counterparty of a transaction to another counterparty in connection with non-fulfilment or improper fulfilment of the terms of the contract are called complaints. The contract establishes the procedure for submitting complaints; the period during which complaints can be filed; the rights and obligations of the parties in connection with the submission of complaints; ways of settling complaints.

The settlement of the complaint can be made:

- by filling up the underload in a separate batch or during subsequent deliveries;
- correcting the defects in the product at the seller's expense;
- replacing the goods with other items that meet the terms of the contract (all transportation and other costs associated with the return of the goods and their replacement are paid by the seller);
- providing a discount on the price of the goods or by markdown of the entire batch of goods in proportion to the percentage of defective goods.

Example of a contract condition:

Complaints can be made by the Buyer to the Seller no later than 180 days from the date of arrival of the goods at the port of destination in respect of the quality of the goods—in case of non-compliance with the quality stipulated in the contract; in respect of quantity—in case of internal shortage.

The content and justification of the complaint must be confirmed either by an examination report or by an act drawn up with the participation of a representative of a disinterested competent organization of the buyer's country. This act is a binding and final document for both parties, confirming the quantity and quality of the goods received, and the basis for possible recalculations.

The seller has to consider the complaint and respond on the merits of the complaint within ten days from the date of receipt. If there is no response from the Seller after the specified period, the complaint will be considered recognized by the Seller.

Upon presentation of a quality complaint, the Buyer has the right to return the rejected goods to the Seller and demand to deliver the goods of proper quality instead of the returned one.

All transportation and other costs associated with the delivery and return of defective goods are paid by the Seller and at his expense.

The contract also stipulates the sanctions that can be applied to the parties in case of violation of delivery dates or terms and conditions of payment.

For late delivery, if it is not caused by force majeure, the seller must pay a penalty—a conventional fine. The amount of the conventional fine is fixed in the contract as a percentage of the value of the undelivered goods or the form of a certain fixed amount.

Penalties for violation of payment deadlines are also applied in the form of accrual of interest on the amount not paid on time.

In addition to fines, the parties may specify in the contract the procedure for compensation of losses incurred by one of the parties due to the violation of their obligations by the other party. Sometimes fines and compensations may be provided for in the contract at the same time, sometimes in the form of sanctions, demands may be made to the violator either to pay a fine or to compensate for losses.

4.11 Insurance

All purchase and sale agreements are accompanied by insurance. Depending on the terms of the contract, this obligation lies either on the seller or on the buyer. If this obligation is not stipulated by the form of the transaction, then the party that bears the risk of accidental loss of the goods during the transportation is itself interested in its insurance.

In the article devoted to insurance issues, the parties to the contract should provide: which cargo is subject to insurance, from which risk, which of the parties to the contract carries out insurance and in whose favour it is carried out.

In foreign trade transactions, insurance is provided mainly for the transportation of goods. The obligations of the parties concerning insurance are determined by the basic terms of the contract. To carry out insurance, a general agreement (general policy) is concluded between the insurance company and the business organization, reflecting the general conditions of insurance. Cargo insurance in an insurance company can be carried out under different conditions.

The terms of the contracts should also include the obligations of exporters to provide buyers with insurance policies or certificates (in the case when the seller is obliged to ensure the goods), which are included in the list of documents to be submitted for payment.

4.12 Force Majeure and Arbitration Clause

In the section of the contract called the “arbitration clause”, the parties establish that any dispute or disagreement is subject, except for the jurisdiction of the general courts, to be referred to either permanent arbitration or ad hoc arbitration, i.e., created by the parties to the transaction each time to resolve one or more disputed issues under a specific contract.

In the arbitration clause, the parties must agree on the following:

- what subjects of dispute are submitted to arbitration;
- in which arbitration the dispute should be considered and whether the rules of this court should be used;
- the substantive law of which country should be used;
- in what place and in what language should the proceedings be conducted;
- the number of arbitrators and the order of their selection.

The most favourable option is to consider the case in International Commercial Arbitration at the national Chamber of Commerce and Industry of the party. An example of a similar formulation:

All disputes and disagreements that may arise from this contract or in connection with it are subject, except for the jurisdiction of the general courts, to resolution in the International Commercial Arbitration Court at the Chamber of Commerce and Industry of (name of the

country) in (name of the city) under the Rules of Proceedings in the said commission. The decision of the arbitration is final and binding on both parties.

Almost all purchase and sale contracts contain an article that allows the postponement of the term of performance of the contract or generally releases the parties from full or partial fulfilment of obligations under the contract in the event of certain circumstances, which are usually referred to as force majeure. The corresponding article in the contract bears the same name.

Force majeure circumstances include various kinds of natural disasters (fires, floods, earthquakes), as well as various political or trade-political situations (war, prohibition of exports or imports). In general, force majeure circumstances can be long- and short-term. The first includes the prohibition of exports (imports), war, blockade, currency restrictions or other measures of governments and governmental bodies. The short-term ones include fires, floods, other natural disasters, freezing of the sea, closure of sea straits, deviations in the way caused by military actions, etc.

Naturally, in the interests of both parties, it is necessary to determine in advance exactly what circumstances they attribute to force majeure, otherwise, these circumstances may be interpreted following the trade customs of the country of execution of the contract. The interests of the seller and the buyer in this case do not coincide. The seller usually seeks to list in the contract the maximum possible number of circumstances, including such as the inability to obtain vehicles, an accident at work, shortage of raw materials, electricity, and labour.

The contracts should provide for a list of such circumstances agreed by the counterparties and the procedure for the parties to the contract to act upon their occurrence. Upon the occurrence of these circumstances, it is customary to immediately notify the other party. Confirmation of the occurrence of these circumstances are the relevant documents, most often—certificates of national chambers of commerce.

The effect of force majeure postpones the term of the contract for a period commensurate with the duration of these circumstances. If these circumstances last longer than the period agreed upon by the parties and specified in the contract, then each of the parties has the right to refuse further performance of obligations under the contract, while neither of the parties has the right to demand damages from the other party. Example of conditions:

Neither party will be liable for the full or partial non-fulfilment of any of its obligations if the non-fulfilment is the result of circumstances such as flood, fire, earthquake and other natural disasters, as well as war or military actions that arose after the conclusion of the contract.

If any of these circumstances directly affected the performance of the obligation within the period specified in the contract, then this period is proportionately postponed for the duration of the relevant circumstance.

The party for which the impossibility of fulfilling the obligation has been created is obliged to notify the other party in writing about the occurrence, expected duration and termination of the above circumstances immediately, but no later than three days from the date of their occurrence and termination. The facts stated in the notification must be confirmed by the Chamber of Commerce or other competent authority or organization of the relevant country. Failure to notify or untimely notification deprives the Seller of the right to refer to any of the above circumstances as grounds for releasing from liability for non-fulfilment of obligations.

If the impossibility of full or partial fulfilment of the obligation exists for more than three months, the Buyer will have the right to terminate the contract in whole or in part without the obligation to compensate for possible losses (including expenses) of the Seller.

In conclusion, it should be noted that contractors who regularly supply goods to the world market widely use standard contract terms. Most often, individual standard contracts are developed by exporters for different modes of transportation (by sea or by land), as well as for different delivery bases. The use of standard contracts can significantly simplify the conclusion of transactions and save time at the final stage of commercial negotiations.

5 Basic Terms of Delivery

5.1 The Concept of Basic Terms of Delivery

Basic terms of delivery are one of the main conditions of an export trade transaction covering the obligations of the signatories (counterparties) for such operations as transportation, customs formalities, banking operations, packaging, labelling, etc. These terms are called *basic* because on their basis the price of the goods under the contract is largely set, primarily depending on whether delivery costs are included in it or not.

5.2 Application of Basic Terms

Several documents influence the formation and practical implementation of the basic terms of delivery. This is primarily the UN Convention on Contracts for the International Sale of Goods (1980), which, in particular, contains specific explanations of the provisions on the delivery of goods by the seller and the transfer of the necessary documents, acceptance by the buyer, the moment when the risk of accidental loss or damage of goods is transferred from the seller to the buyer and several other items included in the obligations of the parties based on delivery, explained in 36.2.

Another important source of the formation of the basic terms of delivery is the transferred national legislation applicable to the contract. National civil law is also a source of an application of the basic conditions—it determines the level of responsibility of the seller or buyer in case of violation of their obligations under the basis of delivery.

But the main international document on the basic terms of delivery is the Rules for the use of domestic and international trade terms—"Incoterms" (International Commercial Terms, INCOTERMS), which are developed by the International Chamber of Commerce to unify them and have the same understanding by counterparties when concluding and executing contracts by participants from different

Table 1 Structure of Incoterms rules

No.	Obligations of the seller	No.	Obligations of the buyer
1	General obligations	1	General obligations
2	Delivery	2	Delivery
3	Transfer of risk	3	Transfer of risk
4	Carriage	4	Carriage
5	Insurance	5	Insurance
6	Delivery/transport documents	6	Delivery/transport documents
7	Export/import clearance	7	Export/import clearance
8	Checking/packaging/marking	8	Checking/packaging/marking
9	Allocation of costs	9	Allocation of costs
10	Notices	10	Notices

countries. Reference to the Incoterms rules in a sale contract clearly defines the parties' respective obligations and reduces the risk of legal complications.

Incoterms rules do say which party to the sale contract should make carriage or insurance arrangements when the seller delivers the goods to the buyer, and which costs each party is responsible for. Incoterms rules, however, say nothing about the price to be paid or the method of its payment. Neither do they deal with the transfer of the ownership of the goods or the consequences of a breach of contract.

Each commercial term is compiled according to a scheme consisting of two main parts: A—obligations of the seller, B—obligations of the buyer. The obligations of the parties arising from a particular delivery basis are grouped into the following areas (see Table 1).

5.3 Use of Domestic and International Trade Terms (Incoterms)

Currently, Incoterms, as amended in 2020, are in force in world trade. They include 11 terms (rules) that provide for various options for combining the obligations of the seller and the buyer. All terms of delivery are divided into the following two groups depending on the type of transport and the method of transportation.

1. Rules for Any Mode or Modes of Transport, Including:

EXW (Ex Works), ex-factory (place of departure)—the goods are transferred to the buyer from the seller's warehouse;

FCA (Free Carrier) (place of departure)—the goods are delivered by the seller to the main carrier of the buyer;

CPT (Carriage Paid To) (place of destination)—the goods are delivered by the seller at the named place of destination of the buyer;

CIP (Carriage and Insurance Paid to) (place of destination)—the goods are insured and delivered by the seller at an agreed place of destination of the buyer;

DAT (Delivered at Terminal) (destination) delivery of the goods by the seller at the named terminal in the buyer's country;

DPU (Delivered named Place Unloaded), (destination)—delivery of the goods by the seller to the agreed destination from the buyer;

DDP (Delivered Duty Paid), (destination)—the goods are delivered by the seller to the buyer, cleared of export and import duties.

The first group is used when there is no maritime transport at all, but it is important to remember, that these rules can be used in the case where a ship is used for part of the carriage.

2. Rules for Sea and Inland Waterway Transport:

FAS (Free Alongside Ship), (port of departure)—the goods are delivered by the seller to the buyer's vessel at the port;

FOB (Free On Board, (port of loading)—the goods are shipped by the seller to the buyer's vessel;

CFR (Cost and Freight), (port of destination)—the goods are delivered by the seller to the destination port specified by the buyer (without unloading);

CIF (Cost, Insurance and Freight), (port of destination)—the goods are insured and delivered by the seller to the agreed destination port (without unloading).

In this group, the point of delivery and the place to which the goods are carried to the buyer are both ports.

The use of Incoterms in the practice of foreign trade is characterized by some features. From a legal point of view, this document is optional or advisory. This means that the partners using its terms in their operations should refer to this document in the contract. For example:

5.4 FCA, 38 Cours Albert 1er, Paris, France. Incoterms 2020

At the same time, it is important to remember that in cases where the contract provides for a different interpretation of trade terms than "Incoterms", the terms of the contract have priority.

The provisions of Incoterms on many issues are general, offering only a principled approach or solution. In this regard, in the relevant sections of the contract of sale, the parties need to specify the details of the distribution of responsibilities between the seller and the buyer, for example, the moment of transfer of risk under the conditions of FCA, CIP and CPT, the distribution of unloading costs under the conditions of CIF and CFR.

Following Incoterms, the seller fulfils his obligation of delivery when it places the goods at the disposal of the buyer on an agreed date or within the time specified

in the contract, as well as at an agreed place and in an agreed manner (for example, “on board at the port of departure”). For example, EXW contracts require the buyer to accept the goods at the seller’s premises (in the warehouse). The specific actions of the seller and the buyer are determined by the obligations and additional terms of the contract. The terms FCA, FAS and FOB provide for delivery in the country of shipment when the goods are transferred to the buyer’s carrier, DAT, DPU, DDP—from the moment the goods are provided to the buyer in the country of destination. The peculiarity of the CIP, CPT, CIF, and CFR is that they provide for the seller to fulfil his delivery obligations in the country of shipment, but at the same time he must conclude a contract of carriage to the destination in the buyer’s country at his own expense.

It is important to emphasize that the delivery of the goods coincides with the moment when the risk of loss or damage to the goods is transferred from the seller to the buyer. Under many terms proof of delivery and the moment of transfer of risk is fixed when the seller provides the buyer with ordinary transport or similar documents. However, with terms such as EXW, DDP, DAT and DPU, it is almost impossible to do this due to the specifics of these terms and conditions and provisions of transport legislation.

Since the creation of the Incoterms rules by ICC in 1936, this globally accepted contractual standard has been regularly updated to keep pace with the development of international trade.

6 Conclusions

The material presented in the chapter sufficiently fully reveals the tasks set in the introduction. The first section analyses the legal framework of international trade, taking into account international agreements, national legislation and desirable terms of transactions for the parties. The following section allows you to understand the algorithm of international trade transactions, starting with the search for partners and ending with negotiations. The third section contains recommendations for the preparation of the contract taking into account international practice, and the final section reveals the specifics of the execution of the contract under various delivery terms.

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International Settlements and Payments, Global Foreign Exchange Market



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Abstract The chapter considers the basics of international settlements and payments, mainly in foreign trade. It also describes major exchange rate factors and the basics of forecasting the exchange rate. Attention is also paid to exchange rate regimes and currency policy in various groups of countries. The chapter ends with an analysis of the global foreign exchange market.

1 Introduction

The chapter considers the basics of international settlements and payments, mainly in foreign trade. It also describes major exchange rate factors and the basics of forecasting the exchange rate. Attention is also paid to exchange rate regimes and currency policy in various groups of countries. The chapter ends with an analysis of the global foreign exchange market.

2 International Settlements and Payments

The major part of international settlements and payments falls on currency exchange transactions, primarily in foreign trade, but transactions of a non-trading and speculative nature are constantly increasing.

From the point of view of the organization, international settlements have the following features:

- they are, as a rule, documentary in nature, i.e., they are carried out upon presentation of documents—financial (letter of credit, cheque, etc.) and commercial (invoice, assignment, etc.);

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- The main types of settlements are unified and carried out based on usages and rules formulated by the International Chamber of Commerce (ICC).

In international trade practice, such forms of settlements as a documentary letter of credit, collection, bank transfer, etc. are most often used. Based on the study and generalization of the problems that arose during the implementation of international settlements in foreign trade, the ICC has developed a Uniform Customs and Practice for Documentary Credits (UCP) and Uniform Rules for Collection (URC).

A documentary letter of credit is a non-cash settlement between the seller and the buyer when the payer’s bank (which issued the letter of credit) undertakes to settle accounts with the beneficiary upon submission to the bank documents stipulated by the terms of the letter of credit and confirming the shipment of goods or the provision of services. The letter of credit form of settlements is the most profitable for the exporter, since in addition to the counterparty’s payment obligation under the contract, there is an independent obligation of the bank to make a payment under the letter of credit, and if necessary, one can obtain a loan to form coverage at the expense of the bank, including credit resources of a foreign bank.

In foreign trade practice, various forms of documentary letters of credit are used. They more closely correspond to the peculiarities of this foreign trade transaction. The most commonly used forms of letters of credit include the following:

Revocable letter of credit—can be revoked by the issuing bank at any time, without prior notification of the beneficiary	Irrevocable letter of credit—cannot be revoked (changed) earlier than the specified period. If there is no indication in the application for the opening of a letter of credit whether the letter of credit is revocable or irrevocable, it is considered irrevocable
Unconfirmed letter of credit is one according to which the bank participating in this operation (the advising one) does not undertake an obligation to fulfil it, but at the same time carefully verifies the authenticity of the letter of credit	Confirmed letter of credit—the one for which, at the request of the issuing bank, another bank participating in the transaction and responsible for fulfilling the terms of the letter of credit, together with the issuing bank, assumes responsibility
Uncoated letter of credit—the one that is not supposed to transfer the amount of coverage to the executing bank when opened	Coated letter of credit, at the opening of which the issuing bank pre-provides the executing bank with foreign currency funds (coverage) to the amount of the letter of credit for the duration of its validity
Back-to-back letter of credit is based on another letter of credit, which is the same in the economic sense, and legally they are independent of each other, for each of the letters of credit the bank assumes independent obligations, independent of the execution of the second letter of credit	Revolving letter of credit—is opened for a part of the contract value with the condition of restoring the original amount of the letter of credit after its full use, or after the submission of each set of documents. This type of letter of credit allows one to reduce the costs of handling contracts for large amounts with a regular shipment of lots of goods for a long time

Collection is a banking transaction through which the bank, on behalf of the client, receives a payment from the importer for the goods and services shipped to him or a confirmation that this payment will be made within the established time. Depending on which documents are used in the collection operation, one can distinguish between the clear collection, i.e., the collection of only financial documents, and documentary collection—the collection of financial documents accompanied by commercial documents, or the collection of commercial documents only.

Bank transfer is a simple order from a commercial bank to its correspondent bank to pay a certain amount of money, at the request and the expense of the transferor, to a foreign recipient (beneficiary) indicating the method of reimbursement to the paying bank of the amount paid. Collection payments, payments for final settlements or advance payments are made in the form of a bank transfer. With the help of the transfer, recalculations for previously concluded transactions are made, or one-time transactions are paid.

Payment in advance is a form of settlement that is most beneficial to the exporter since he receives payment before the delivery of the goods. In international practice, the amount of the advance is 10–30% of the contract amount. In this case, the importer credits the exporter. If the terms of the contract are not fulfilled, the advance is returned to the importer. Advance payments are used in the execution of contracts for the export of ships, cars and expensive equipment with the consent of the importer, with his interest, or under pressure from the exporter.

Open account settlement is used in the form of periodic payments from the importer to the exporter after receiving the goods, and meets the interests of the importer. This form of settlement is used by firms connected by long-term trade relations, with a high degree of mutual trust, or by firms accepting goods for consignment. This form of settlement is less profitable for the exporter, since it does not contain a reliable guarantee of timely payment, slows down the turnover of his capital and sometimes makes him resort to a bank loan.

The SWIFT global interbank system (Society for Worldwide Interbank Financial Telecommunication), established in 1973 is used to transmit information and make payments. About 11 thousand of the large organizations in more than 200 countries are connected to this system. The euro and U.S. dollar together made up more than seven out of 10 SWIFT payments worldwide in December 2021. Noticeable is the Chinese yuan: Despite that China ranks as the world's second-largest economy, the yuan ranked as only the sixth-used currency for international SWIFT payments.

Along with the transmission of financial messages between credit, financial organizations and major corporations around the world, the SWIFT system provides a wide range of consulting services, as well as access to directories, and technical support services for users. Since 2001, the United States has gained access to information from the SWIFT network to track possible terrorist transactions. Thus, information about any payment passing through SWIFT is fully available to the United States.

Some countries and regions also have cross-border interbank systems, for example, in China (CIPS), and the EU (SEPA).

3 Exchange Rate Factors

Economic transactions between participants in international relations cannot be performed without exchanging one national currency for another. The proportions in which the currency of one country is exchanged for the currency of another is called the exchange (foreign currency) rate. In other words, the exchange rate is the value (price) of a monetary unit of one country expressed in monetary units of another country.

The exchange rate fixed at some point in time is called the foreign exchange quotation. Historically, there have been two methods of quoting foreign currency to the national currency—direct and indirect. The most commonly used direct quotation is when a foreign currency is taken as a unit, which is expressed in a certain amount of the national currency. An inverse (indirect) quotation can be used when a national monetary unit is taken as a unit and expressed in the units of foreign currency, i.e., it is the inverse of a direct quotation scheme.

The quotation of two foreign currencies, neither of which is the national currency of the participant in the transaction, or the ratio of two currencies resulting from their exchange rate concerning the third, base (dollar, euro), is called the cross rate. For example, with quotes of $1 \text{ USD} = 0.9311 \text{ SHF}$ (Swiss franc) and $1 \text{ USD} = 8.3410 \text{ SEK}$ (Swedish krona), to calculate the direct cross rate of CHF/SEK based on the dollar as the base currency, one has to divide the dollar rates of these currencies, i.e., $\text{SHF} = \text{USD}/\text{SEC}: \text{USD}/\text{CHF} = 8.3410: 0.9311 = 8.9582$.

For participants in foreign exchange markets (these are primarily banks that sell and buy currency on behalf of their customers), the exchange rate splits into the buyer's rate and the seller's rate (usually formed on the basis of direct quotes). The buyer's rate (purchase rate, bid rate) is the rate at which banks, on behalf of their clients, buy foreign currency for the national currency and sell the national currency. The seller's rate (sell rate, offer rate) is the rate at which banks sell foreign currency and buy national currency.

Banks sell foreign currency for the national currency for more than they buy it at the exchange rate. For example, a Japanese corporation wants to sell (buy) \$1 million for Japanese yen, and the quote is $\text{USD}/\text{JPY} = 118.76/109.81$. This means that when selling \$1 million to banks, the corporation will receive 109,810,000 yen, and when buying, it will pay 118,810,000 yen. The amount by which the bid rate differs from the offer rate is called the spread. Banks can work with a small spread when the currency has high liquidity and set a larger spread when the market trading volumes of this currency are low. If we are talking about the sale of the currency or its purchase from the bank's customers, then the bank itself can set a preferential quote for the client, different from the foreign exchange market.

Not all banks are equally involved in the quotation of currencies on the market and very few banks make quotations for all currencies of the world. However, the largest banks provide their clients with a wide range of quotes. There are market makers—these are the banks that influence the quotes, but for this, the bank must have significant volumes of foreign exchange transactions and a sufficient amount

of its funds. Another group of foreign exchange market participants plays the part of market users. They only make inquiries about the state of the exchange rate and have to agree to the rate formed by active participants in the foreign exchange market.

Market makers for certain currencies are usually located in the issuing countries of these currencies, although this does not always apply to market makers for reserve currencies, primarily the US dollar. Segments of the dollar market can be located in Frankfurt, London and Tokyo, i.e., where transactions with the dollar against national currencies are carried out in very significant volumes.

The formation of the exchange rate is a complex multifactorial process. The main factors are primarily related to foreign trade. For example, according to the purchasing-power-parity theory (Chapter “[World and Global Economy, Global Business Environment, and International Business: Nature, Formation, and Structure](#)”), the basis of the national currency exchange rate is formed by the purchasing power of the national currency, i.e., the ratio by which the value of goods of one country in its national currency corresponds to the value of these goods in other countries in their currencies. However, this theory does not take into account other aspects of international trade— transportation costs of goods, foreign trade barriers, and most importantly—purposeful underestimation of the national currency in many economies to increase the revenue of exporters in this currency, as well as to curb imports (see below).

Along with foreign trade, other forms of international business, especially international capital movements, affect the exchange rate. According to asset-value theory, the exchange rate of the national currency is the price at which non-residents agree to purchase assets of this country. It is important to note that these are mainly income-generating assets, i.e., capital (capital assets), and the purchase of these assets is an investment. With the same level of risk in both countries, non-residents buy assets in another currency primarily when interest rates significantly exceed the rates in their own country, although there may be other reasons—mass privatization abroad, the discovery of new deposits there, consistently high rates of economic growth in other countries and the resulting higher profitability of investment.

Such a rate-forming factor as the balance of payments is analysed in the concept of the impact of the balance of payments on the exchange rate. If a country has a stable positive current account balance, this leads to such an inflow of foreign currency into the country from national exporters that it exceeds the demand for it from national importers. And as a result, the exchange rate of the national currency may grow.

Finally, other factors affect the exchange rate, e.g., the currency (more precisely, exchange rate) policy of the country. For example, the maintenance of a low exchange rate of the yuan (it is determined by the People’s Bank of China, and not on the currency exchange, as in the rest of the BRICS countries) is considered by the EU and the United States as an important reason for the constant growth of Chinese exports to Western countries.

In addition to analysing the current exchange rate, forecasting the future exchange rate is no less important in economic life. If the national currency is expected to depreciate, investors will seek to sell their assets in national currency and buy assets in foreign currency. In currency forecasting, both macroeconomic factors reflecting

the state of the economy of a given country and temporary (conjunctural) factors are taken into account. The former ones include:

- indicators of future economic growth (GDP, industrial production, etc.), as they indicate future profit growth;
- the current balance of payments status;
- the level of inflation and inflation expectations, which may lead to different rates of depreciation of national currencies;
- the level of the interest rate, which indicates the profitability of many financial instruments in the country;
- the solvency of the country and the resulting confidence in the national currency on the world market;
- the unemployment rate.

Factors of a conjunctural nature mainly affect the ratio of supply and demand for foreign currency. These are the factors such as:

- speculative operations on foreign exchange markets, most often on the depreciation of the national currency;
- fluctuations in world prices for the country's main export goods;
- political and economic sanctions against a country, usually lowering the exchange rate of its currency; the currency policy of the country.

Currency market makers predict changes in exchange rates based primarily on interest rate changes, consumer price index (CPI), producer price index (PPI), capacity utilization (CAPU), durable goods orders, business inventory and sales, as well as other indicators (e.g., the presentation of the draft state budget by the ministry of finance to parliament, etc.). Yet one cannot correctly assess future changes in economic indicators for currency markets without taking into account the cyclical state of the economy. The same change in a particular indicator can be interpreted in different ways—depending on which phase of the economic cycle it is observed, and therefore will have different consequences in currency exchange market.

Since the release time of an indicator is known in advance, the market prepares in advance for possible changes using the so-called calendars of economic indicators and the most important events in the life of individual states. Forecasts of indicators appear, which can affect the exchange rate, both in one direction and the other. This movement of the exchange rate may strengthen an existing trend, correct it, or pave the way to a new trend.

This means that even before the publication of indices, the exchange rate changes (following the interpretation of the future event), i.e., the market changes taking into account expectations. In this regard, after the indices and economically significant information are published, and the forecasts are confirmed, the exchange rate is often corrected, i.e., it moves in the opposite direction. This is since positions were opened on expectations, and when the event occurred, these positions are closed and profit-taking is fixed, or profit is withdrawn. The situations when such events occur are characterized by the term “priced in” (i.e., the occurrence of this event is already embedded in the exchange rate). Currency market makers (investment funds, pension

funds, insurance companies, hedge funds) with huge foreign exchange resources can influence the formation of long-term trends in the exchange rate. To decide between buying or selling a certain currency, both fundamental and technical analysis of the exchange market, assessment of the psychological factor, and analysis of interrelated markets are used, allowing market makers to make an advanced decision and make a profit. The statements of the heads of central banks and economic ministries during various reports, summits, meetings, press conferences, etc. (for example, meetings of the leaders of the G7 or G20 countries) can have a serious impact on the exchange rate.

4 Exchange Rate Regimes and Currency Policy

4.1 Exchange Rate Regimes

In world practice, main regimes of exchange rates—fixed, floating—are used as well as their variates and modifications.

The fixed-rate has some important advantages—it reduces the risks and uncertainties created by fluctuations in the exchange rate. However, the effectiveness of fixed exchange rates depends on two interrelated conditions—sufficient official reserve assets to maintain this rate and the absence of a large balance of payments deficit, since large and permanent deficit can negate these reserves.

The floating rate has the advantage that it is automatically adjusted, as a result of which the balance of payments tends to balance. However, even with a floating rate, serious problems can arise. Firstly, an unfavourable change in exchange rates reduces foreign trade of a country (the depreciation of the national currency slows down imports and pushes up exports, and the rise in price—and vice versa). Secondly, the instability resulting from the floating exchange rate in the national currency market reduces the inflow of foreign investment.

There are many currency regimes intermediate between fixed and floating exchange rates. An example would be the currency band, in which the exchange rate floats, but within a fixed currency corridor. But there are even more currency regimes that allow for a revision of the exchange rate due to inflation in the country, changes in its monetary indicators (aggregates), and fluctuations in the dollar and euro exchange rates.

Nevertheless, the freedom of countries to conduct exchange rate policy has limitations set by the IMF. For example, the member countries of the IMF, following its Charter, should: (1) avoid such manipulation of exchange rates that counteracts the long-term movements of capital; (2) carry out currency intervention only to counter disorganizing short-term fluctuations in the value of the national currency unit; (3) when intervening, they should not receive unfair competitive advantages concerning other IMF member countries.

A manifestation of the liberalization of the regulation of the national currency regime was the cancellation of several amendments to the IMF Charter, as a result of which the member states of the Fund had the freedom to choose almost any currency regime (Article IV, Section 2b). In developed economies, the mechanisms of free-market exchange rate formation (freely floating) are used to a greater extent. As for developing economies, most use a peg to the currencies of developed countries. In 2019, approximately 65% of the total number of 190 IMF countries use certain types of fixed exchange rates of national currencies based on the peg of monetary units to other currencies acting as an “anchor”, or to the weighted average value from the currency basket.

According to IMF methodology, fixed exchange rates are divided into “hard and “soft” currency regimes. The most rigid binding (hard peg) is used by more than 20 countries that have fully or partially put into circulation foreign currency as their legal tender. In 12 countries, the currency board is used (tight binding of the national currency to the dollar or euro), including the member states of the Eastern Caribbean Currency Union.

Soft peg includes several options. Of the countries that use this peg, the most striking example is the CFA franc (whose exchange rate is pegged to the euro) in 14 former Western and Central African colonies of France. The total number of countries using “soft peg” mechanism is 99 (at the end of 1999–1963 countries).

For another group of 68 countries, the exchange rates were either free-floating (33 countries, including 19 countries with a common monetary unit of the euro) or floating, i.e., without obligation to maintain any pre-set levels (35 countries).

We repeat that developed countries choose a floating exchange rate, based on the ratio of supply and demand in their foreign exchange market. With free-floating, the central bank resorts to currency interventions only to smooth out overly strong fluctuations in the exchange rate of the national currency. The floating regime is used by the non-euro area EU countries (they maintain a limited flexible exchange rate as part of the policy of floating around the euro), as well as in some less developed countries (India, Brazil, Indonesia, Turkey, Russia, etc.).

4.2 Currency Policy

The currency policy of a country is aimed primarily at ensuring an acceptable exchange rate of the national currency, a stable balance of payments and sufficient official reserve assets. The implementation of monetary policy is usually handled by the central bank of the country.

Currency interventions, which consist of the purchase and sale of foreign currency by central banks, continue to be an important method of influencing the exchange rate of the national currency. To maintain the exchange rate of the national currency, central banks purchase foreign currency on the domestic foreign exchange market, and also use short-term mutual loans with central banks of other countries, often

based on interbank swap agreements (mutual exchange of national currencies with the obligation to reverse exchange, usually for several months).

If there are not enough foreign exchange reserves, the monetary authorities have to take restrictive measures against the participants of the foreign exchange market, obliging all exporters to repatriate (partially or entirely) foreign exchange earnings to their homeland, setting mandatory norms for them to sell part of the repatriated foreign exchange earnings to the central bank, introducing a certain procedure for selling the rest of the foreign exchange earnings on the stock exchange, by setting a different kind of currency restrictions. These measures become an important part of currency controls (see below).

The devaluation of the national currency implies a decrease in its official exchange rate, which more often occurs under fixed-rate regimes or intermediate rate regimes. In conditions of floating exchange rates, the daily increase or decrease in the exchange rate has become a regular phenomenon, reflecting the current situation in the world currency market under the influence of the operations of the largest market makers. In this regard, the term “devaluation” is used for a prolonged decline in the market exchange rate of the currency against the currencies of the country’s main economic partners.

The consequences of the depreciation of the national currency are as follows: exporters receive additional benefits as a result of the exchange of export foreign exchange earnings for a larger amount of national currency, and importers get possible losses since for them the purchase of foreign currency becomes more expensive. Another important effect of devaluation is the actual policy of import substitution in the country, as imported products become more expensive, as well as cheaper assets of the country for foreign investors. From revaluation, i.e., appreciation of the national currency, exporters lose, importers win, including the importers of investment goods, and domestic exporters of capital also benefit.

The regulation of currency transactions is called currency regulation, and the control over compliance with this currency legislation is called currency controls. This control is applied in most countries of the world, except those using the free-floating currency regime.

4.3 Currency Convertibility

A currency is considered non-convertible if the issuing state restricts or prohibits its exchange for foreign currencies on current account transactions (chapter “[Balance of Payments](#)”). Partially convertible is the national currency, in the country of which some restrictions on transactions related to international capital movements remain. Under the regime of full convertibility, all owners of the currency may use it for the purchase and sale of foreign assets.

4.4 *The World Monetary System and Reserve Currencies*

The world monetary system is part of the international monetary and financial system (just as currency policy is often considered part of monetary policy). Based on the fact that the international monetary and financial system was considered as a whole in chapter “[Resources of World Economy: Financial Capital](#)”, we will only add that the world monetary system is based on world money.

The role of world money in modern conditions is performed by reserve currencies, i.e., those in which the central banks of the world hold, in addition to gold, their reserve assets. These are primarily the US dollar (58.8% of world official foreign exchange reserves at the end of 2021), the euro (20.6%), Japanese yen (5.6%), pound sterling (4.8%), Chinese yuan (2.8%), Canadian dollar (2.4%), Australian dollar (1.8%) and Swiss franc (0.2%) as well as SDR (Special Drawing Rights issued by the IMF). These currencies account for the same bulk of turnover in the global foreign exchange market (see below).

5 **Global Foreign Exchange Market**

The global foreign exchange market (Forex or FX) is geographically formed primarily by international financial centres. Among them, New York and London are traditionally leading, Paris, Frankfurt, Madrid, Amsterdam and Zurich are other financial centres in Europe, Los Angeles, San Francisco, Chicago, Boston and Washington DC are financial centres in Northern America, and Hong Kong, Shanghai, Singapore, Beijing and Tokyo are the financial centres in Asia (The Global Financial Centers Index 31, 2022). Among the numerous financial transactions, these centres actively purchase and sell foreign currencies. At the same time, it is often unrelated to servicing international business but is carried out to obtain speculative profit. Since these centres are located in different time zones, they work around the clock, and information systems use GMT—Greenwich Mean Time.

In terms of the volume of transactions, the global foreign exchange market significantly exceeds other segments of the global financial market. For example, in 2019, before the start of COVID 19-pandemic, currency trading on the world currency markets reached \$6.6 trillion per day. This is ten times higher than the volume of world trade in goods and services, and also many times higher than the volume of world GDP, which is explained by the fact that during the year the same currency repeatedly changes hands. As can be seen from Table 1, reserve currencies prevail in these transactions.

Transactions on the foreign exchange market occur with immediate delivery of foreign currency, usually within one to two business days (spot transactions), or with delivery in the future (forward, futures transactions). And that is why there are cash and time currency markets (the former uses the spot rate, while the latter deals with the forward rate).

Table 1 The share of currencies in the average daily turnover of the global foreign exchange market, %^a

Currency	Indicator			
	1998	2007	2013	2019
US Dollar	86.8	85.6	87.0	88.3
Euro	–	37.0	33.4	32.3
Japanese Yen	21.7	17.2	23.0	16.8
Pound Sterling	11.0	14.9	11.8	12.8
Australian Dollar	3.0	6.6	8.6	6.8
Swiss Franc	7.16	6.8	5.2	5.0
Canadian Dollar	3.5	4.3	4.6	5.0
Mexican Peso	0.5	1.3	2.5	1.7
Chinese Yuan	0.0	0.5	2.2	4.3
New Zealand Dollar	0.2	1.9	2.0	2.2
Swedish Krona	0.3	2.7	1.8	2.0
Russian Rouble	0.3	0.7	1.6	1.1
Hong Kong Dollar	1.0	2.7	1.4	3.5
Norwegian Krone	0.2	2.1	1.4	1.8
Singapore Dollar	1.1	1.2	1.4	1.8
Turkish Lira	...	0.2	1.3	1.1
Brazilian Real	0.2	0.4	1.1	1.1
Other currencies	9.4	9.5	9.7	2.2
All currencies	200	200	200	200

Sources Triennial Central Bank Survey. Foreign exchange turnover in April 2013 <http://www.bis.org/publ/rpfx13fx.pdf>; Triennial Central Bank Survey. Foreign exchange turnover in April 2019 https://www.bis.org/statistics/rpfx19_fx.pdf

^a200% instead of the traditional 100% is used in the table since it reflects both the purchase and sale of currency

As in any market with rapidly changing prices, speculators operate on the foreign exchange market. One of the most common forms of speculative operations is the carry trade—the purchase of foreign currency on one national market for sale on another foreign exchange market to get profit from the difference in the quotations of this currency in these markets. If there is a difference in quotations, then it is very small, but with large-scale arbitrage operations, the profit can be tangible.

Electronic currency trading is carried out through dealing systems, the most famous of which are REUTERS dealing 2000, Telereuter, and TENFORE. Modern information and analytical technologies have made it possible to create neural network trading systems that allow not only the buying and selling of currency, but also solving complex problems of forecasting exchange rates, assessing currency risk and its insurance, determining and predicting cross-currency rates, ensuring maximum profit when operating in various currency and financial markets.

The peculiarity of the modern foreign exchange market is that more than 90% of all transactions are made, not on currency exchanges, but in the over-the-counter or interbank foreign exchange market. The main participants in foreign exchange transactions are banks, primarily multinational ones, which make about 95% of foreign exchange transactions in the interbank foreign exchange market. But the organized foreign exchange market, represented by currency exchanges, remains; moreover, currency transactions are carried out on many other, non-currency, exchanges, trading financial derivatives (see chapter “[Global Financial Market](#)”).

An important segment of the global foreign exchange market is eurocurrencies market. These are currencies held outside their home market. This market originated in the late 1950s in Europe, hence its name. Currency exchange, credit and other operations are carried out there, i.e., it is a universal international financial market. The circulation of currencies that have broken away from the control of the central banks of the issuing countries (for example, the dollar from the Fed) is carried out through commercial banks located outside the sphere of national currency circulation. In other words, transactions on the eurocurrencies market are carried out by the participants who, according to the legislation of the country where these transactions are carried out, are non-residents. And, therefore, the prefix “euro” indicates only the withdrawal of national currencies from the control of national currency regulation and banking supervision authorities. The main euro currency was originally the Eurodollar, which continues to be the leader at present: transactions using the dollar account for about 50% of transactions with the euro currency. London is still the largest centre of operations with eurocurrencies and euroassets.

6 Conclusions

1. The main part of international settlements and payments falls on currency exchange transactions, primarily in the trade of goods and services, but international settlements on transactions of a non-trading and speculative nature are constantly increasing. In international trade practice, such forms of settlements as a documentary letter of credit, collection, bank transfer, payment in advance and open account settlement are most often used.
2. The proportions in which the currency of one country is exchanged for the currency of another is called the exchange (foreign currency) rate. The formation of the exchange rate is influenced primarily by factors such as the purchasing power parity of the national currency, the country’s participation in the international movement of capital, the state of the current balance of payments and the country’s monetary policy.
3. In world practice, they are used as the main modes of exchange rates—fixed, floating, etc. In developed countries, the mechanisms of free-market exchange rate formation (freely floating) are used to a greater extent. As for developing countries, most of them use a peg to the currencies of developed countries.

4. The currency policy of a country is aimed primarily at ensuring an acceptable exchange rate of the national currency, a stable balance of payments and sufficient official reserve assets. The implementation of monetary policy is usually handled by the central bank of the country.
5. A currency is considered non-convertible if the issuing state restricts or prohibits its exchange for foreign currencies on current account transactions. A partially convertible national currency is considered to be one in which only restrictions on transactions related to international capital movement remain in place. Under the regime of full convertibility, all owners of the currency may use it for the purchase and sale of foreign assets.
6. The global foreign currency exchange market is geographically formed primarily by international financial centres. New York and London are traditionally the leaders among them. The peculiarity of the modern foreign exchange market is that it is disorganized and more.
7. More than 90% of all transactions are made, not on currency exchanges, but on over-the-counter or interbank foreign exchange markets. The main participants in foreign exchange transactions are banks, primarily multinational ones, which make about 95% of foreign exchange transactions in the interbank foreign exchange market. But the organized currency market, represented by currency exchanges, remains, moreover, currency transactions have been carried out on other, non-currency, exchanges.
8. An important characteristic of the modern world currency market is the intensive development of such a segment as the eurocurrencies market. These are currencies held outside their home market. This market originated in the late 1950s in Europe, hence its name. The circulation of currencies that have broken away from the control of the central banks of the issuing countries (for example, the dollar from the Fed) is carried out through commercial banks located outside the sphere of national currency circulation.

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International Knowledge Transfer



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Abstract This chapter examines the forms and advantages of international technology transfer for developed and developing countries, and the features of modern scientific migration in the context of digital technology development, as well as key aspects of the implementation of educational exchange programmes in different countries of the world.

1 Introduction

The international transfer of knowledge may have become the most significant form of international business. However, its statistical measurement presents a major challenge as knowledge can be transferred for free (therefore the name of this form of international business is twofold—not only trade, but also a free of charge exchange, for example, via the Internet free transfer of knowledge) as well as transmitted together with the exported goods, being reflected in their price (for example, services for the installation and operation of equipment). As a result, it is possible to statistically track only some elements of international knowledge transfer. The chapter focuses on international trade in technology, international scientific exchange and international educational exchange.

2 International Trade in Technology

International trade in technology is a cross-country technology transfer on a commercial basis. The main participants in the international trade in technology are MNEs.

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To a much lesser extent, knowledge and technology are sold abroad by national companies, as well as research institutes that commercialize their innovations.

Technology is presented in international trade both in an intangible form as intellectual property objects (inventions, utility models, industrial designs, know-how, computer programmes) and in a material form, i.e., embodied in goods. In world practice, technology transfer in intangible form is carried out through the following channels:

- vertical transfer (internal)—within the branch network of multinational enterprises;
- horizontal transfer (external)—based on the conclusion of licensing agreements between independent firms.

Vertical technology transfer, which is a cornerstone of MNEs integrated functioning is carried out not only on a non-commercial, but also on a paid basis. This transfer channel allows the patent owner to use the technology retaining its monopoly rights as well as manage its R&D expenditure by placing research units in the most favourable regions. Vertical technology transfer is also used by MNEs as a tool to minimize tax payments, in case the affiliates are registered in offshore jurisdictions.

Horizontal technology transfer is implemented when a firm is not able to ensure proper control and expansion of manufacturing activities based on patent ownership or is strategically focused on conducting research rather than producing final goods.

Commercial forms of technology transfer (i.e., on a paid basis) include:

- transfer of IP rights to use scientific and technical information (design solutions, patents, know-how, registered trademarks, industrial designs, subcontract production, franchising, etc.);
- formation of strategic alliances between MNEs to conduct joint research activities;
- provision of engineering services (construction of turnkey production facilities);
- consulting services.

These forms of technology transfer are universal, formalized on a contractual basis and allow to quantify the intensity of international technology trade in an intangible form.

The theoretical basis explaining the motives for the implementation of MNEs' international technology transfer is the concept proposed by John Dunning and known as the "eclectic paradigm".

J. Dunning identifies three groups of advantages that characterize the activities of MNEs

The first group consists of the advantages of a company associated with the ownership of any assets that are inaccessible to competitors (owner-specific advantage, abbrev. as "O"). These assets include both tangible resources (access to natural

resources, capital and labour) and intangibles (intellectual property, managerial, marketing and entrepreneurial skills, an effective form of organizational structure, etc.)

The second group comprises the advantages associated with the location (location-specific variables, abbrev. as “L”). These advantages are specific to a particular country and consist of the production factors available to all companies, as well as the political, institutional legal system and government policy

The third group includes the advantages associated with the internalization of the company’s activities (internalization-specific advantage, abbrev. as “I”), such as the effectiveness of hierarchical organization of production, economies of scale, the company’s ability to obtain monopoly profits from the use of the assets (for example, intellectual property), reduction of transaction costs, lower tariff barriers, etc.

Based on the combination of these three groups of advantages, MNEs carry out their activities. For example, having the ability to produce goods based on some unique assets (O-advantages), the company considers entering a foreign market either through exports or by establishing a foreign production affiliate. Strategy depends on the L-advantages of the country. If they are favourable for the establishment of a branch (for example, preferential legislation, sufficient level of protection of property rights, existing import barriers that need to be avoided, etc.), then the company turns to the analysis of I-advantages. In case the advantages are in place as well, the company is expected to establish a branch in the relevant country

As it follows from the abovementioned theory the main competitive advantage of an MNE is the company’s O-advantages, which almost entirely consist of technological competencies. They can be presented in the form of intellectual property or non-patented innovations. Moreover, the activities of MNEs are aimed at the effective use of their O-advantages, including through the technology transfer, as well as at building up unique assets through foreign investments, international mergers and acquisitions, the formation of technological alliances with other MNEs, etc. Such a corporate strategy is the key reason for international technology transfer.

In general, the state of international trade in technology is determined by long-term indicators of the world economy, as well as the dominant technological profile of those countries that are considered to be innovative leaders at a given time. One of the important conceptual explanations of this phenomenon is the theory of “long waves”, developed by Nikolai D. Kondratiev. According to this theory, long-term cyclical fluctuations in the world economy arise from periodic changes in the technological foundations of production processes.

According to this theory of “long waves”, the world technological development is carried out with a periodicity of 40–60 years. At the heart of each new cycle lies a set of new innovations that launch the process of accelerating economic growth. The first three “long waves” were studied by N.Kondratiev himself; further periodization has been proposed by modern researchers:

- The first wave (1770–1830)—the invention of the steam engine and looms;
- The second wave (1830–1880)—the coming of the railways and the mechanization of engineering processes;
- The third wave (1880–1930)—the emergence of electricity, cars, conveyor production processes;
- The fourth wave (1930–1980)—the development of the electronic industry, nuclear power, the creation of new materials;
- The fifth wave (1980–2030)—the development of information technologies, robotic production, microelectronics, biotechnology and genetic engineering.

2.1 *Technology Trade in Tangible and Intangible Form*

To assess the quantitative indicators of the international trade in technology, it is necessary to consider both its forms—tangible and intangible.

To calculate the trade in technology in material form, it is necessary to distinguish the level of knowledge-intensity of goods. According to the OECD classification, such mark as the share of R&D costs in value added permits to rank industries as high-tech (high-technology), medium-high-technology, medium-low-technology and low-tech (low-technology). High-tech industries include aerospace and pharmaceutical industries, the production of precision scientific and medical equipment, as well as computers, communications and telecommunications equipment. It can be assumed that international trade in products of these industries is international trade in technologies in material form (Table 1).

The top ten exporters of high-tech goods include the largest developed countries, as well as several developing countries led by China, whose leadership is mainly

Table 1 The leading countries in terms of high-tech exports in 2020, \$ billion

	Export volume
China	758
Hong Kong, SAR of PRC	340
Germany	182
Korea, Rep. of	164
Singapore	160
United States	142
Japan	103
Vietnam	101
Malaysia	92
Netherlands	87
France	87
World	2854

Source World Bank Open Data

Table 2 The leading countries in payments and receipts of royalties and licence fees in 2021, \$ billion

	Indicator	
	Receipts	Payments
United States	125	47
Ireland ^a	18	133
Germany	59	21
Japan	48	30
Netherlands	37	35
China	12	47
Switzerland	30	27
United Kingdom	23	18
Singapore	12	18
France	15	13
World	445	515

Source: World Bank Open Data

^aThe high volume of royalties and licence fees payments in Ireland is due to the peculiarities of its legislation, which enable MNEs to use this jurisdiction as a tool to lower taxable incomes

due to a significant number of assembly plants that operate to fulfil orders placed by foreign MNEs.

Technology trade in an intangible form shows another geographical distribution and a leading role of the countries with extensive research potential (Table 2).

The above statistics help to consider the current trends in international trade in technology and identify its main prospects.

Firstly, international trade in technology (both in tangible and intangible form) has been growing at a faster pace in recent decades compared to that of the world trade in goods. According to the World Bank data, the share of high-tech exports in manufactured exports amounted to 11% in the 1970s, whereas by 2021 it has doubled and reached 22%. This can be explained both by the increase in total number of high-tech goods in the world and the relative rise in their price compared to that of less R&D-intensive products. A similar trend is observed for royalties and licence fees, as the relevant payments have been growing faster than the international trade over the same period of time. From 2000 to 2021, international payments of royalties and licence fees grew almost eightfold, while the total volume of the world trade in goods increased only threefold. At the same time, it should be noted that the indicators of 2020 and 2021 did not exceed the peak volumes of the previous years due to the COVID-19 pandemic,

Secondly, both developed and developing countries are involved in the international trade in technology, but their participation in this process significantly varies. Developing countries, which are net importers of technologies in an intangible form, demonstrate a steadily negative balance of royalties and licence fees with developed

countries. At the same time, the share of developed countries in international royalties and licence fees receipts and payments vastly exceeds the corresponding share of developing countries, as a result of significant flows of such payments between developed countries. Meanwhile, a number of developing countries, primarily China, are major exporters of high-tech products, i.e., technology in material form, which is explained by the abovementioned reasons.

Third, international trade in technology is closely linked to international capital flows in the form of foreign direct investment. As a rule, multinational corporations, within the framework of corporate strategies, actively use the opportunities arising from the transfer of technology abroad. At the same time, international licencing acts not only as an element of production strategies, but also as a means to reduce tax payments when using favourable jurisdictions.

Fourth, the mechanisms of legal regulation of this sphere, including intellectual property rights, as well as the state of development of international and national legislation are important factors affecting the international technology transfer. The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), law provisions relating to technology transfer that are fixed in UN documents, as well as in economic integration treaties, are key sources for the legal regulation of the international trade in technology.

Fifth, new relevant issues have emerged in the global economy relating to the dissemination and access to innovations by all stakeholders. The COVID-19 pandemic has sharply raised the question of the limits of patenting and the possibilities of manufacturing pharmaceutical products on a global scale, and, above all, in the interests of developing countries. An equally urgent issue is the transition to a “green” economy, which also requires the comprehensive use of inexpensive and efficient technologies in various industries to reduce the emissions of greenhouse gases.

3 International Scientific Exchange

During the first 20th anniversary of the 2000s, the volume and intensity of international mobility of scientific personnel sharply increased, forming the phenomenon of “circulation of professional personnel” (brain circulation). Digitalization of scientific ties has expanded scientific contacts, increased their effectiveness and led to the transfer of part of the cooperation to an online format. Digital technologies also accelerate and simplify the flows of scientific migration, allowing you to establish regular contacts with partners, expand the range of counterparties and the geography of interaction. The development of data-sharing, open science and digital platforms provide an additional incentive to expand international cooperation and scientific exchange. At the same time, geopolitical factors, technological wars and the spread of the idea of “technological sovereignty” in a number of countries and regions have had an increasingly negative impact on the development of international scientific contacts, their directions and configuration.

The mobility of researchers can be direct (physical movement of a specialist) and hidden (work under foreign contracts, provision of services, etc. without physical change of place of work). The drivers of international scientific mobility are the conditions of scientific work, international scientific networks, the prestige of a scientific organization, career prospects and the opportunity to work with leading specialists. Material conditions also play an important role—the amount of wages, pension and social security, cultural and religious factors and geographical proximity.

International migration of scientific personnel has various forms: short-term relocation to another country in order to improve their skills, followed by a return to their native country to occupy a more advanced long-term position; long-term migration due to the desire for career and professional growth in another country and, finally, moving to another country due to socio-economic problems, where the main driving motive is the economic factor and obtaining the status of a resident. In recent years, the volume of short- and medium-term movements of researchers between countries within the framework of a network of “horizontal” cooperation has been growing, which expands the scope of brain circulation.

International mobility of scientists has a positive effect on both the host and the “native” country. According to OECD estimates, the quality of publications of scientists who have worked abroad is 20% higher than those who have not left. Building a knowledge economy and globalization processes, and in the last decade, the course towards digital and “green” restructuring of the economy has turned scientific and professional personnel into the most in demand and critical resource. Countries and their institutions are increasingly competing for talent to create international-level competence centres.

State programmes for attracting foreign scientists operate in Germany, France, Great Britain, China and a number of other countries. Within the framework of the EU, a course has been taken to accelerate the creation by 2035 the European Research Area (ERA) that provides for increasing the efficiency of national research systems, a single market for researchers, achieving an optimal balance between transnational cooperation and competition, improving the circulation of knowledge and increasing the socio-economic effect of R&D. In the coming years, in order to deepen the cooperation of policies in the field of education, science and innovation, it is planned to integrate ERA with a single European Higher Education Area (EUA), the formation of which began in 2009. To this end, the European information and advisory portal, EURAXESS, provides comprehensive information on career opportunities in 50 countries around the world, including 42 European countries.

Countries with high R&D expenditures are characterized primarily by high short-term mobility of scientific personnel (internal and external). According to OECD estimates, over 70% of specialists with a scientific degree in Germany and Denmark, about half—in the Netherlands, Israel, from 20 to 30%—Lithuania, Hungary, Latvia, Turkey, Portugal, and in Russia—about 20%, have changed their place of work within the last ten years (within the country and going abroad).

The intensification of geopolitical conflicts, military actions and socio-economic instability caused the migration of refugee scientists. Thus, in Venezuela, out of 12,850 researchers in 2014, by 2016 there were only about 3,000 researchers left

(UNESCO Science Report, 2021). Most of the refugee scientists seek work in developed countries, but some choose developing countries with increasing R&D costs, such as Malaysia and South Africa. Special programmes for the admission of refugee scientists have been adopted in a number of countries, in particular in France in 2017 and in the Netherlands in 2018. The European Science4Refuges platform, coupled with the EURAXESS platform and network, helps refugee scientists find jobs in the European scientific system.

Political decisions of national governments, as well as the COVID-19 pandemic, have had a serious impact on the mobility of scientific personnel. Thus, the UK's exit from the EU led to an outflow of scientific personnel from the country and changed the flows of mobility in Europe. If in 2015 the UK was a net importer of scientists, then in 2020 the net outflow was 1,300 people. A similar process was observed in the USA. In 2015, the country was the most attractive global centre of attraction for scientific personnel—the net inflow of personnel amounted to about 1,300 scientists, by 2020 this number had decreased to 1,000 people, including due to visa restrictions. At the same time, China has become a net importer of scientific personnel—in 2020, about 1800 scientists arrived in the country.¹

One of the indicators of the expansion of international scientific cooperation is the increase in the number of foreign co-authors in publications and patents. The methods of bibliometric analysis and its various parameters (the dynamics of joint publications, the number of citations, the geography of co-authorship, etc.) make it possible to assess the scale, depth and effectiveness of scientific cooperation. In 2000–2019, the number of scientific articles with co-authors from other countries in the world increased from 14 to 24%. The high quality of international cooperation is confirmed by a higher citation index compared to the indicator for in-country publications. The top four in terms of the share of joint work in-country publications in 2019 included the UK (65%), Australia (62%), the EU (47%) and the USA (41%) (UNESCO Science Report, 2021). Patent co-authorship is less widespread in the world than publication (except India). However, it has also grown significantly over the past 20 years—from 5 to 11%.

The crisis associated with the COVID-19 pandemic, on the one hand, intensified scientific exchange and cooperation, primarily in the field of combating the virus, accelerating the processes of digitalization of scientific ties and the transition of scientific mobility to an online format (reducing logistical and organizational costs, expanding the geographical coverage of partners and the inclusion of new actors, primarily inclusive groups). On the other hand, the restrictive limits of digitalization of scientific interaction were demonstrated, including cyber security, ethical issues, the importance of direct contacts for researchers in solving a number of scientific problems and the formation of network cooperation.

¹ Scientists leave the UK as China overtakes the US as the most favoured destination. https://sciencebusiness.net/news-byte/scientists-leave-uk-china-overtakes-us-most-favoured-destination?utm_source=Science%7CBusiness+Newsletters&utm_campaign=0bf019da6e-EMAIL_CAMPAIGN_4_26_2021_17_43_COPY_01&utm_medium=email&utm_term=0_179178d214-0bf019da6e-138189413.

4 International Educational Exchange

International educational exchange is developing in the following main areas: mobility of students and the teaching and administrative staff of educational institutions, the formation of international standards of education, mobility of educational programmes and the creation of strategic educational partnerships. This is reflected in the growth in the number of students and teachers participating in academic mobility programmes, the number of cross-border, joint educational programmes and double degree programmes, distance and virtual international educational programmes, courses in foreign languages, in the expansion of partnerships and the opening of foreign branches of major universities, and in the creation of new organizations focused on international education, regional university centres and educational clusters.

Foreign education provides an opportunity to acquire new, higher-quality competencies and skills, as well as access to markets that allow you to get a high return on the acquired knowledge, including their monetization and career growth. For recipient countries, foreign students serve as additional income due to higher tuition fees compared to domestic students, and in some countries due to registration fees. In the case of consolidation in the country after graduation, foreign students serve as an additional source of qualified employment and age balance maintenance.

Student mobility flows create the basis for subsequent scientific mobility and brain circulation, while being of a more lasting and profound nature compared to factors of linguistic or geographical proximity. The intensity of student mobility increases with increasing levels of education. According to OECD estimates, the share of foreign students in bachelor's degree programmes in developed countries is 3–5%, in master's degree—14%, and in doctoral studies—22%. In countries such as France, Great Britain, Switzerland, the Netherlands and Luxembourg, the share of foreigners in doctoral studies reaches 40%.

In recent years, competition between universities for attracting foreign students, considered as a major source of income and financing of scientific activities, has sharply intensified. As a result, universities not only conduct large advertising campaigns, but also adapt the educational process to foreigners, creating online platforms and courses, offshore campuses and providing dual degrees.

In 2000–2019, the number of students studying abroad in the world increased by more than 2.5 times and exceeded 6.1 million people, mainly due to students from Asia (the latter account for 56% of all foreign students, most of whom are from China, India and South Korea, and European countries are in second place—21%). The USA, Great Britain, Germany, France, Australia and Canada are the leaders in the reception of overseas students. The USA leads the world in attracting international students (977 thousand people in 2019, which was 23% in OECD member countries), in second place are universities of Australia and the UK (579 thousand people and 489 thousand people, respectively, about 12%), Germany is in the third place (333 thousand people).

Table 3 Indicators of the intensity of knowledge exchange in the world, %

	Indicator	
	Foreign student enrolment as a share of total tertiary enrolment in 2019, %	International scientific co-authorship as a share of total publications in 2020, %
USA	5	40
Japan	5	33
Korea, Rep. of	3	31
United Kingdom	19	65
France	9	61
Germany	10	55
Italy	3	50
EU, on average	8	47 (2019)
OECD, on average	8	n/a
China	n/a	22
India	n/a	22
Brazil	n/a	35
South Africa	4	29 (2019)
Russia	4	25

Sources OECD (2021), Education at a Glance 2021: OECD Indicators, OECD Publishing, Paris; The State of U.S. Science and Engineering 2022. January 2022. <https://nces.nsf.gov/pubs/nsb20221/u-s-and-global-science-and-technology-capabilities>; UNESCO (2021)

The most ambitious project in the field of educational exchange is the creation of the European Higher Education Area (EUA), one of the most important directions of which is the project to create a transnational network of 60 European universities. The basic element of this space is the Bologna Process, which encourages international migration of bachelors. In total, about 50 countries are currently participating in it. In the EU, the main mechanism for stimulating educational exchange is the pan-European Erasmus+ programme. In the Nordic and Baltic countries, the Nordplus Higher Education Programme supports student and teacher mobility between these regions.

Table 3 presents indicators of the intensity of knowledge exchange in the world.

5 ERASMUS and Other Global Exchange Programmes

Historically, the basic scheme of international exchange in the field of education is a formal exchange of students between two partner universities during one semester or one academic year, with one student from the first university exchanging another student from the second university (other schemes involve exchange for specific

educational programmes or student groups) (Education Systems..., 2021). This scheme has a number of advantages: tuition costs, medical insurance and housing are paid by students at their own university before the trip, which makes the cost of the programme economically acceptable, and the learning process is more flexible when students attend classes during the exchange period and fulfil all other academic requirements of the host institution and form reports to their university upon completion of the exchange.

One of the long-standing programmes of the DAAD (German Academic Exchange Service) was established back in 1925 to support joint educational projects and cooperation between foreign and German higher education institutions, and now it is formally a public organization with a special diplomatic status equated to state institutions. To date, DAAD has an extensive network of 130 representative offices in 67 countries around the world. At the same time, more than 250 higher educational institutions and 130 student unions in Germany are currently members of DAAD, and more than 1,500 universities and institutes around the world are participants in the programmes. Participants of the educational exchange system are offered grants of 850 euros for 3–4-week educational courses in Germany, including transportation costs and accommodation. In general, foreign students choose Germany primarily because of the policy of no tuition fees in the country for all higher education students, and the possibility of subsequent employment, although recently the Netherlands, France and Spain have become increasingly competitive in educational exchange programmes.

The largest and most effective international educational transfer programme is the ERASMUS (European Region Action Scheme for the Mobility of University Students) initiated by the EU,² which has been implementing exchanges on the territory of European states for more than 35 years. Moreover, the peculiarity of these programmes is the provision of grants for students, scientists and teachers to move (up to 500 euros) and stay on the campus of the host university (up to 800 euros monthly). The specific amount of the grant depends on many factors: the number of students who have applied, the difference in the cost of living between countries, the availability of other grants, etc.

Statistics show that about 10% of all EU students study at foreign universities with the support of public and private foundations, and half of this number receives an ERASMUS grant. Initially, all EU member states participated in it, as well as Iceland, Liechtenstein, Macedonia, Norway and Turkey.

Currently, the updated ERASMUS+ programme is functioning, the symbol of which is the increase in the number of directions and geography of the participating countries—the programme is focused on supporting cooperation in the field of education, vocational training, students, postgraduates, masters and teachers. ERASMUS+ combines most of the previously existing international mobility programmes in the field of education, sports, volunteer youth movement and personnel training. The

² Also, the name of the ERASMUS programme is consonant with the name of Erasmus of Rotterdam, a Dutch Renaissance philosopher who traveled to many European countries, wanting to acquire the necessary knowledge and experience.

budget for 2014–2020 amounted to 15 billion euro to support 4 million interested in training and internships, and from 2021 to 2027, a budget of 26 billion euro is planned for the implementation of the following modules: Erasmus+: Comenius (for schoolchildren); Erasmus+: Erasmus (for students); Erasmus+: Erasmus Mundus (for undergraduates); Erasmus+: Leonardo da Vinci (vocational education); Erasmus+: Grundtvig (adult education); Erasmus+: Youth in Action (informal youth education); Erasmus+: Jean Monnet (study of the European Union); Erasmus+: Sports (sports sphere).

In fact, the ERASMUS and subsequently ERASMUS+ programmes established a certain standard for organizing international exchanges for students. Thus, the programme applies to students starting from the second year of study and older, and students must engage in scientific research in their specialty or training profile and compose a motivational letter explaining and confirming their intentions and the effects of knowledge transfer. Continuing education according to an appropriate and agreed curriculum (from 3 months or one academic semester to one academic year) or an internship can be obtained only at the university that has concluded an agreement on the ERASMUS+ programme—thanks to the well-established system of interactions formed over 35 years of the programmes, an effective system of informing and facilitating participation in international student exchange programmes. A special requirement should be the presence of a certificate confirming the language level of at least B2 (TOEFL, IELTS) or Language Passport.

The main document regulating relations within the framework of international educational exchange in accordance with ERASMUS+ programmes is the Learning Agreement, which includes: a list of disciplines to be studied by a student at the host university and their corresponding academic units; a list of disciplines that will be transferred upon return to their university. This is an important aspect, since ERASMUS+ pays the scholarship to participants in two payments: 70% of the grant a couple of weeks before the start of training, and the remaining 30%—after graduation, if the student has successfully completed the programme. If a student does not pass the necessary disciplines according to the results of the semester, then he or she is obliged to return the entire amount of the grant.

An important block of the global educational transfer system (*Discourses of Globalization...*, 2022) is currently the Master's degree programme under the Erasmus Mundus scholarship. Unlike the exchange programme, students from all over the world can enrol in it as independent candidates: it does not matter if there is an agreement between the university and ERASMUS+, while studying takes place in not one, but several universities (all semester students move to a new country, which means they change university). At the end of the Master's course, students receive a joint or double/multilateral diploma. Individual teachers within the framework of international staff mobility, for research, teaching or training activities and educational institutions can also participate in the programme. Every year, the EU determines a quota for the number of grants issued to foreign participants, and the amount of the grant per student is up to 9,000 euros per year, depending on the educational programme and the country of residence.

In different countries of the world there is an effective practice of grants within the framework of student and academic international exchanges. For example, in the USA—Fulbright U.S. Student Programme, in Germany—the aforementioned DAAD, in the UK—Study Abroad Studentships, in France—the Eiffel Excellence Scholarship Programme, in Japan—the Otsuka Toshimi Scholarship Foundation, in Norway—the High North Fellowship, in Brazil—Science without Borders (SWB), in South Africa—GROW Abroad, in Australia—the New Colombo Plan and in Hong Kong—the Ph.D. Fellowship Scheme (HKPFS). The state programme, “Global Education”, is being implemented in Russia to finance the education of citizens enrolled in the world’s leading universities.

The bulk of American educational exchange programmes are implemented on the basis of the Fulbright-Hays Act (Mutual Educational and Cultural Exchange Act of 1961). Back in 1915, the history of AFS Intercultural Programmes began as a wartime humanitarian organization, which is now an international organization for student exchange, volunteering and intercultural learning, which received UNESCO consultative status. The Fulbright Programme, sponsored by the US Department of State, celebrated its 75th anniversary in 2021 and is an example of public diplomacy promoted through higher education, since educational and cultural exchanges are designed, not only to promote mutual understanding between people and nations, but also to form the values of freedom, the rule of law and personal dignity. In the USA, there is a network of the State Department Education, which includes 430 international consulting centres located in US embassies and consulates, partner universities, etc., for students in more than 175 countries and territories. The network’s activities are aimed at promoting higher education in the United States for students from around the world, creating study opportunities in more than 4,000 accredited institutions.

In addition to the Fulbright programme, there are also a number of similar programmes in the USA, the most famous and significant of which are: the Benjamin Franklin Transatlantic Fellows Summer Institute Programme, the Hubert H. Humphrey Programme, the Edmund S. Muskie Programme, the Future Leaders Exchange, the Global UGRAD Programme and a number of others. These programmes have an industry orientation and are designed for different categories of students and different regions. Private foundations and institutes (Macmillan 2021) play a huge role in the implementation of international educational programmes in the USA today, among which the most famous are the American Association of University Women Educational Foundation (financial support for women with higher education and academic degrees, grants and scholarships, organization of scientific and educational events), the Bill and Melinda Gates Foundation (educational grants), etc.

To date, China is among the three leaders of international educational exchanges, which is actively developing the higher education system and making significant investments in the training of highly qualified scientific personnel according to the STEM model (Science, Technology, Engineering, Mathematics), which combines natural sciences and engineering disciplines into a single system. The largest Chinese organization engaged in the organization of international academic exchanges and

the development of cooperation in the field of education is the China Education Association for International Exchange (CEAIE), founded in 1981, which has branches in all major cities of the country and in 31 provinces. CEAIE has established a wide network with partner associations and institutions in the country and long-term working relationships with more than 170 educational organizations in more than 50 countries and regions. CEAIE has been granted Special Consultative Status with the UN Economic and Social Council. An online information platform CUCAS (China's University and College Admission System) has also been created and operates, which allows foreign students to apply to universities and colleges in China, and also contains the functionality of consulting services from choosing a study programme to completing the necessary package of documents. Of course, this kind of use of information technology has a positive effect on the image of the Chinese education system, and China as a whole.

An important factor in the development of international exchanges is the financial planning of these processes. Thus, the activities of the American non-profit academic community ISEP (International Student Exchange Programmes) are aimed at overcoming financial and intellectual barriers to study abroad. Two types of programmes are offered: (a) ISEP Exchange, where a student pays tuition and fees at his home institution and opens a place for a student from another university where he wants to study, i.e., a classic student exchange is implemented; (b) ISEP Direct guarantees tuition at the university chosen by the student (subject to compliance with the minimum academic requirements). Over 40 years of its work, ISEP has enabled more than 60 thousand students to realize their goals in getting an education at more than 300 universities in 50 countries.

The internationalization of education has led, not only to an increased understanding of the importance of developing international knowledge exchange, but also support for participation in them from business structures. For example, in Japan, since the 1980s, the programme "Education for Global Competition" has been implemented, initiated by business corporations and aimed at supporting international exchanges, taking into account international aspects of curricula (while maintaining respect for national culture) and improving the effectiveness of teaching foreign languages. In Mexico, the Institute of International Education, Latin America and the Caribbean (IIE LAC), with the support of ExxonMobil, is implementing a student exchange programme and research projects in science, technology, engineering and mathematics (STEM) with the possibility of receiving a \$2,000 scholarship, participating in a mentoring programme with ExxonMobil and internships in Houston on-campus companies.

An important role is currently played by specially organized networks to assist young people in achieving their educational goals. One of the oldest international exchange programmes is AIESEC, established in Europe in 1948, a non-governmental and non-profit organization completely run by youth, for youth, which allows students to find internships in other countries for personal and professional development, as well as for volunteering (for the entire period of its existence there have been more than 1 million young people involved in it). Now the organization is actually a global network, where about 7 thousand organizations from 126

countries and territories are partners of AIESEC, and an average of more than 30 thousand students receive an internship opportunity each year. Similarly, for example, in Australia, the Australia Professional Internship programme is being implemented on a special digital platform, which allows you to improve your professional skills in companies in different sectors of the economy. Such programmes contribute to gaining experience, which enables university graduates to effectively apply their knowledge.

At the same time, the system of bilateral educational mobility in the world is also developing. Thus, in 2022, the governments of India and Australia announced the start of work on a new structure for mutual recognition of higher education qualifications, which, on the one hand, will increase Australia's competitiveness in the key Indian market, and, on the other hand, will create new opportunities for Australian students to study at one of the leading technological institutes in the world.

In general, according to the estimates of the analytical company HolonIQ,³ based on the results of the analysis of UNESCO, OECD, Project Atlas, Open Doors, NAFSA and various government websites for their Global Flows project, it is expected that by 2030 at least 8 million students will enrol in foreign institutions as part of educational exchange programmes, and the spending costs on international students will double in 2019 and amount to \$433 billion, which confirms the relevance and importance of the development of global education and the increasing demand for it from the world community. Of course, the greatest demand will be provided from Asia and Africa. Currently, students looking for the best universities often choose destinations such as the UK, USA, Australia and Canada, where more than half of the universities in the Times Higher Education ranking of the top 200 higher education institutions are located.

6 Conclusions

1. Technology transfer between countries carried out on a commercial basis constitutes international technology trade in both tangible and intangible forms, which is implemented in the forms of intra-company (vertical) transfer within the branch network of multinational enterprises or inter-company (horizontal) transfer based on the conclusion of licensing agreements between independent firms. The effectiveness of international technology trade is determined by the technological profile of a country and affects the pace of its economic growth in the long term. Both developed and developing countries are involved in technology trade, but their participation in this process is not uniform. As a rule, emerging economies are importers of technology in an intangible form. The leading exporters of high-tech goods include the largest developed countries, as well as a number of

³ HolonIQ. Education in 2030. The 10 Trillion dollar question. Five Scenarios for the Future of Learning and Talent. URL: <https://www.holoniq.com/2030/>.

developing countries, led by China, whose leadership is mainly due to significant volumes of assembly plants on orders of foreign MNEs.

2. Scientific and professional personnel are in demand and a critical resource for the socio-economic and technological development of countries, which creates demand for international short-term or long-term migration of scientific personnel. The mobility of researchers can be direct (relocation of a specialist) and hidden (work under foreign contracts). The drivers of international scientific mobility are the conditions of scientific work, international scientific networks, the prestige of a scientific organization, career prospects and the opportunity to work with leading specialists. The international mobility of scientists has a positive effect on both the host and the “native” country, therefore, the competition of countries and their institutions for talents stimulates the development of programmes to support scientists and researchers in promising fields of science. The development of scientific exchange is also facilitated by digitalization, which ensures the interaction of scientists in an online format and simplifies the flow of scientific migration.
3. International educational exchange develops in the following main areas: mobility of students and the teaching and administrative staff of educational institutions, the formation of international standards of education, mobility of educational programmes and the creation of strategic educational partnerships. This is reflected in the growth in the number of students and teachers participating in academic mobility programmes, the number of cross-border, joint educational programmes and double degree programmes, distance and virtual international educational programmes, courses in foreign languages, in the expansion of partnerships and the opening of foreign branches of major universities, in the creation of new organizations focused on international education, and regional university centres and educational clusters.
4. International student and academic exchange programmes have a rich practice in Europe and the USA, thanks to the successful work of DAAD (German Academic Exchange Service), the European ERASMUS and ERASMUS+ programmes, Fulbright in the USA and others. The programmes are implemented both in the format of a classical student exchange, and with the provision of grants for training, including travel and accommodation costs on the campus of the host university. In addition to state programmes to support foreign students, financial support programmes from private foundations and internship programmes in large world-class companies interested in attracting highly qualified specialists are also being implemented. The implementation of exchange programmes in the field of STEM, i.e., science, technology, engineering and mathematics, has a special priority in modern international knowledge exchange, taking into account the competition of countries for advanced technologies. The development of digital technologies creates new opportunities to stimulate international exchanges by creating special global networks and digital platforms for the dissemination of information and attracting foreign students, teachers and researchers.

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International Labour Migration



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Abstract The chapter begins with a paragraph on the theoretical foundations of international labour migration. The following paragraphs discuss the global labour market, the consequences of international labour migration and its regulation.

1 Introduction

International migration of labour resources is of great importance for the economies of many countries. Almost all historical stages of the evolution of our civilization have been mediated by various forms of mass migration.

The nature of the impact of migration flows on the global and national economies does not remain constant, but changes over time, as the quantitative and qualitative characteristics of migration processes and the conditions in which they are implemented change. In the twenty-first century, many countries have faced a migration crisis caused by the influx of refugees from the states where various kinds of military conflicts have taken place.

2 Theoretical Foundations of International Labour Migration

International labour migration (external labour migration) is the emigration of the able-bodied population abroad and the immigration of labour resources from other countries. The concept of a migrant worker is fixed in the “International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families”, adopted by the UN in 1990. Under this Convention, the term “migrant worker” means a person who will, is, or has been engaged in a paid activity in a state

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in which he or she is not a national.¹ In addition, migrant workers are divided into several categories: seasonal; seafarers; employed at a stationary coastal installation; whose work is connected with relocation; employed on the project; or employees of targeted hiring. Since 1998, UN experts have begun to divide migrant workers into long-term (those who stay in the host country for 12 months or more), short-term (stay from 3 to 12 months) and return (Defining and Measuring Circular Migration, 2016).

In recent centuries, Europe has been the main supplier of labour migrants, and European resettlement colonies, primarily the United States, have accepted these immigrants. But after the collapse of the colonial system and the decline in the birth rate in Europe, the movement of labour from the labour-surplus countries of Asia and Africa to Western Europe began to prevail, which became a net importer of labour; and flows of South American migrants rushed to the United States. Subsequently, the geography of international labour migration has expanded even more.

The impact of labour migration as a complex socio-economic process on the country's economy has been studied by many economists and sociologists. And although A. Smith studied labour migration within the country, the factor of wage differences he identified is confirmed in neoclassical concepts of international migration. A British economist (Hicks 1932) highlighted the international difference in wages in the country's labour markets arising as a result of the uneven distribution of economic resources between countries as being among the motives of labour migration more than 150 years later. From the standpoint of the neoclassical migration concept, the result of the movement of labour resources between countries is the equalization of wage levels in these countries, and the stabilization of the world labour market as a result of a gradual decrease in the supply of labour in a country with excess labour resources, and an increase in supply in a country with a shortage of labour resources.

With the progress of the international labour division and with the increasing unevenness of national economies, researchers are focusing on a wider range of motives for international labour migration, not just at the country and household level (e.g., Bodvarsson & Berg, 2013).

For the first time, a wide range of theoretical approaches to labour migration was considered by the German-English geographer and sociologist, E. G. Ravenstein. In his articles (Ravenstein 1876, 1885, 1889), he formulated several principles of international labour migration, which, revealed the motives of labour migration and are quite relevant to the present day. Among the motives of a predominantly economic nature, the existing differences between territories in the supply of labour remain relevant, which leads to the redistribution of labour resources; the development of industry, trade, and transport stimulates the growth of migration; long-distance migrants move to large cities as centres of industry and trade; women move within the country easier than men, and men move further abroad easier than women. E.G. Ravenstein theoretically substantiated the reasons for the supply and demand for migrant labour in different countries.

¹ http://www.un.org/ru/documents/decl_conv/conventions/migrant1.shtml.

The factors that can restrain the growth of labour migration flows were highlighted by (Stouffer 1940), who defined the notion of intervening opportunities, such as the cost of relocation, obstructive legislation, lack of information, and other factors. As a result of these factors, the number of people moving is directly proportional to the number of prospects, but when assessing intervening circumstances, there is an inversely proportional tendency to the number of migrants seeking to move to work away from their place of residence.

Lee (1966) identified and justified the economic and social causes of labour migration processes using the econometric model of “push/pull factors”, i.e., the pull factors (higher wages, security, better social guarantees, easier access to the labour market, high quality of life) and push factors (high unemployment, high tax and social payments, discrimination, restrictions on freedom of conscience and religion). Along with pull and push factors, there are intermediate factors influencing the decision-making of a migrant—these are transport costs, labour market regulation in the intended migration region, and the availability of information about working and living conditions there. In other words, a migrant decides to move if the combination of push and pull factors is sufficient to justify the difficulties associated with migration. The scientific significance of this approach (in contrast to the above-described theory of increasing demand for immigrant labour) is that it analyses the relationship of labour migration factors. As a result, a synthesis of these two theories has been established in the neoclassical theory—the primary importance of the wage difference factor in the donor and recipient countries remains, but at the same time, the movement of labour is assessed as effective if the salary level in the host country is sufficient to cover all the costs associated with the relocation of labour resources.

In the theory developed by (Piore 1979), the demand for migrant labour in developed countries is also justified by the fact that the countries from which they came, provide lower wages and higher unemployment. Thus, we can conclude that when there is a shortage of labour in a developed country, it is more profitable not to encourage local workers with higher wages, but to import migrants who can do the same work for lower wages.

The synthetic theory of international migration (Massey 2001), argued that in international migration, pull factors prevail over push ones, which forms a network of international migration, and provides an economic and social connection with the exporting region of labour through a system of money transfers from migrants.

From the standpoint of the sociological world-systems theory (Wallerstein 1974), an important motive for labour migration is the relocation of the rural population to the city in search of work. In the context of the world economy globalization, the flows of migrants from rural areas are rushing to earn money in those countries where there is a rapid growth of cities with growing demand for cheap immigrant labour. In general, according to the world-systems theory, economic and political globalization is considered the main cause of international migration, and the international flow of labour follows the international flows of goods and capital, but in the opposite direction.

We should add that the motives of labour migration are gradually changing. A significant wage gap as a motive for labour migration is more important for less

skilled employees. As to more qualified employees, along with differences in wages, they have an important motive for labour migration—the opportunity to get a more interesting job, career opportunities, progress in their professional skills, better social conditions, etc. They migrate to those countries where they can be more productive, taking into account their qualifications, but at the same time, they need to compensate for all the costs associated with moving and other costs due to higher wages. According to the estimates of the International Organization for Migration, qualified specialists account for up to 25–30% of immigrants who have arrived for permanent residence in developed countries. According to the Brookings Institution, highly skilled migrants currently outnumber low-skilled migrants in the United States.

Although the economic motives of labour migration prevail, non-economic reasons are becoming more and more noticeable in the context of globalization. They include:

- military actions, political, religious persecution and national unrest that force people to seek refuge and work abroad;
- the desire to reunite with family;
- natural disasters.

3 Global Labour Market

The global labour market covers all labour flows that cross national borders. It exists alongside other global markets—goods, services and capital.

Labour migrants can be divided into two groups—those arriving for permanent or temporary residence. In turn, temporary migrants are divided into the following subgroups: (1) migrant workers who enter other countries for more than 1 year (usually for 2–5 years); (2) seasonal workers—for up to 1 year; (3) frontline workers who make daily trips from the country of residence to the country of employment and vice versa; and (4) illegal immigrants—those illegally working in the country of entry, as a rule, from several months to two to three years. International labour migrants often include both non-resident foreign workers and residents of the country who were born outside of it.

The number of international migrants (all, not only labour migrants) grew as follows: if in 1995 there were 174 million, in 2005—221 million, and in 2021—already 281 million migrants. As the number of international migrants grew faster than the world population, their share in the total global population increased from 2.8% in 1995 and to 3.6% in 2021 (UN 2021). But according to the World Bank, the number of international migrants is significantly higher, since non-nationals who do not have legal status; for example, refugees, are not fully taken into account.

In 2020, two-thirds of all international migrants lived in 20 countries. The United States remains the main place of residence for international migrants: in 2020, their number in the United States was 51 million, i.e., 18% of the total number of migrants in the world). Germany ranks second in the number of international migrants in the

world (about 16 million), followed by Saudi Arabia (13 million), Russia (12 million) and the United Kingdom (9 million) (UN 2021).

In recent decades, new trends have emerged in the global labour market against the background of the growing number of migrants:

- the impact of economic cycles on the scale of labour migration has increased. During economic downturn, employees with lower qualifications, as well as those engaged in temporary work, find themselves in the worst situation, which affects international migrants the most;
- in some regions, there is a gradual substitution of migrant flows from other continents for intra-continental migration. The influx of Mexican labour migrants to the United States, Eastern European migrants to Western European countries, and African migrants to South Africa is increasing;
- in recent decades, new international centres of attraction for the workforce have been formed. These are the Arab countries of the Persian Gulf, South Africa in Africa, Argentina and Brazil in Latin America, Singapore, Hong Kong and Thailand in Southeast Asia, and Russia and Kazakhstan in the post-Soviet area. The immigration policy of the Arab Gulf countries began to take shape back in the 1970s. These countries attracted temporary migrants from South and Southeast Asia, who in practice, did not assimilate with the local population and did not receive the right to permanent residence. An example is the UAE, where there are approximately 9 immigrants per 1 indigenous resident. In addition, their work is paid significantly lower than the work of UAE citizens;
- low population growth in many countries and the increase in immigration have contributed to the transformation of immigration into an important source of replenishment not only of the labour force but also of the country's population. However, in many ways, this is a consequence of, not only legal, but also illegal immigration. For instance, according to expert estimates, the total number of foreign citizens illegally staying in Russia can be estimated at 3–4 million, and in spring and summer, when seasonal workers arrive, their number increases to 5–7 million people;
- the movement of scientific and technical personnel has intensified. They search for better conditions for applying their abilities and improving their quality of life, and migrate to the United States and Western European countries, and in recent years also to the fast-growing economies of East and Southeast Asia—China, Hong Kong, Republic of Korea, Singapore, Malaysia and Thailand. As a result, in many less developed countries, there is a “brain drain” of scientists and highly qualified personnel, including doctors, lawyers, architects, professors, teachers, musicians, artists, athletes and coaches;
- an important feature of modern labour migration is the involvement of employees in the international labour market without changing their place of residence. This applies, first of all, to those who work for outsourcing firms, especially in India.

According to the International Organization for Migration, in 2020, Russia ranked fourth among the countries with the largest number of migrants (12 million people). A smaller part includes the people who have come for permanent residence: in the 1990s, these were so-called Russian-speakers (people for whom Russian is their native language) who fled from economic, military and political hardships in the ex-USSR countries—up to 1 million people a year, and in the last fifteen years—mainly indigenous residents of the ex-USSR countries (up to 0.5 million people). As a result, Russian citizens born outside Russia already make up about 8% of the Russian population.

But the bulk of migrants—about 10 million people a year—are temporary labour migrants. The largest suppliers of temporary labour to Russia from neighbouring countries are Uzbekistan, Tajikistan, Kyrgyzstan, Ukraine and Moldova, as well as China, Vietnam and Turkey. According to estimates, during the years of recovery, the number of immigrants temporarily working in Russia noticeably exceeds 10 million people, while during the crisis it is a quarter or a third less.

The majority of temporary migrants entering Russia are engaged in work that does not require high qualifications. The majority of working foreigners—37%—are employed in construction, the second sphere in terms of the number of employed migrant workers is wholesale and retail trade—17%, mining and manufacturing industries account for 15.5%, agriculture and forestry employ 9%, transport and communications—4%. As for permanent migrants, they are mostly skilled or highly skilled employees.

4 Effects of International Labour Migration

The economic consequences for the countries of labour migration and immigration can be both favourable and unfavourable. At the same time, the balance of positive and negative consequences for labour-exporting and labour-importing countries cannot always be assessed only quantitatively (Table 1).

5 Regulation of International Labour Migration

Migration policy may be aimed at attracting the bulk of migrants to permanent residence with their families, as, for example, in the United States, Australia and Canada, where the “family migration” model prevails. Some other countries are trying to use such migration policies to also solve the demographic problem—the rapid rate of ageing of the main population, low birth rate (Germany, Sweden, Switzerland), concluding labour contracts, and then creating conditions for inviting families of foreign workers. Both of these approaches to migration policy involve the use of an “assimilation strategy” for developing the labour market.

But some other countries adhere to a strategy, which is called the “seasonal approach” in the economic literature. They seek to limit the assimilation of migrants

Table 1 The dual impact of international labour migration on donor and recipient countries

Positive impact of labour migration	Negative impact of labour migration
<i>Labour-exporting countries</i>	
The departure of a part of the population helps individual countries to reduce unemployment	The outflow of the most active, enterprising population, highly qualified specialists and scientists, whose departure means the costs of their training and the benefits of their work for the country are irretrievably lost
Migrants acquire advanced labour skills, become familiar with new technologies, standards of organization and discipline of labour, which they bring with them when returning to their homeland	The age composition of the population is deteriorating due to the departure of the youngest and healthiest part of the workforce
Replenishment of the incomes of labour-exporting countries due to transfers from migrants working abroad (according to the World Bank, transfers of labour migrants from Tajikistan and Moldova account for 36% as compared to GDP of their countries)	The country loses a significant part of the potential income from these migrants
<i>Labour-importing countries</i>	
Reducing the labour shortage	The qualifications of immigrants are not always sufficient
An increase in employment in low-paid and low-prestige industries where unskilled labour is required and the citizens of the host country do not want to work	The risk of inter-ethnic hostility is increasing
By the beginning of the twenty-first century, net migration provided 56% of demographic population growth in developed countries	There is such a great dependence on the labour of immigrants that without attracting more of them, certain sectors of the national economy (the coal industry in Belgium, the automotive industry in France, the construction in Spain) cannot function properly
The supply of foreign labour is accompanied by an expansion of consumer demand on its part, and state budget revenues from additional taxes	Among labour immigrants, individual nationalities often predominate, striving to live separately to preserve their ethnic integrity (among German immigrants, about 30% are Turks, in France, 15.5% are Moroccans and 14.6% are Algerians, in the United States, 29.5% are Mexicans). Immigrants are not always willing to learn the language of the host country, they strive to preserve their religion and way of life
During a period of deteriorating business conditions, foreign employees are often considered the first candidates for dismissal, which creates a certain social shock absorber, slowing the growth of unemployment	The isolated residence of foreign communities with foreign culture, traditions and customs can expand the shadow business, including illegal immigrants

into the local population, such as in the aforementioned Arab countries of the Persian Gulf. In this case, countries use and strictly control the contractual form of hiring employees. At the same time, not all these countries manage to maintain a “withdrawal strategy” due to the transparency of their borders and large inflows of illegal migrants.

Recipient countries seek to organize the use of migrants by regulating their numbers by the of immigration quotas based on the country’s needs for foreign labour for certain professions, taking into account the state of the national labour market, housing and social security. The immigration quota is usually calculated by countries annually and approved as part of the national migration policy. It is most actively used in the United States.

Under the Amsterdam Treaty of 1997, the migration policy of the EU is implemented both at the supranational or “communitarian” and intergovernmental levels. Since 1999, the EU has been developing a common asylum and immigration policy while strengthening external borders and restricting illegal immigrants. In 2004, “Green Paper on an EU approach to managing economic migration” was published, according to which preference should be given to highly qualified migrants and an accelerated procedure for their registration should be introduced.

An important step towards the harmonization of the migration policy of the EU countries was the adoption in 2011 of European Agenda for the Integration of Third-Country Nationals, which contained principles and recommendations, using which countries could form and improve their national migration policy. However, in practice, supranational principles and recommendations are implemented differently in individual countries, especially since countries have retained responsibility for determining the forms and channels of legal migration and setting quotas on national labour markets. Defending the interests of their population, not all countries seek to transfer supranational directives into their legislation. In countries such as Germany and Italy, only 16% of the provisions of supranational regulation have been transferred to national legislation. Nevertheless, there is a continuous deepening “Europeanization” of the immigration policy of individual EU countries and the strengthening of “communitarian” principles, although the practice of establishing quotas for the admission of foreigners to national labour markets continues to persist.

In order to attract qualified specialists under the directive approved in the EU in 2009, foreign highly qualified specialists—holders of “blue cards”—can enjoy equal rights with similar specialists who are citizens of this country. However, according to the EU Commission, 85% of migrants to EU countries are unskilled workers and only 5% are highly qualified specialists, while in the United States the situation is completely different—55% of migrants are specialists and 5% of immigrants have low qualifications.

6 Conclusions

1. International labour migration (external labour migration) is the emigration of the able-bodied population abroad and the immigration of labour resources from other countries. Currently, the movement of labour from the labour-surplus countries of Asia and Africa to Western Europe, which has become a net importer of labour, prevails, and South American migrants have flocked to the United States along with Europeans.
2. The neoclassical theory has established the position that the factor of wage difference in donor and recipient countries is of paramount importance for international migration, but at the same time, the movement of labour is assessed as effective if the salary level in the host country is sufficient to cover all the costs associated with the relocation of labour resources. However, a significant wage gap in the exporting and importing countries of labour as a motive for labour migration is more important for the workers of less skilled labour, while for more skilled employees, an important motive for labour migration, along with differences in wages, is the opportunity to get more interesting work, career opportunities, and improving their professional skills, social conditions, etc.
3. Labour migrants can be divided into two groups—those arriving for permanent or temporary residence. In turn, temporary migrants are divided into the following subgroups: (1) migrant workers who enter other countries for more than 1 year (usually for 2–5 years); (2) seasonal workers—for up to 1 year; (3) frontline workers who make daily trips from the country of residence to the country of employment and vice versa; and (4) illegal immigrants—those illegally working in the country of entry, as a rule, from several months to two to three years. As a result, international labour migrants include both non-resident foreign workers and residents of the country who have been born outside of it.
4. The economic consequences for the countries of labour migration and immigration can be both favourable and unfavourable. At the same time, the balance of positive and negative consequences for the host country and the exporting country of labour cannot always be assessed quantitatively only. By accepting foreign employees, the country has to be ready, not only for the positive, but also for the negative consequences.
5. Migration policy may be aimed at attracting migrants to permanent residence with their families, which involves the use of an “assimilation strategy” for developing the labour market. At the same time, some countries seek to adhere to a strategy, which has been called a “departure approach” in the economic literature, limiting the assimilation of migrants into the local population, such as, for example, the Arab countries of the Persian Gulf.
6. Recipient countries seek to organize the use of migrants by regulating their numbers, for which they use an immigration quota that takes into account the

country's needs for foreign labour for certain categories of the attracted population of a certain age and gender, and taking into account the state of the national labour market, housing, and social security opportunities. The immigration quota is usually calculated annually and approved as part of the national migration policy.

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Foreign Aid



Natalya Galistcheva

Abstract The chapter analyses the role of foreign aid as an external factor in the economic development of emerging market countries. The theoretical aspects of foreign aid are considered: the forms in which foreign aid is provided, the conditions under which it is provided, and its sources. The main donors and recipients of aid in the world economy are noted. The scale of foreign aid in the world economy from the second half of the twentieth century to the beginning of the twenty-first century is given.

1 Introduction

Development assistance has appeared as an economic category relatively recently—in the late 1940s to the early 1950s—when many colonies became independent. Today, foreign aid is understood as a voluntary transfer of resources on preferential terms (subsidized loans) or in the form of a gift/donation (grants) by one country to another. Its purpose is to promote the socio-economic development of the recipient countries.

2 Volume and Structure, Types, and Conditions of Foreign Aid

The subjects of foreign aid (donors) are governments (both central and local), international organizations, various foundations and individuals. The recipients of foreign aid can include both government agencies and non-governmental organizations, legal entities and/or individuals.

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The annual volume of foreign aid over the past three decades has averaged about \$120–150 billion (\$105 billion in 2007, \$135 billion in 2013, \$147.7 billion in 2019 and \$161.2 billion in 2020). Back in 1968, at the Second UNCTAD Conference in New Delhi, developing countries demanded that developed countries allocate 0.7% of their GDP to them for assistance. However, as practice shows, the average amount of aid provided by donors is equivalent to 0.29% of the GDP of developed economies (0.30% in 2019 and 0.32% in 2021).

Within the framework of foreign aid, we can single out official development assistance, or ODA. These are financial resources provided to countries and territories through the OECD Development Assistance Committee (DAC), as well as multi-lateral institutions [see more Thirlwall, 2011, pp. 453–454]. An important distinguishing feature of ODA is the conditions under which aid is provided to recipient countries. They include longer repayment periods and a grace period (deferred payments) of loans and borrowings when compared to commercial ones, and a relatively low-interest rate. In addition, these resources are transferred by the official agencies of the donor countries on preferential terms, with a grant element of at least 25% (calculated using a discount rate of 10%).

The OECD Development Assistance Committee (DAC), established on 13 January 1960, is a forum for discussing issues related to economic development assistance and solving social problems, including poverty in developing countries. Today, the DAC has 30 members, including the EU, which is a full member.

The grant element is an integral indicator in statistics used to compare the terms of various loans and borrowings. It compares the terms of an individual loan by three parameters: the loan term, grace period and interest rate. It shows how much less the lender will receive in repayment by granting a loan on terms more favourable than those generally required by commercial ones. This is derived by dividing the grant equivalent by the amount of the loan provided.

The grant element is calculated by comparing the current values of repayment and accrued loan interest to the loan's nominal value. The prevailing rate on long-term deposits in the capital market is used for comparison.

The development of the grant element at the international level began in the 1960s. The grant element has been used in practice since the first half of the 1970s. With its help, the concessionality of both financial resources provided in the form of ODA and loans provided on market conditions are assessed. If the grant element exceeds 25%, then such loans will relate to development assistance.

Multilateral organizations (primarily the World Bank, IMF, Asian Development Bank, specialized agencies, and UN funds and programmes—for example, UNDP, UNICEF, FAO, etc.) provide a quarter of the aid in the world. The rest is provided to recipient countries on a bilateral basis (73.6% in 2019). This is more beneficial to

donor countries because this practice significantly increases their ability to dictate terms to receiving countries.

Foreign aid can be provided in the form of food aid (grain, food, etc.), consumer goods, machinery, equipment, fertilizers, medicine, etc. (commodity aid), and development projects (technical assistance), for example, building infrastructure facilities (roads, ports, granaries, water supply and sewerage systems, etc.), training specialists, providing medical services, etc.

Technical assistance is aimed at the formation of technical and economic knowledge and skills in certain areas of the recipient countries' activities. From an organizational and technical standpoint, technical assistance includes consulting and other professional services where the customers and the end users are different parties, i.e. payment for these services is not carried out by the organization that finances the technical assistance. In the field of international economic relations, foreign technical assistance is carried out, as a rule, with funds allocated by governments and international organizations, but the specific executors of the technical assistance programmes are economics and management specialists working in various organizations or independently. Though developing countries mostly sought to receive aid in the form of food and consumer goods immediately after gaining independence, they have become more eager to receive technical assistance as they have developed. For example, in 1972 the ratio between these three types of aid received by Bangladesh was 48%:51%:1%; then in 1991—15%:24%:61%; in 2002—5%:9%:86%; and currently—on average 3%:11%:86%.

For donor countries, provision of aid in the form of food and consumer goods is another channel for selling their producers' products, with the recipient country's market becoming an additional market. Moreover, assistance is often linked to many requirements, which can be both economic and political. Meanwhile, one can highlight the humanitarian motives for providing assistance.

According to the terms of the provision, foreign aid received by developing countries can be divided into subsidized loans and grants. At the same time, it should be noted that a certain part of the concessional loans is often allocated for some specific purposes or programmes (this is tied aid), with only a small part considered untied aid. While this limits the recipient country's ability to direct the funds, this control also ensures that it uses them more responsibly. In general, according to official data, the volume of related aid decreased from 50% in 1979 to 15–20% in 2007–2019. Today, Greece (traditionally, all aid provided by this country is tied), Hungary (up to 78%), Poland (75%), Austria (56%) and the USA (40%) prefer to provide tied assistance.

In addition to official development assistance, there is also private assistance provided by corporations and non-governmental organizations (NGOs), as well as individuals. Corporate development assistance is provided directly by corporate foundations created for charitable purposes (for example, the Ford Foundation and the Novartis Foundation for Sustainable Development). NGO development assistance, mainly in the form of services, is provided by non-governmental organizations directly, or in partnership with local non-governmental or governmental organizations in foreign countries (for example, Oxfam, Global Vision). Individual assistance

in the form of grants is provided directly by family foundations and individuals (for example, the Bill & Melinda Gates Foundation, the Clinton Foundation and the Herbalife Foundation) [Todaro & Smith, 2020, pp. 755–756].

In addition, so-called mixed aid is also allocated, for example, through the UN Global Compact, which is a variant of public–private partnership. The Global Compact provides a framework for business entrepreneurs, as well as various non-governmental organizations, wishing to align their activities and strategies with ten universally recognized principles in the field of human rights, labour relations, environmental protection and fighting corruption. Since 2000, more than 8000 organizations, including more than 5000 companies from 130 countries, have joined the Global Compact.

3 Major Donors and Recipients, ‘New Donors’

The largest recipients of foreign aid in the world economy are developing countries in sub-Saharan Africa (the annual volume of aid received per capita is about \$50, or about 4.3% of the region’s GNI) and South Asia (about \$8, 0.8% of GNI), the Near and Middle East region (about \$73, 1.9% of GNI) and Latin America (about \$16, 0.2% of GNI) (Table 1).

There are so-called ‘traditional’ and ‘new’ donors. Traditional donors include the member countries of the OECD Development Assistance Committee, most of which have a relatively long history of donation. This group includes all developed countries, including, of course, the former colonial powers (France, Great Britain, Italy, Belgium, the Netherlands, Austria, Spain, Portugal). It is noteworthy that the largest donors in this group in absolute terms are the USA (\$30–40 billion) and Germany (\$25–30 billion), while in relative terms the list is topped by Luxembourg (consistently more than 1%) and Scandinavian countries—Norway, Sweden, Denmark (about 0.9%) (Tables 2 and 3).

The group of new donors consists of countries that are not members of the OECD DAC that have received aid in the past. The largest new donors can be considered China, whose annual volume of aid averages about \$5–6 billion, and India, which

Table 1 Major recipients in the global economy in 2019

	Aid volume, \$ billion
Syria	10.3
Ethiopia	4.8
Bangladesh	4.5
Afghanistan	4.5
Yemen	4.4

Source COVID-19 spending helped lift foreign aid to an all-time high in 2020. *Detailed Note* OECD-Paris, 13 April 2021

Table 2 The main donors (in absolute terms) in the world economy in 1980–2020 (billion dollars)

	1980	1990	2000	2010	2020
USA	7.138	11.394	9.955	29.653	35.124
Germany	3.567	6.320	5.030	12.985	28.886
Japan	3.353	9.069	13.508	11.058	13.666
France	2.889	7.163	4.105	12.915	15.833
United Kingdom	1.854	2.638	4.501	13.053	19.245
Netherlands	1.630	2.538	3.135	6.357	5.359
Canada	1.075	2.470	1.744	5.214	4.896
Other countries	4.798	11.216	12.043	37.249	38.018
Total	26.304	52.808	54.021	128.484	161.027

Source COVID-19 spending helped lift foreign aid to an all-time high in 2020. *Detailed Note* OECD-Paris, 13 April 2021

Table 3 The main donors (by relative indicators) in the global economy in 2020, % of GDP

	Scope of aid
Sweden	1.14
Norway	1.11
Luxembourg	1.02
Denmark	0.73
Germany	0.73
United Kingdom	0.70

Source COVID-19 spending helped lift foreign aid to an all-time high in 2020. *Detailed Note* OECD-Paris, 13 April 2021

provides about \$1–1.5 billion, as well as Brazil, Poland, Russia and oil-exporting countries.

Unlike DAC member countries, most of the new donors describe their participation in international development assistance as cooperation. This interpretation of the transfer of resources from one developing country to another is based on the developing countries' view of the root causes of global poverty and inequality and their reproduction mechanisms. Cooperation between developing countries began in the 1950s, but it was only formalized, with specific goals and an action plan to achieve them, in 1978 at the United Nations Conference on Technical Cooperation among Developing Countries in Buenos Aires. Reducing dependence on developed countries, as well as achieving 'collective security' and 'collective self-reliance', were declared the most important final goals for cooperation between developing countries. To achieve them, developing countries should reorient economic ties to mutual exchange, stimulate the development of subregional and regional integration, promote the creation of infrastructure, provide mutual aid, etc.

India as a New Donor

India began to provide assistance back in the 1950s and early 1960s, primarily to neighbouring countries. Nepal and Myanmar became the first recipients. Since the mid-1960s, assistance has been allocated within the framework of the Indian Technical and Economic Cooperation programme. The Indian government provided mainly technical assistance almost from the very beginning. India significantly increased aid to developing countries in the 1990s, bringing its annual volume in the 2000s to an average of \$1 billion, and up to \$1.5 billion in the 2010s.

The modern Indian assistance strategy is determined by both economic factors (ensuring access to raw materials and finding promising markets among recipient countries) and political factors (strengthening India's geopolitical influence both among developing countries and globally). Among other things, India considers this aid to be an effective tool for expanding its economic and political influence. According to Indian statistics, foreign aid includes implementing development projects and providing various educational and advisory services, as well as trade subsidies, and also opening credit lines through the Export–Import Bank of India (EXIM Bank). By providing advisory and expert services, India contributes to solving the problem of poverty and stimulating the economic development of some developing countries, mainly in South Asia and Africa.

Assistance to foreign countries is provided mainly on a bilateral basis (up to 80% of the total volume), with the lion's share consisting of so-called 'related' assistance, most of which is spent inside India itself (educational programmes for foreigners), or on the purchase of Indian goods by recipient countries, mainly pharmaceutical and mechanical engineering products.

The new donors provide assistance on both a bilateral and multilateral basis, including trilateral cooperation, in which they participate along with traditional donors and/or multilateral development institutions. Trilateral cooperation usually takes one of three forms:

- all parties make complementary technical and financial contributions
- a traditional donor from the OECD DAC or a multilateral development agency fully finances all project activities, while new donors provide expertise in the field of development, as well as *know-how* based on their own accumulated experience
- if more than two aid donors participate in a project, one provides only financial support, while the others provide only technical expertise

China, India, Indonesia, Brazil, Mexico, Chile and South Africa have been actively expanding this type of cooperation with some traditional donors and UN structures over the past two decades.

China and Trilateral Cooperation

China started to engage in trilateral cooperation only quite recently, in 2008. However, it is noteworthy that, in recent years, China has increased not only the number of its trilateral partnerships but also its scale.

Today, China is developing trilateral cooperation with several international development agencies from individual countries and UN structures. This cooperation covers modernization in a wide range of economic sectors, including agriculture, infrastructure, healthcare, education, trade, investment, etc. The cost of the projects varies from one to several million dollars. The role of China itself in these projects also varies. In most cases, China provides technology or passes on expertise in the form of technical assistance, while providing full or partial financing for the projects. The Chinese Ministry of Commerce is usually responsible for development assistance projects. Chinese industry ministries and specialized agencies may also participate in the implementation of projects.

China is actively cooperating with the UNDP within the framework of trilateral cooperation. In practice, two main models for this cooperation have crystallized, which, in turn, are based on various financial arrangements.

- The ‘jointly funded projects’ model (in this case, China and the UNDP jointly determine the funding scheme and the respective contributions of the parties). This type of cooperation can be seen in cassava cultivation projects in Cambodia and disaster management in Malawi.
- The ‘3rd-party financing model’ (in this case, a third donor provides funding for the project). This type of cooperation has been used for disaster management projects in the poorest countries of South Asia—Bangladesh and Nepal—where financing issues were solved by the UK Department for International Development. This model has also been used to implement renewable energy projects in Ghana and Zambia. These projects were fully funded by the Danish Ministry of Foreign Affairs.

In general, China’s involvement in trilateral cooperation, as in the case of India, can be explained by its desire to demonstrate its increased economic power and potential to the world, while presenting itself as responsible partner. By taking part in this type of partnership, China also gains invaluable experience in implementing development assistance policies and acquires knowledge of the world’s best practices for such partnerships.

4 Impact of Foreign Aid on the Development of Emerging Market Economies

The gross savings rate in the vast majority of developing countries is insufficient to form a stable financial base for future investment in the national economy. The ratio between savings and investment in favour of the latter shows that, both in the past and present, their economies rely heavily on capital inflows from the outside. During the period of import-substituting industrialization, this was dictated by the need to find

monetary resources to finance the creation of basic industries, and, during the period of liberal reforms, to carry out modernization policies. Under these circumstances, foreign aid became the 'lifeline' that the vast majority of developing countries clung to, especially from 1951 to the 1980s. It is obvious that aid was and remains an important element in the accumulation of capital in developing countries. It makes up for a lack of capital and helps modernize and improve the national economy's structure. There is no doubt that several developing countries, where stable domestic sources of accumulation have not yet been created, will need it for a long time.

Foreign aid is used to finance infrastructure projects, stimulate the development of national healthcare and education systems and provide access to modern science and technology. All this, in turn, makes a significant contribution to promoting human development and solving several social problems, including high poverty and low literacy. Meanwhile, since the amount of aid is usually small, it should not be considered a permanent source of funding. In addition, to ensure that the assistance has a positive impact on the development of the economy, it is necessary not only to increase the volume of aid, but also to strengthen control over its use to prevent it from being embezzled or used for insignificant projects.

However, there are also many critics of foreign assistance, who point out that it does not always provide positive results, and that not every developing state needs it. This means that aid can slow down economic growth because it often does not so much supplement national savings and investment, as replaces them, while significantly increasing external debt and payments. Economists also point out that assistance is often provided to develop the more modern sectors of the economy, rather than to modernize traditional sectors that preserve the diversity of developing countries' economies.

In addition, in some cases, foreign aid may render poorer recipients even more dependent on donor countries, without having any positive effect on their development. In the vast majority of cases (up to 80%), assistance provided to recipient countries is predicated on the fulfilment of certain conditions, including a requirement that it be used to purchase the donor country's goods, which may, in fact, be more expensive than those of other suppliers.

Throughout the post-war period, some experts have repeatedly drawn attention to the fact that foreign assistance, often provided with many economic and even political requirements, amounts to a form of interference in the internal affairs of less developed countries. On the other hand, many experts point out that the main goal of assisting donor countries is not so much to provide real assistance in developing the recipient country's economy, as to create conditions and opportunities for private capital to enter this country, as well to earn profits on capital previously invested there.

5 Conclusions

1. Aid remains an important element in capital accumulation in developing countries. It makes up for a lack of capital and helps modernize and improve the national economy's structure. There is no doubt that some developing countries, where sustainable domestic sources of accumulation have not yet been created, will need it for a long time.
2. Over the past decades, the composition of both the subjects and objects of foreign assistance have changed. It is not only the place and role of foreign aid, but also its institutional and organizational design, that are being discussed all over the world.
3. Foreign assistance may be provided in the form of food, consumer goods and development projects. As recipient countries develop economically, they are more eager to receive technical assistance, while donor countries prefer to provide assistance in the form of food and consumer goods.
4. Foreign aid can be provided in the form of grants and preferential loans. Unlike concessional loans, grants are not returned to donors, but their provision is most often tied to the fulfilment of certain conditions by recipients.
5. Foreign aid can be provided to recipient countries both on a multilateral and bilateral basis. The bilateral framework is preferable to donors, as it allows them to dictate terms to the recipients.
6. In Addition to Official Assistance, Private Assistance Can Be Provided by Corporations and Non-Governmental Organizations, as Well as Individuals.
7. The largest recipients of foreign aid in the world economy are developing countries in sub-Saharan Africa and South Asia, the Near and Middle East region and Latin America (about \$16, 0.2% of GNI).
8. There are so-called 'traditional' and 'new' donors. The largest traditional donors in absolute terms are the USA, Germany and Japan; and in relative terms, Luxembourg and Scandinavian countries—Norway, Sweden and Denmark. The largest new donors include China and India, as well as Brazil, Poland, Russia and oil-exporting countries. New donors assist both on a bilateral and multilateral basis, including trilateral cooperation, in which they participate along with traditional donors and/or multilateral development institutions.
9. Foreign aid is used to finance infrastructure projects, stimulate the development of national healthcare and education systems and provide access to modern science and technology. All this, in turn, makes a significant contribution to promoting human development and solving certain social problems, including high poverty and low literacy.
10. Meanwhile, the result of assistance on developing countries is not always positive, and some do not really need it. Assistance can slow economic growth because it often does not so much supplement national savings and investment, as replaces them, while significantly increasing external debt and payments. In addition, assistance is often provided to develop the more modern sectors of the

economy, rather than to modernize traditional sectors that preserve the diversity of developing countries' economies. In some cases, foreign aid may render poorer recipients even more dependent on donor countries, without having any positive effect on their development.

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External Debt



Natalya Galistcheva

Abstract The chapter analyses the external debt in the world economy. It focuses on its causes and consequences, as well as the main indicators revealing its scale, both in regions and in the global economy as a whole. The current state of international debts in the world economy in the first two decades of the twenty-first century is analysed.

1 Introduction

External borrowing contributes to the acceleration of economic growth, as well as the globalisation of national economy. However, it only has a positive impact on economic development if the conditions for its timely return are met. Otherwise, the impact of external borrowing becomes destructive to the national economy and provokes a crisis of external debt.

Periodically emerging external debt crises are one of the acute problems of world economic development. The last serious crisis broke out in August 1982, when dozens of Latin American states declared a default. The crisis could not be resolved for almost two decades and, among other things, was one of the triggers for liberalisation in many developing countries.

2 External Debt Measurement: Absolute and Relative Indicators

Due to their limited national savings, less developed countries have to resort to borrowing lending (loanable) capital abroad. However, although the inflow of lending capital into the country helps to solve the problem of lack of savings, it also turns

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into external debt, since this capital has to be returned, while also paying interest. External (foreign) debt is financial obligations incurred to foreign creditors, including the amount of debt and unpaid interest on them. Accordingly, the servicing of external debt (payments on external debt) includes both repayment of loans and credits taken and the payment of interest on them.

It is noteworthy that formal external debt exists only in developing economies whose national currency is either non-convertible or partially convertible (for example, only on separate current account items of the balance of payments). Developed economies, with their convertible national currency, do not formally have external debt. It is believed that, if necessary, they can pay off their foreign debt with their national currency. This means that their external debt is only a part of their national debt, covering the debt of the general government and households, private and public sectors. Naturally, all these economic agents may have external debt, but the biggest problem for less developed countries is the external public debt and the state-guaranteed external debt of the public and private sectors, rather than the non-guaranteed external debt of private sector, which is usually smaller.

The indicator of external debt volume often does not allow us to adequately assess the scale of the problem. For example, according to the results in 2019, Pakistan's external debt amounted to \$100.8 billion, which is about 5 times less than India's (India's external debt is \$560.035 billion) and more than 20 times smaller than China's. Meanwhile, if we analyse relative indicators characterising the degree of the country's external debt burden, then the situation in Pakistan is no longer so rosy [see more Malik et al., 2010; Zaman & Arslan, 2014]. Among the relative indicators, the most useful from an analytical point of view are:

1. The ratio of external debt to GDP/GNI (this indicator is also called the debt sustainability indicator).
2. The ratio of the volume of external debt to the volume of exports of goods and services.
3. The ratio of external debt service to GDP—external debt payments)/GDP.
4. The ratio of external debt servicing to exports of goods and services (this indicator is also called the current debt burden ratio).
5. The ratio of official reserve assets to the volume of external debt.

Comparative analysis shows that the indicator of debt sustainability in 2019 China accounted for 15% of its GNI, India—for 20%, and Pakistan—for 34%. A similar situation was observed with the current debt burden ratio, which was approximately at the same level for China and India (10 and 9% of exports, respectively), which is significantly higher than for Pakistan, where it reached 35%. The ratio of the volume of reserve assets to the volume of external debt was 148% for China, 77% for India and only 13% for Pakistan.

Even though in absolute terms, the volume of external debt in Pakistan is the minimum among these three Asian states, it is the least favourable debt situation, while China and India are generally prosperous and do not cause much concern.

3 The External Debt Crisis of the 1980s

The last serious crisis in the sphere of foreign debt broke out in August 1982, when dozens of Latin American states declared a default. The crisis quickly spread to numerous countries in Africa and some in Asia, thereby turning from a regional crisis to a global one. The Latin American economies were the most affected by the debt crisis: they accounted for almost half of the total external debt of developing countries and 44% of repayments. The total volume of the external debt of developing countries amounted to \$831 billion [Todaro & Smith, 2015, pp. 693–695].

The difficult situation of debtor countries in the 1980s caused the need to resolve the external debt crisis, in which three stages can be distinguished. The first stage covered the period from 1982 to 1985 and was characterised by various forms of postponements and deferrals of payments. New lending was minimised, and newly received loans were mainly spent on repayment of previously received loans and credits. In this regard, we can talk about the phenomenon of the “debt loop”.

The second stage, which began in 1985 and lasted until the end of the 1980s, is associated with the implementation of two plans, the so-called “Baker Plan” and “Brady Plan”. The first plan, named after its author, U.S. Secretary of the Treasury J. Baker, provided for the allocation of \$29 billion to the 15 largest debtor countries, subject to their compliance with the IMF recommendations on reforming their national economies. The Plan recognised the need to ensure growth and the flow of financial resources to developing economies. In turn, debtor countries had to increase the share of the private sector in the economy, privatise state-owned enterprises, reduce taxes on private business, reduce customs barriers and open the domestic market for foreign goods and capital. Of course, it was about imposing a liberal model of development on debtor states and their greater integration into the world economy. It is noteworthy that the economic liberalisation plan put forward in the Baker Plan subsequently formed the basis of the plan developed by J. Williamson—the well-known Washington Consensus (1989), a set of rules for conducting liberal economic policy. The “Baker Plan” was met with little enthusiasm by developing countries. It was obvious that he could not have any significant impact on solving the debt problem, because the funds under this plan were insufficient for the economic development of debtors, given that in 1986–1987 those 15 states had to pay \$130 billion in interest alone, and their total debt was 437 billion dollars.

The “Brady Plan” was developed by the next U.S. Treasury Secretary, N.F. Brady. Under this Plan, it was supposed to restructure the external debt of developing countries, i.e., its renewal, which usually included extending the terms of its servicing, softening the terms of this servicing, etc. A technique for carrying out operations to reduce the debt burden was developed. Among its instruments were the repayment by the debtor country of some of its obligations at a sharply reduced rate, i.e., below the secondary market rate; as well as the exchange of debt obligations (on the main debt and interest) for special bonds, the so-called Brady-bonds, discounted (or equal in face value) to debt with long maturities and partially with preferential interest. As practice has shown, this Plan turned out to be more successful than Baker’s Plan.

The implemented policy has brought some success: 54 developing countries have had their external debt decreased to 50–70% of GDP.

The last, third, stage of the settlement of the external debt problem is linked to its partial cancellation. For example, under the “Naples Terms” adopted in 1995, low-income countries’ debts and payments for their servicing decreased by 67%. The “Lyon Terms” (1996) provided for reducing all debt obligations by 80%, and the “Cologne Agreements” (1999)—by 90%. Meanwhile, it should be noted that the cancellation of part of the debt was often practised against only those developing debtor countries that actively carried out liberal reforms. The Naples conditions stipulated the need to implement the Washington Consensus within three years.

The external debt crisis had severe consequences for the economies of developing debtor countries. As a result, economic growth in these countries almost stopped in the 1980s (in this regard, the 1980s are called the “lost decade”), income and consumption per capita decreased, and investment in the economy of the largest debtor countries fell to the level of 1970.

4 Volume and Structure of External Public and Private Debt

According to the results of 2020, the external debt of developing countries is \$8.687 trillion, having increased almost 2 times since 2010 (Table 1). At the same time, the main increase in the global volume of external debt was provided by developing Asia, whose debt in 2010–2020 increased from \$1.793 trillion to \$4.481 trillion, i.e., more than 2.4 times. This is primarily because it is here that the fastest growing economies of the world are located, which, due to lack of financial resources, resort to external borrowing for their rapid economic development. A significant increase in the volume of external debt (2.3 times) is also traditionally observed during this period in Sub-Saharan Africa, where the vast majority of the least developed countries are located. A certain increase in the volume of external debt was also observed in the regions of Latin America and the Caribbean (1.9 times) and North Africa and the Middle East (1.9 times).

A country’s external debt includes two components: (a) public and publicly guaranteed, and (b) private sector non-guaranteed. Statistics show that in the last two decades, the private component has prevailed in the structure of the external debt of the vast majority of developing countries. This is due to the general liberalisation of national economies, on the one hand, and an acute shortage of capital for the

Table 1 The scale of the external debt of developing countries, trillion dollars

	1990	2000	2010	2016	2019	2020
Amount of debt	1.213	2.524	4.360	6.658	8.246	8.687

Source World Bank Group (2022)

Table 2 Long-term and short-term components of external debt in developing countries, %

	2000	2005	2010	2016	2017	2018	2019	2020
Long-term debt	86.6	80.6	69.6	74.3	72.3	70.7	71.6	72.2
Short-term debt	13.4	19.4	30.4	25.7	27.7	29.3	28.4	27.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source World Bank Group (2022)

development of national business in the national financial market, on the other. For example, the share of private external debt in India reached 66% in 2019. In China, this figure has risen to 96%.

The structure of external debt also includes short-term (up to one year), medium-term (from 1 to 5–7 years) and long-term (over 5–7 years) components. At the same time, all countries strive to prevent a sharp increase in the short-term component of external debt. In the past decade, the share of the short-term component among the developing countries as a whole did not exceed 30% (Table 2).

The category of long-term debt includes external loans on commercial terms, trade loans, and the purchase of SDR from the IMF. The structure of short-term debt is traditionally dominated by trade loans with a maturity of up to 1 year. The last decade is characterised by the build-up of short-term debt by developing countries in the positions of “portfolio investments in government securities” and “investments of foreign central banks in treasury bills”.

5 External Debt in the Twenty-First Century

The reasons for the significant volume of external debt of developing countries can now be divided into two groups: endogenous and exogenous. The former includes, mainly, the inability to meet the increased domestic demand for capital on the domestic market to finance the modernisation of the national economy (and in this regard, there remains a need to scale up not only commercial borrowing and trade loans, as well as foreign technical assistance to implement various development projects). Improper use of these funds and insufficient increase in export volumes also play a negative role here: the import–export coverage ratio in the vast majority of developing countries barely reaches 50–60% [see more Lane & McQuade, 2014].

Among the exogenous factors, the acquisition of loans by developing countries in recent years mainly on market conditions is highlighted (the share of so-called “concessional aid” and grants is minuscule). On the other hand, the growth of exports is hindered by all kinds of barriers and restrictions faced by suppliers from developing countries in world markets.

It should be noted that the structure of the external debt of developing countries has also undergone serious changes. From 2000 to 2020, the share of external debt of public and publicly guaranteed sectors decreased from 41% in 2000 to 39.7% in 2020

Table 3 Key indicators of developing countries' external debt, %

	1990	2000	2010	2016	2010	2020
External debt/GNI	39	39	22	26	26	29
External debt/Exports	86	133	81	107	101	123
Foreign debt payments/Exports	21	24	10	15	14	17
Reserve assets/ED	–	–	120	83	73	72

Source World Bank Group (2022); IMF. World Economic Outlook. April 2019

(36.3% in 2010), while the share of external debt of private sector non-guaranteed increased, from 59–60.3% (63.7% in 2010). This indicates that the main borrower of funds gradually became private banks and companies rather than the government or public sector, which indicates the strengthening of their ties with foreign creditors. In absolute terms, the public debt of developing countries reached \$3.444 trillion after 2020, while a significant part of it (about 40%) is borrowed from the International Development Association (IDA) and the IMF, nominated for SDR.

When analysing the indicators of external debt burden, it should be emphasised that, despite the impressive amounts of debt in absolute terms, the overall situation in the world at the beginning of the twenty-first century has stabilised and now looks satisfactory. The debt sustainability ratio in the 2010s did not exceed 30% of GDP, and the results of 2020 amounted to 29.0% of GDP. The situation with debt repayment has also stabilised: the current debt severity ratio in developing countries in 2010–2020 was in the range of 10–17% (Table 3).

The relatively favourable situation with the settlement of external debt among developing countries is observed primarily in the East Asian region, primarily at the expense of China. Here, it is provided mainly by stable export growth, as well as a very comfortable investment climate, which stimulates the inflow of FDI, and contributes to the development of national economies but does not increase external debt indicators.

India's External Debt

The problem of external debt, which worsened in India in the early 1990s, ceased to be so relevant by the end of the 2020s: the relative scale of debt decreased due to the skilful policy of the state.

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India, having a relatively small, both in absolute and relative terms, volume of external debt in 1980/81 (\$23.5 billion, or less than 12% of GDP), increased to \$83.8 billion (28.7% of GDP) over the next decade. The reasons for such an increase in debt are rooted in the foreign trade and investment policy pursued in

India in the 1980s, as well as in the particular economic and political situation at that time, both in India itself and in the world as a whole.

The stimulating export policy of the first half of the 1980s did not provide the expected results, and neither did the next global economic crisis of the early 1980s. Calculations show a serious dependence of Indian exports on the state of the economies of developed countries, as well as on the dynamics of world GDP. In particular, the coefficient of elasticity of Indian exports to world GDP in the 1980s was 2.16. The dependence of Indian exports on the well-being and success of economic development of Asian countries was even higher—in India's trading partners the coefficient of elasticity was 3.03 (3). At the same time, the growth rate of Indian exports in 1980–1985 barely reached 3%.

In addition, the rapidly developing Indian economy continued to be in dire need of oil, the volume of purchases of which by 1989/90 reached 23.5 million tons per year. The situation was aggravated by the increased global energy prices at the end of the decade. Moreover, even their decline in the mid-1980s could not have a noticeable stabilising effect on India's trade balance.

On the other hand, the adjustments made in the import policy in the 1980s made the import of capital-intensive equipment freer, which effected a four-fold increase in imports—in particular, purchases of equipment in 1982–1985 increased by 3.6% on average, while in 1985–1990—by more than 16%. Meanwhile, the payment for the import of equipment turned out to be very burdensome for the state. Although the growth rate of Indian exports as a whole averaged 10–12% in 1985–1990, and the share of industrial exports increased to 75% of total Indian exports by FY 1989/90, all this could not seriously reduce the trade deficit.

The situation with the balance of services, coupled with the stagnation of money transfers from non-residents of Indian origin (NIO), provoked a reduction in income from the “invisible accounts” of the balance of payments. If in 1978/79 the income on them covered 89% of the deficit of the trade balance of goods, then in 1984/85 it was only 57% and in 1989/90 it was less than 50%. All this pushed the government to seek additional financial resources, the main sources of which were, first, external commercial borrowings in the form of loans from foreign banks (an average of \$2–3 billion annually), secondly, bond placements and, finally, trade loans carried out by Indian enterprises. Meanwhile, with the intensification of the monetary and financial crisis in India in FY 1990/91 and 1991/92, the inflow of external credits and loans decreased, which was caused, among other things, by the decline in the country's credit rating in the international arena.

Another source of the formation of an impressive amount of Indian external debt was the active encouragement of the inflow of foreign currency to the deposits of NIO. Wanting to encourage customers to invest in deposits, Indian banks had to set sufficiently high interest rates and provide them with a guarantee of losses from exchange rate fluctuations. During the same currency crisis in FY 1991/92, NIO withdrew their funds from the Indian economy in a short time, aggravating the difficult situation with external debt. All this increased the problem of servicing

external debt, the settlement of which became one of the primary tasks of the Indian government: in FY 1990/91, 35.3% of export earnings were spent on average on repaying the foreign debt, and in FY 1991/92, it was 30.2%.

The external debt continued to build up in the first half of the 1990s. The annual growth rate of Indian exports in 1991–1993 barely exceeded 3%, which was not enough to accumulate foreign currency funds and direct them to repay the already accumulated debt. The reduction in India's exports was also affected by the curtailment of its trade cooperation with the CIS countries—the former USSR republics (by 62% in dollar terms).

The first signs of improvement appeared only in FY 1993/94. This was facilitated, on the one hand, by falling oil prices and the decreasing volume of imported goods and on the other hand, by an increasing pace of Indian exports (FY 1993/94–1995/96—about 19%). The prevailing favourable situation contributed to the growth of the import–export coverage ratio. In addition, remittances of migrant workers to India also increased markedly due to a competent NIO account management policy. All this reduced the current account deficit of the balance of payments and, as a result, debt relief.

According to the results of 2020, India's external debt amounted to \$564.179 billion, having increased 6.7 times during the period of liberal reforms. The structure of India's external debt also underwent serious changes in the 1990s and 2000s: the share of government external debt decreased from 59.9% in 1991 to 34.2% in 2020. Despite the impressive volumes of Indian debt in absolute terms, in general, the situation in the country has stabilised in the post-reform period and currently looks very satisfactory [see more Tabassum, 2021]. The debt sustainability ratio in the 2000s–2010s did not exceed 20% of GNI, and the current debt severity ratio of India was at the level of 5–10%.

6 Conclusions

1. External Debt is the Financial Obligations of the State that Have Arisen to Foreign Creditors, Including the Amount of Debt and Unpaid Interest on Them.
2. The problem of external debt is relevant only for developing countries, while developed countries with their convertible national currency do not formally have external debt. It is believed that, if necessary, developed countries can pay off their foreign debt with their national currency.
3. The absolute indicator of external debt often does not allow us to adequately assess the scale of the problem. Experts and analysts prefer to use several relative indicators, among which the most commonly used are the debt sustainability indicator and the current debt burden. In the 2010s, the debt sustainability indicator did not exceed 30% of GDP, while the current debt severity indicator was in the range of 10–17%.

4. The last serious crisis broke out in August 1982. The crisis could not be resolved for almost two decades and, among other things, was one of the triggers for liberalisation in some developing countries.
5. According to the results of 2020, the external debt of developing countries is \$8.687 trillion, having increased almost 2 times since 2010. At the same time, the main increase in the global volume of external debt was provided by the region of developing Asia, because it is here that the fastest growing economies of the world are located.
6. The external debt of the state includes two components: the official (state) external debt, which falls on the shoulders of state bodies and the private external debt, i.e. the external debt of private companies and banks not guaranteed by the state. According to statistics, in the last two decades, the private component prevails in the structure of the external debt of the vast majority of developing countries, which is caused by the general liberalisation of national economies and an acute shortage of capital for the development of national business in the domestic market.
7. The government of any state strives to pursue a policy on external borrowing, preventing a sharp increase in the short-term component. In the 2000s and 2010s, the share of the short-term component among the developing countries did not exceed 30% on average.
8. The reasons for the significant external debt of developing countries can now be divided into two groups: endogenous and exogenous. The first is the inability to meet the increased domestic demand for capital on the domestic market to finance modernisation and progressive development of the national economy, and the second is the acquisition in recent years by developing countries of borrowings mainly on market conditions.
9. The relatively favourable situation with the settlement of external debt among developing countries is observed primarily in the East Asian region, mainly at the expense of China. It is ensured by stable export growth, as well as a very comfortable investment climate, which stimulates the inflow of FDI, and contributes to the full development of national economies but does not provoke a deterioration in external debt indicators.

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Business Cultures in International Business



Natalia Piskulova 

Abstract It is becoming increasingly important to know the business cultures of different countries. A lot of companies are expanding their activities in international markets. The main factors in the formation and differences of business cultures were religious, historical and linguistic features. The most significant differences in culture-forming values are observed between Western and Eastern business cultures, but a significant difference is also noted within the framework of European culture between the countries of Southern Europe and other countries. In the context of globalisation, there is a certain convergence of values of different countries while maintaining key differences between business cultures.

1 Introduction

The expansion of companies' activities in international markets makes it important to know the business cultures of different countries. Awareness and use of this knowledge can contribute to both increasing the competitive advantages of companies as a result of developing a competitive strategy and negotiating, taking into account the characteristics of the counterparty when conducting trade and investment operations.

The main factors in the formation and differences of business cultures were religious, historical and linguistic features. The most significant differences in culture-forming values are observed between Western and Eastern business cultures, but a significant difference is also noted within the framework of European culture between the countries of Southern Europe and other countries.

In the context of globalisation, there is a certain convergence of values of different countries while maintaining key differences between business cultures.

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2 Role of Business Culture in International Business

There are many definitions of culture. Most researchers agree that this is a system of values and norms that are shared by a group of people (the country as a whole, business, as well as individual groups of people, including firms) and are passed down from generation to generation. Values and norms may include society's attitude to personal freedom, justice, honesty, loyalty, collective responsibility, etc.

There are different levels of culture. The national, business and corporate levels play an important role in international business. Most profound values are formed at the national level since a person's birth. There is a common language and religion within national borders, and there are laws within which companies operate. We emphasise that it is the set of values and norms of national culture that determines the business culture of the country, i.e., it is the system of values and norms that set up the ethical basis of entrepreneurial activity and form the behaviour of companies in the country. It can be said that business culture is a part of the national culture, covering the economic activity of the country. Companies, in turn, develop a corporate culture, which, as a rule, is based on national and business values and norms. MNEs use corporate culture as a means of uniting affiliates in different countries. It is based on the acquisition of certain skills and symbols of the company during the professional career and is less profound than the national one.

At the same time, national culture may include subcultures, ethnic groups, races, etc., some of which transcend national borders, acquiring some features of other cultures. For example, ethnic Chinese in different Asian countries have a mixture of Chinese and local cultures. At the same time, in countries with several official languages and cultures (Switzerland, Belgium and Nigeria), certain common values are formed within nations that make up national identity and influence doing business in the country. At the same time, there may be significant cultural differences within one country, which is noted, for example, in the northern and southern states of the US or the northern and southern provinces of Italy. Even countries with a similar culture may have cultural differences that are worth considering. There are strong differences in the role of women in the economy of different Arab countries.

Sometimes common features connect separate groups of different nations more than within nations, i.e. a profession can unite people of different cultures. For example, students from different countries easily find a common language. IT companies in all countries are characterised by a flexible, informal and innovative atmosphere.

The importance of the business culture factor in international business is constantly increasing in the context of conducting business operations at the global level and increasing competition between companies originating from different cultures.

The predominance of special values in cultures can contribute to getting competitive advantages. In the 1980s, Hofstede and Bond, have investigated the links between the economic success of the "Asian dragons" and such a parameter as collectivism, concluded that an important success factor in addition to economic and political

conditions was a national culture based on collectivist values, “synthetic” thinking, Confucian ethics (Hofstede & Bond 1984). M. Porter, known for his research on international competitiveness, also emphasised that national differences in culture can influence the competitive advantages of countries in the global economy (Porter 1985). After the study of business cultures of different countries, Hampden-Turner and Trompenaars determined how the special values of different cultures contributed to the successful development of many industries (Hampden-Turner & Trompenaars 1994). They attempted to explain the reasons for the success of Germany in creating an efficient infrastructure, the USA in inventing new products, and Japan in its commercialisation.

In international business, one should be aware of the cultural differences necessary for specific type of operation. For export operations, it is important to take into account cultural factors that influence marketing programmes, including advertising, which phrases and pictures are preferable to use. For example, in Muslim countries, it is forbidden to show female face pictures. In Saudi Arabia, the franchise company had to change the logo of Starbucks, where a mermaid with a crown is depicted because the authorities of the country considered the demonstration of a female face immoral from a religious point of view. When implementing FDI, we have to take into account the specifics of foreign labour management including management style and personnel motivation. Multifunctional activities (production and sales) require knowledge of a wider range of cultural characteristics. The risks of doing international business are reduced if the company operates through other firms familiar with the customs of another country.

The role of culture in international relations and business is vividly illustrated by the formation of integration associations, in which the intensification of commercial operations is accompanied by the interaction of different cultures. Jean Monnet, one of the “founders” of European integration, ascribed the saying: “If we were to do it all over again, we would start with culture” (Sassatelli 2007).

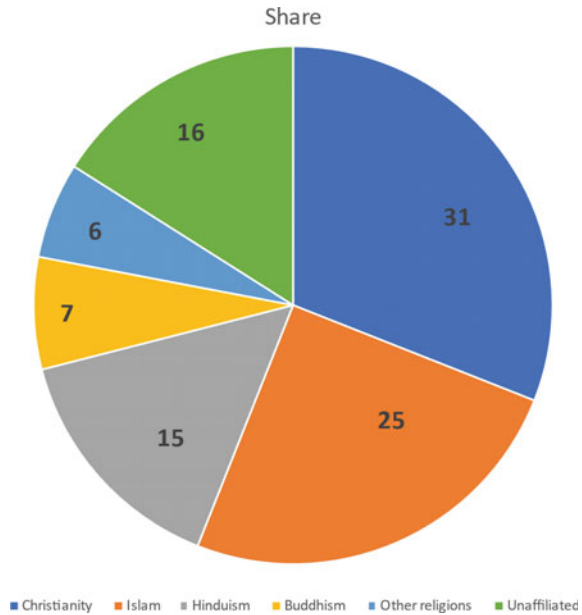
3 Business Culture Factors and Features

Business cultures of countries are characterised by features that, in turn, can influence the formation of cultural values. The main factors in the formation of cultures are religion, language, history, education, and the social structure of society. We shall focus a little more on the first three factors.

3.1 Religion as a Factor in the Formation of Business Culture

One of the main features that historically has had a profound impact on the value systems of countries is religion. There are about 10 thousand religions in the world, of which only four, and in some traditions only three, are considered to be global

Fig. 1 Religion’s share in a total estimated population of the world, 2020 (Source World Population Review [2022] <https://worldpopulationreview.com/country-rankings/religion-by-country>)



in terms of population and influence—these are Christianity, Islam, Hinduism and Buddhism (Fig. 1).

Although the basic norms of morality in religions generally coincide, the predominance of certain values in each of them has an impact on the economic activities of states and companies.

Christianity is the world’s largest religion, with about 2.4 billion adherents, mainly in Europe and America. In Christianity, Protestantism probably played the greatest role in the economic development of countries, eliminating the contradiction between religious beliefs and doing business. Protestant ethics pays special attention to hard work and the creation of wealth (for the glory of God), which, instead of being spent on worldly pleasures, should be used for the further development of business. It is these values, the combination of persistent and systematic work with the accumulation of capital, that contributed to the development of capitalism in Western Europe and subsequently in the USA. Sociologists and philosophers, especially the German sociologist M. Weber, emphasised the links between Protestantism and capitalism in 1904 (Weber 2001).

Protestantism had other important features for the formation of business culture. Moral guidelines were replaced by the rule of law, which contributed to the formation of such a cultural parameter as universalism. In addition, in early Protestantism, the right to freedom of religion was the main thing, which later made it possible to focus on the development of personal freedom and individualism as the basis of market capitalism.

Islam, the second largest religion in terms of the number of followers (more than 1.9 billion people), appeared 600 years after Christianity and was the fastest religion

to spread. Adherents of Islam are Muslims who make up the majority in more than 35 countries and inhabit almost all the territories bordering each other from the northwest coast of Africa through the Middle East to China and Malaysia in the Far East.

The basic principles of Islam are respect for elders, especially for parents, generosity, justice towards others, etc. Islam is the main component of all aspects of a Muslim's life, forming the values and norms of their behaviour. In everyday life, a Muslim must pray five times a day (even if business meetings have to be interrupted), women must be dressed in appropriate clothes and obey men, and the consumption of pork and alcohol is banned.

Most of the economic principles are established by the Koran. In Muslim countries, free enterprise and legitimate income from commercial activities are allowed (the Prophet Mohammed was first a merchant), which should be fair and not based on the exploitation of other people for profit. Charitable activities to help the poor are also welcome. Islam emphasises the need to fulfil contractual obligations, keep your word and not cheat.

One of the principles of Islam prohibits paying or receiving interest, which is considered a serious sin. In Pakistan, this ban is fixed in the State law, which has been in force since 2001. To avoid paying interest, Arab banks lend money with no interest, but for specific projects, i.e., they are not creditors, but investors.

Hinduism (about 1.2 billion adherents) is spread mainly on the Hindustan peninsula. It appeared about 4 thousand years ago and is the oldest religion in the world. Unlike Christianity and Islam, it is not a monotheistic religion. Its principles provide for some social obligations. The Hindu believes in reincarnation (transmigration of the soul after death) and karma, i.e., the spiritual development of the human soul, depending on how a person lives. Continuous improvement in each new life allows to achieve nirvana: complete spiritual perfection. One can achieve nirvana through an ascetic life, rejecting material well-being and searching for the spiritual. Another characteristic of Hinduism is the caste system, which is also believed to hinder economic activity. The limitations of this system make it difficult for employees of companies to move up the corporate ladder due to their belonging to a certain caste. At the same time, there are now many hard-working entrepreneurs in India whose activities contribute to economic growth.

Buddhism has over 500 million followers mainly in Central and Southeast Asia, China, Korea and Japan. Like Hinduism, Buddhism emphasises the importance of spiritual achievements. At the same time, the absence of a caste system and severe asceticism provides a more fertile ground for economic activity than Hinduism.

In addition to the main world religions, the philosophy of Confucianism had a significant influence on business values. Confucianism was the official philosophical and ethical system of China for more than two millennia before the 1949 revolution. After the revolution, the adherence to Confucian ethics weakened, but still about 7% of the world's population are followers of the doctrine, mainly in China, Korea and Japan. Unlike religions, Confucianism does not address the existence of supernatural forces or life after death. It involves following an ethical code that defines the type of human relationships.

Despite the different nature of these religions and philosophies, scientists believe that Confucianism is as important in the formation of business culture as religions. From this point of view, the main values of Confucianism are of the greatest interest: loyalty, mutual obligations and honesty in relations with others. For example, loyalty to management in modern companies from Confucian cultures allows for reducing the level of conflict between managers and employees and achieving cooperation with lower costs. At the same time, loyalty is not one-sided. Confucian ethics assumes mutual obligations, i.e., the obligation of leadership to reward loyalty by bestowing benefits. Loyalty is not expected if the benefits are insufficient. In China, under Confucian ethics, there is a system of “ties” that are supported by mutual obligations. In Japan, this ethic is most clearly expressed in the system of lifelong employment.

The third cornerstone of Confucian ethics is honesty. Companies’ trust in each other in fulfilling obligations reduces costs because there is no need to hire expensive lawyers. Successful cooperation between automotive companies and component suppliers in Japan is associated with a combination of honesty with mutual obligations. Experts believe that this partly explains the competitive advantages of Japanese companies. In China, failure to fulfil mutual obligations in the system of “contacts” will completely ruin the reputation of the company and will prevent them from using the resources of this system. The contacts based on strong mutual relations can play a more important role in the implementation of agreements than even the laws of a country. Some scientists even claim that “contacts” is a replacement for the legislative system.

3.2 Language as a Factor of Business Culture

Culture rapidly spreads when people speak the same language, which explains significant cultural similarities, for example, between English-speaking or Spanish-speaking countries. The most common business language in the world is English, followed by French, Spanish and Chinese. French and German businessmen are likely to negotiate in English, but the company’s activities in the market will be more successful if they speak the language of the host country.

Language can have a direct impact on the international activities of companies, presenting both problems and opportunities. Due to differences in the structure of languages and the use of dialects and slang, serious problems associated with an incorrect translation may arise. Even in countries with the same language, there may be problems with understanding. For example, in the USA and the UK, about four thousand words have different meanings. In England, the word “stock” means the total amount of goods which it has available to sell, and in the USA—shares in the ownership of a company. The word “yes” does not always mean “I agree with you” in the UK. It should be perceived as “I heard what you said”, which is especially important to take into account when discussing a project or negotiating with a supervisor about a salary increase.

Particular attention should be paid to the careful use of humour. In some countries, it is used very actively to create a favourable atmosphere in negotiations, for example, in England or Ireland. In the USA, almost no speech or presentation begins without a joke, however irrelevant. But in other cultures, you should not use humour in business relationships, a joke can be regarded as a frivolous trick. At the same time, outside of work, a sense of humour can be perfectly developed, for example, in Germany, Japan or Turkey.

Differences in the structure of speech cause different types of negotiation. In Western culture, it is common to start a business conversation by discussing the main issues that set the tone and direction of negotiations, and in Chinese business culture, the topic is first discussed and explanations are given, and the main idea appears only at the very end of the speech. Therefore, English-speaking representatives often do not understand the basic idea expressed by the counterparties of eastern business cultures. In this regard, it is worth being patient and listening when negotiating.

An important means of communication is non-verbal language—gestures, colours, etc. Most gestures are not universal. The same gestures in different cultures can have different meanings, which can cause problems. For example, a gesture meaning “OK” in English-speaking countries, in France means “zero”, or “nothing”, in Eastern Mediterranean countries it is an indecent gesture, and in Japan it means money. The hand gesture with a request to approach, used in Western cultures, is applied only to pets in some Eastern countries.

Another aspect of the “silent” language is the distance between people during a conversation. In the USA, the distance for business communication is 1.5–2.5 m (for personal—0.5–1.0 m), and in Latin America a maximum of 1–1.5 m. If the distance differs from the conventional one, people feel uncomfortable. The American manager at the negotiations in Latin America will instinctively move away from his Latin American interlocutor to increase the distance, and as a result, both sides will feel uncomfortable.

Another important factor of business culture is education, which contributes to the creation of national values and forms an approach to solving issues. Education is one of the main determinants of creating competitive advantages for states and companies.

3.3 History as a Factor in the Formation of Business Culture

The country’s business culture is largely determined by its history. For example, major historical victories or defeats in wars contribute to the formation of certain values. Germany has been at the epicentre of numerous wars for many centuries, most religious conflicts (between Austria and Spain on the one hand, and France, Sweden, Holland and Denmark on the other) were resolved in the “heart” of Europe. As a result, the country suffered huge human and financial losses, besides, after the outbreak of two world wars, the German nation was disliked by the entire population of Europe. Researchers believe that this led to the formation, and then to the

strengthening of such characteristics of German culture as the pursuit of stability and order.

An important factor in the formation of values may be the influence of other cultures, in which some countries have historical roots. For example, many European cultures were influenced by Roman and Greek civilisations.

4 Key Parameters of Business Cultures

Depending on the dominant values, there are different classifications of national business cultures—Hofstede, Schwartz, Trompenaars and Hampden-Turner, etc. Researchers identify several dozen parameters by which cultures differ: attitude to time, competition, team, power, etc.

The most famous pioneering research was conducted by Hofstede, based on the study of more than 100 thousand IBM employees across 40 countries. He identified the four most important characteristics of business cultures: the distance of power, the avoidance of uncertainty, individualism/collectivism, masculinity/femininity, and later “Confucian dynamism” was added to them. Almost all of these parameters were later reflected to some extent in other classifications.

We can highlight the Trompenaars-Hampden-Turner classification, which has become one of the most widely used in the practical work of business. In this regard, it is mainly considered in this chapter with the author’s interpretation and additions. The classification is based on several parameters of business cultures, or dilemmas (divergent dominant values). Over time, the creators of the classification changed the number and nature of dilemmas. The predominance of one of a pair of values in the culture parameter has pros and cons when doing business and can have an impact on the competitive advantages of companies. Universalism and particularism, individualism and communitarianism, affectivity and neutrality, specificity and diffusion, sequential time and synchronized time, and achieved status and ascribed status were identified as the main parameters of cultures in the classification of Trompenaars-Hampden-Turner.

The Universalism/Particularism parameter defines people’s attitude to laws and rules. Universal cultures are distinguished by the priority of laws and rules in all spheres of life. In particular cultures, exceptions and specific conditions that prevent the application of general rules come to the fore.

With rare exceptions, moral guidelines have been replaced by the rule of law in almost all countries with a high degree of universalism the Protestant religion is prevalent. These are such countries as the Anglo-Saxon countries, as well as Switzerland, Sweden and the Netherlands.

Perfect example of a universal culture is the USA, whose business culture is characterised by following a huge number of laws, rules and procedures. There are the most stringent laws prohibiting discrimination based on differences in gender, age, origin, ethnic roots, physical disabilities, etc. Another feature of the universal

culture is that rules are equal for all. Even people with the highest authority and connections can be brought before the law.

Universalism in business culture is expressed in the use of standardised contracts that must be executed regardless of circumstances. For example, Americans almost always go to court at the slightest violation of written contracts. All employees of companies obey general rules, exceptions are rarely made for personal circumstances, and favouritism based on personal connections is considered unprofessional.

Attempts to standardise all aspects of life, including the business sphere, have negative sides. Many foreigners characterise American models and the “one size fits all” approach as “simplistic” and “too American”. Carnegie’s bestseller “How to Win Friends and Influence People” (Carnegie 2009) is an example of a technological approach to friendship, which is not difficult to win by repeating people’s names and praising them in conversation. A striking example of universalism is the attempts of the USA to spread its laws and business ethics around the world, which are not always positively perceived by other cultures.

The countries with the Catholic religion are less universal: Brazil, Spain, Mexico and France. The most particular are the countries with such religions and philosophies as Buddhism, Hinduism, and Confucianism: the Republic of Korea, China, Indonesia, Japan and Singapore. In particular cultures, it is believed that the driving forces of any activity are special requirements and relationships, rather than abstract rules and a universal approach to solving issues. Rules, goods and services that do not take into account the specifics of the conditions are considered unacceptable.

Therefore, particular cultures do not like deadline pressure in establishing business relationships, the main thing for them is to create a trusting atmosphere to avoid problems later. If you do not spend enough time on a project, then from the point of view of particular culture, it is doomed to failure. An example is the planned sale of factories by the British company Rolls-Royce to the Japanese company Toyota. The English company set a deadline for submitting a proposal for the purchase of plants. After that, Toyota immediately refused the deal, because the deadlines may hinder the establishment of contacts. Something similar happened during the negotiations between Korean Samsung and Dutch Fokker. After the Dutch company set a deadline for submitting proposals, Samsung withdrew from the deal (Trompenaars & Hampden-Turner 2000).

In particular cultures, a contract is only the basis for obligations that may change due to changing circumstances. Obligations to people are often more important than rules and even state laws. For example, businessmen from Asian, Arab and Latin American countries may consider that the contract is automatically cancelled if circumstances change, for example, the person who signed the contract was dismissed.

The Individualism/Communitarianism parameter implies the priority of the interests of an individual or a team. In business cultures where individualism prevails, people regard themselves primarily as a person, whereas in collectivist cultures—as members of the team. The former includes most Western countries, the latter mainly Eastern cultures.

The value system in individualistic cultures usually emphasises personal skills. Cultures are characterised by a low degree of dependence on the team, the desire for personal time and space, the expression of one's own opinion and the independent solution of problems. The main motivation is self-realisation and focus on achievements. These cultures stand out for entrepreneurial and inventive abilities that stimulate business activity. New products and technologies are largely the results of the activities of individuals, which explains (among other factors) the dominance of American companies in the global market in such industries as software and biotechnology, for the development of which inventive abilities are primarily needed.

Individualism is expressed in a high degree of employee mobility, which contributes to their acquisition of experience and knowledge, but does not always have a beneficial effect on companies. In turn, the owners of companies consider the employee and the creation of teams as a tool to fulfil their goals. When the goals are achieved, the teams are disbanded, and if necessary, mass layoffs are performed.

Thus, the focus on individualism, on the one hand, helps to create a dynamic entrepreneurial economy, and on the other, can increase the costs of doing business due to the negative impact on the stability of management and cooperation.

Collectivist values are characteristic of Latin American and especially Eastern, primarily Confucian business cultures. In these cultures, a person's merits are directly related to the achievements of the group (firm), and its members are motivated to work together to achieve common benefits. In turn, in exchange for a person's loyalty, the team has to protect his or her interests. Social status and promotion are largely determined by belonging to the company. Even in conversation, a representative of such a culture (for example, Japanese) usually says "I work for such and such a company" (i.e. I belong to a certain family, clan, etc.). The main value is harmony, not the expression of one's own opinion, and the main motivation of the employee is the presence of a favourable physical and emotional environment. The emphasis is on cooperation, and the creation of a competitive atmosphere in working groups is considered unacceptable.

Collective decisions take precedence over individual ones. Ignoring the advice of others before making decisions is considered offensive, even if it takes a long time to discuss the problem. In this regard, decision-making in a collectivist culture requires a lot of time and more effort due to the need to convince everyone that a certain point of view is correct. The method of deciding by vote (as, for example, in the UK) is considered unacceptable, consensus is needed. For example, in Japan there are "ringi"—the decision-making process when each participant in turn has to approve it.

Scientists believe that the success of Japanese firms in the global economy is partly due to their ability to establish close ties between people both within the company (between production, marketing and research units) and with suppliers on issues of design, quality control, inventory reduction, etc.

In a collectivist culture, employees are much less likely to change jobs and prefer lifelong employment in one company. In Japan, in the post-war period, the system of lifelong employment existed for a long time and partially remains to this day. Recent

surveys have shown that almost 90% of people have a positive opinion of such a system, although the number of such workers is currently much smaller (Takahashi 2019).

Collectivist values also have negative sides. Japanese companies, unlike American ones, lack dynamism and entrepreneurial spirit, which prevents the creation of fundamentally new products and new business methods. In this regard, high-tech enterprises developed more slowly in Japan than, for example, in the USA.

The degree and form of collectivism vary in cultures. China and Mexico, traditionally collectivist cultures, differ from Japan because their collectivism extends mainly to family relations, rather than to the business sphere. In addition, the concept of family in China and Mexico includes not only a married couple with children but also a “vertical” family (several generations) and a “horizontal” one (cousins).

Some European cultures also have a fairly high level of collectivism, including Germany and to a lesser extent Spain, Portugal and Greece.

The Affectiveness/Neutrality parameter characterises the degree of emotional involvement in the business sphere. The representatives of the first type of culture react actively to events and people, openly expressing their emotions. Neutral cultures prefer to keep emotions under control regardless of the feelings experienced. The highest indicators of affectiveness are shown by some Arab cultures, and the Mediterranean ones (among Europeans). This parameter is less related to the dominant religion, and probably more dependent on historical traditions.

In affective cultures, the expression of emotions and even threats do not always mean further actions. For example, many observers emphasise the emotional involvement of Italians in conversations, including a raised tone and even shouting. In reality, representatives of this culture usually are just having a normal conversation. This should be taken into account while holding business meetings and negotiations, during which the expression of enthusiasm does not mean agreement with the counterparty’s point of view or a positive decision on the issue under discussion.

In turn, neutral cultures view the open expression of emotions as unprofessional, which does not mean a lack of interest in the issue. In such cultures, people are guided by a rational presentation of the position and focus on specific aspects.

The nature and degree of preference for one of the pairs of values differ even in similar cultures. Some cultures openly express emotions, but separate them from rational decisions, for example, the USA.

The Specificity/Diffusion parameter characterises cultural differences in people’s approach to solving issues, orientation to individual elements of life and activity, or their overall vision. In specific cultures, problems are structured and solved separately, while diffuse cultures, on the contrary, prefer a holistic approach to problem-solving. The former include Anglo-Saxon countries and some other European countries. The latter includes Asian and Latin American countries and several countries in Catholic Europe. For example, Anglo-Saxons are less inclined to consider theories and generalisations, preferring to deal with facts. Other Europeans treat accurate data only as part of an idea or system.

In specific cultures, the dismissal of an employee is considered a single measure that affects only budget expenditures, while in diffuse cultures, all consequences

are taken into account, including a negative impact on the workplace atmosphere and people’s trust. A holistic approach usually takes into account the long-term consequences of decision-making.

In the USA, all stages of production are usually separated from each other, scientific research can be carried out thousands of kilometres from the manufacturer. East Asian cultures often concentrate all stages—from invention to production in one place, which helps to reduce costs.

In specific cultures, work and personal relationships are separated from each other, while in diffuse ones these spheres are intertwined.

Specific and diffuse cultures also differ in the way they perceive information. In the USA and the Nordic countries, they perceive only the part of information that directly relates to the subject of the conversation, and the countries of southern Europe believe that all information is important for decision-making. In this regard, there may be difficult situations when representatives of different cultures hold negotiations. Managers of specific cultures consider partners to be inefficient employees wasting time, and managers of diffuse cultures believe that their interlocutors are too aggressive and untrustworthy.

Sequential time/synchronised time parameters characterise the attitude of cultures to time. In countries where sequence is preferred, time is seen as a sequence of the past, present and future that follow each other. These include the USA, Germany, Great Britain and Nordic countries (Fig. 2).

In such cultures, called monochronic, people prefer to work sequentially, i.e. they start working on the next task only after completing the previous one. Companies and organisations usually set a “deadline” for completing a task. The proverb “all in good time” and the “step by step” work characterise these organisations. During meetings they discuss one or more key issues with a pre-allocated time for each. The emergence of such time orientation is associated with the industrialisation era when each operation was allocated its own time. In such cultures, except for really urgent matters, meetings with short notice are unacceptable, they should be scheduled in advance, and the schedule kept to. The concept of “time is money” is closely related to the idea of punctuality, which is characteristic of monochronic cultures.

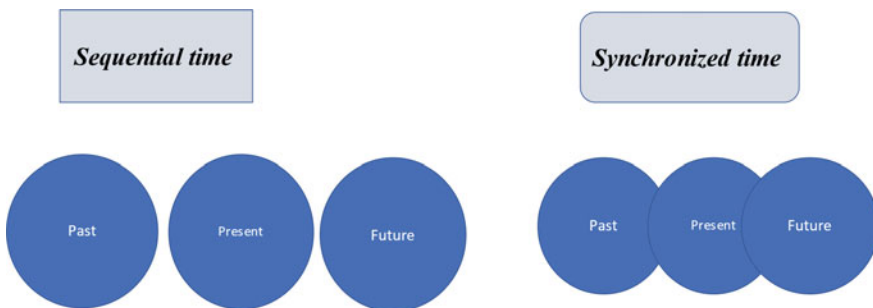


Fig. 2 Sequential and synchronised time

Such cultures (although not all of them) are aimed at short-term planning (for example the USA), for them the sequence of time implies quick income. The American expression “time is money” has had a huge impact on the creation of mass production and the competitiveness of the country, at the same time contributing to the emergence of one of the weakest parts of the American economy—the orientation towards short-term profits.

In the countries that focus on synchronised time, or polychronic cultures, the past, present and future are much more intertwined. These include the countries of Southern Europe, and to an even greater extent the East Asian states. Such business cultures value the ability to do several things at the same time. In the countries of Southern Europe—Spain, Italy and Portugal—business meetings can be repeatedly interrupted; one can enter and leave the meeting room to talk on the phone or in response to a request from the boss. Therefore, for example, Scandinavian businessmen may regard the behaviour of Italian or Spanish partners serving several clients at the same time as a lack of interest in cooperation with them, since they are not given undivided attention. In polychronic cultures, relationships with people are more important than schedules. For example, in Arab cultures, it is considered rude and insincere to make friends wait until the phone conversation ends.

In these cultures, time is flexible and fluid, it cannot be controlled, lost or managed. Therefore, all-time goals are approximate due to the elasticity of time. Here they often say “We’ll meet in the morning” without indicating the time. Patience and the ability to wait are critical for personnel management, work and successful negotiations in the Middle East. Meetings are scheduled on short notice, can be repeatedly rescheduled, and time is fluid.

The schedule is considered as a reference point known only to the manager, while secretaries and assistants may not even know where the boss is. More important meetings may be scheduled, and less important ones may be cancelled, or participants in different meetings may come at the same time. There are no clear deadlines for project finalisation. No one separates “working” and “personal” time. Therefore, the business can be conducted at any time of the day or night. The Jordanian, who was trained in Switzerland, was surprised that the firms closed at a certain time, much earlier than he was used to. In addition, he considered the receiving party inhospitable, deciding that they did not like him because they did not invite him over in the evenings after work. Another example is the story of an American engineer who worked in Bahrain on plant construction. The opening of the plant was delayed for 6 months, and the American was afraid to inform the local executives about it. After being notified of the delay, he was surprised by the Bahraini’s response: “We have lived without this plant for thousands of years, we can wait another 6 months or even a year. It’s not a problem”.

As a result, interaction with synchronous cultures is difficult for representatives of monochronic cultures because of their non-punctuality. People from Southern Europe may be a little late for the meeting. This is even more salient in Latin America, where people are usually late for business meetings and it is even considered ill-mannered to come to dinner at exactly the time specified in the invitation.

Performing tasks in polychronic cultures are usually associated with establishing close ties, rather than abstract plans, and companies in such countries postpone making immediate profits for the sake of long-term benefits.

The Achieved status/Ascribed status parameter characterises how position and power are achieved in society. In many cultures, a person's status is determined by belonging to a certain group mainly based on origin, as well as age, caste, race, nationality, etc.

In almost all cultures there is social stratification. People's belonging to the stratum is usually determined by the position of their parents. Those born in the stratum that is closer to the top of the social hierarchy, as a rule, have better chances in terms of education, work, etc., than those born in the stratum closer to the base of the social pyramid. Any society is stratified, but countries differ both in the degree of mobility between strata and the importance attached to belonging to a certain stratum in business contacts.

The most rigid system of stratification is a caste system, a closed system where the social status is determined by the family in which a person was born, and it is difficult to pass to another caste. There are still four castes and several thousand subcastes in India. Although the caste system was officially abolished in 1949, it is still in place in rural areas and its echoes are quite clearly traced in the economic activity of the country.

In ascribed status cultures, social recognition depends much more on the social status of the family than on personal achievements and completed work. Of great importance among the factors of recognition in society are the place of education and the connections in the highest echelons of power. In such cultures, the relationship between managers of the upper-middle class and ordinary employees is characterised by mutual distrust. Planning and decision-making are usually dictatorial and paternalistic in nature. Managers do not usually consult with lower-level subordinates. Subordinates prefer not to take the initiative and perform tasks in strict accordance with the managers' instructions. Such a structure exists in many Arab countries, where respect for superiors is encouraged.

Belonging to a group is not limited to the origin, and may include differences in gender, age group, etc. In China and India, there is a clear preference for men in the business sphere. Even in countries with a high proportion of women among the employed, there are strong differences in the types of work that are considered "female" or "male". In Japan, the proportion of women holding administrative or managerial positions is much lower than in the USA, although the situation is changing. Even in Saudi Arabia, women are currently working in such positions as employees in the hotel administration.

In Eastern countries, a person's status also depends on age, which is considered a sign of wisdom. In Japan, age comes to the fore when appointing to positions or raising salaries, while personal results play a secondary role. In other countries, such as the USA, on the contrary, young people have advantages.

In cultures where achievements are valued, status is based on people's own merits, while origin, gender and age are not crucial. The class system in these countries is "softer", people can go over to other classes. Throughout his life, a native of the

working class can gradually move into the upper class. This orientation is typical for many Western countries.

In cultures with achieved status, the power distance is less pronounced than in the opposite type of culture. Here, managers do not have a natural right to power and privileges and are more regarded as consultants rather than bosses. Companies in such countries are characterised by a more horizontal structure, relatively open communication and a desire to share information. Most decisions are made by consensus. The orientation towards equality in Europe is most pronounced in the Netherlands and the Scandinavian countries.

At the same time, in most Western European countries, the distance between managers and subordinates is very significant, the position plays a significant role and everyone is aware of his position. All important decisions are made by the top management, then go down with detailed explanations. This orientation is expressed in German-speaking countries (Germany, Switzerland and Austria), and to a lesser extent in Spain, Greece, Portugal, Italy and France.

In recent years, there has been a shift towards more democratic management of companies, especially MNEs due to the spread of the Internet and international management practices in the world. But, as a rule, Western cultures are characterised by a high degree of individualism and low power distance. Latin American and Asian countries are characterised by collectivism and a high degree of power distance.

Other classifications include other parameters of business cultures. The criteria can be the attitude to material benefits and remuneration, free time, the degree of risk avoidance, receiving and processing information, the environment, and many others.

5 Transformation of Business Cultures by Globalisation

Many researchers believe that cultural differences are subject to change, but there is no consensus on the direction of this transformation and if the differences between business cultures are weakening or strengthening.

The proponents of the theory of cultural convergence believe that the development of technology and the globalisation processes eliminate cultural differences. It is argued by the accelerated development of international trade, transport, tourism and communications, especially the Internet, labour migration and the spread of global goods that are sold around the world almost unchanged.

The adherents to the theory of the divergence of cultures believe that countries will retain national values in the future, and these differences will only increase over time. S.P. Huntington argued that differences between cultures in the world are growing, and Western civilisation is increasingly giving way to non-Western civilisations (Huntington 1996). According to Trompenaars and Hampden-Turner (2000) even global products are adapted to local culture. In addition, the sale of unified goods does not mean the harmonisation of cultures and civilisations.

In reality, globalisation affects business cultures in two ways, contributing to the erasure of external features and, to some extent, strengthening deeper differences.

The expansion of ties between countries, the creation of global markets and the development of global corporations whose products are sold in many countries, at first glance, create conditions for cultural convergence. All over the world, people wear similar clothes, eat hamburgers, drink Coca-Cola, listen to the same music, use the Internet, and companies use identical equipment, which makes it necessary to unify the operating practices.

The convergence of cultures also concerns society, where changes have also been observed since the second half of the twentieth century. In the 1960s, attitudes towards the role of women and marriage changed significantly in the USA. Back at the beginning of the decade, the idea that women could hold key positions in companies seemed unacceptable, now it has become a reality.

The value systems of many rapidly developing countries are also undergoing changes, which relate, in particular, to the movement from traditional collectivism to individualism. Many scientists believe that the Japanese culture is becoming less collectivist, and the behaviour of a new generation of Japanese employees is closer to that of Western cultures. Employees do not consider work in a company to be the main goal of life, they are more mobile and ready to change jobs if they get a better offer. The new generation of Chinese managers is less committed to Confucianism than the previous generation. These issues affect many aspects of companies' activities, primarily MNEs, and they should be taken into account when choosing a strategy and activities in other countries.

Cultures also change with the increasing incomes of people under the influence of progress. The acceleration of urbanisation and the improvement of the quality and accessibility of education decreases the importance of traditional values, even for poor rural societies. For example, changes in values from collectivism to individualism are associated with economic progress. The countries that have reached a certain level of well-being, do not need collective structures to support citizens so much, and the expansion of economic freedoms in more developed economies increases the opportunities for the expression of individualism.

More detailed studies have shown that other aspects of business cultures do not change so significantly, despite economic development. The consumption of universal goods does not necessarily change cultural elements such as the way of communication, the approach to problem-solving and motivation. For example, in China, where modern products are actively used, the business culture has largely been preserved. That is, many cultures are oriented towards modernisation, but not "westernisation", they strive to preserve religious and ethnic heritage, which is especially true of Arab countries.

The convergence of cultures is also hampered by nationalism. Nationalist movements such as Islamic fundamentalism and separatism are on the rise all over the world. Special attention to nation-specific features and emphasis on uniqueness becomes a way of preserving national identity.

6 Conclusions

1. The expansion of companies' activities in international markets makes it important to understand the business cultures of different countries. Awareness and use of knowledge about the differences in business cultures of different countries can contribute to increasing the competitive advantages of companies as a result of competent strategy formulation, success of the negotiation process, and trade and investment operations.
2. Religious, historical and linguistic peculiarities have become the main factors in the formation of business cultures, and they have largely determined the differences in the values of companies in different countries.
3. Among the classifications of business cultures, the Trompenaars-Hampden-Turner system is highlighted. It has become one of the most widely used models in the practical work of business. The predominance of one of a pair of values in the culture parameter represents the opportunities and risks that must be taken into account in international business operations.
4. The most profound differences in almost all basic parameters of values exist between Western and Eastern business cultures. In Western cultures, unlike Eastern ones, universalism, individualism, neutrality, specificity, sequential time and achieved status tend to dominate. At the same time, cultural differences are also noted within the framework of European culture. The countries of Southern Europe differ in many ways from the Northern countries, although these differences are not as pronounced as in the case of Eastern cultures.
5. The expansion of doing business at the global level contributes to some convergence of cultures in some parameters. At the same time, significant cultural differences continue to persist, which must be taken into account in international business.

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