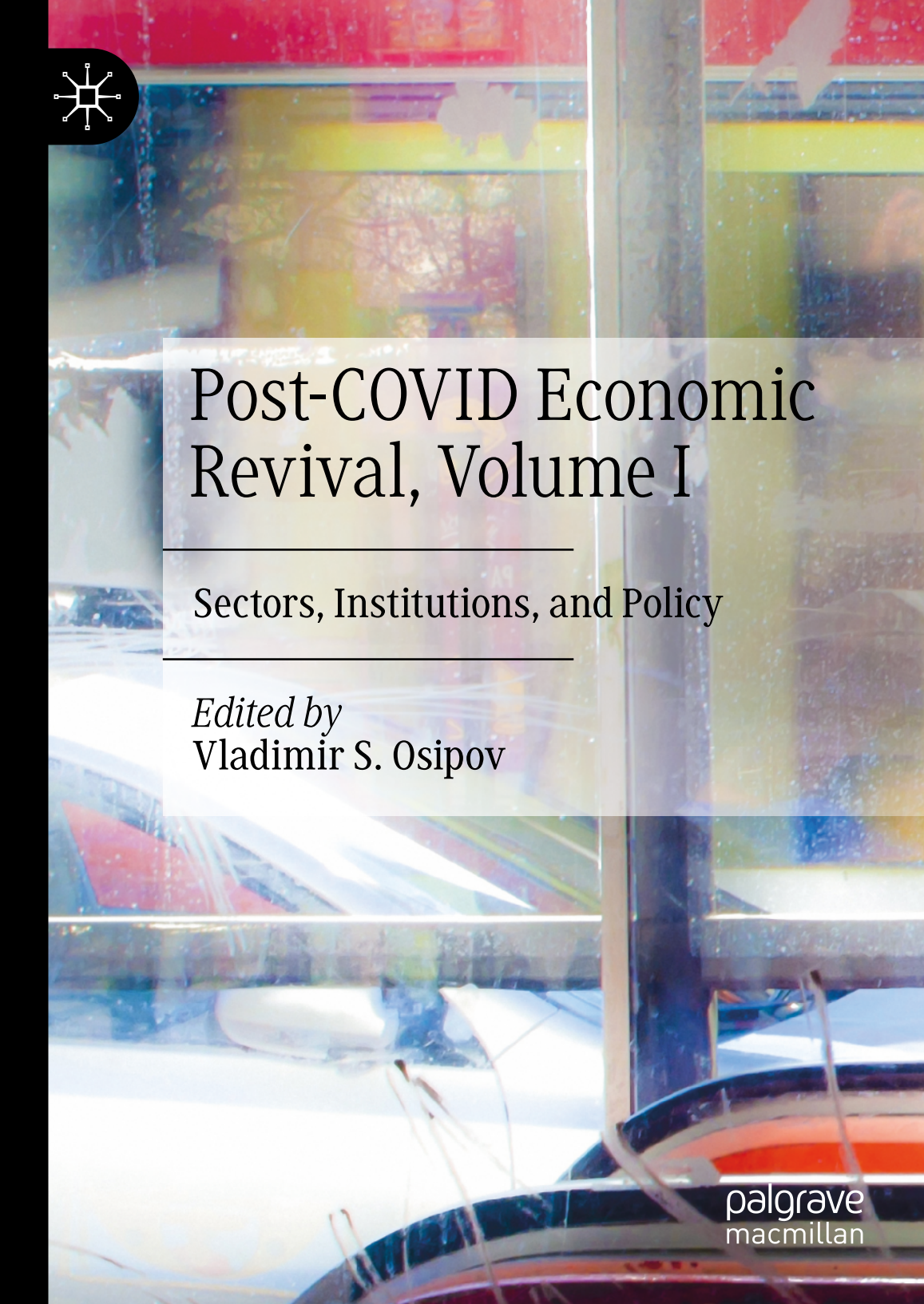

Post-COVID Economic Revival, Volume I

Sectors, Institutions, and Policy

Edited by
Vladimir S. Osipov

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Preface

This two-volume project is the result of research carried out by scientists from many countries of the world: Austria, China, Croatia, Hungary, Kazakhstan, Poland, Russia, Slovakia, Spain, Turkey, and UK. We pursued the goal not only to analyze the economic consequences of the coronavirus crisis, but also to highlight the trends and prospects of Post-COVID development in different countries and sectors of the economy. It was important for us to assess the prospects for overcoming the coronavirus crisis in several dimensions: the behavior of the state, the situation in the financial sector, sectors of the economy, and the social dimension (labor market, health care, life insurance, culture). The project consists of two volumes, and each consists of two parts. First part of the first volume is devoted to the problems of state behavior during the coronavirus crisis and the post-mortem period. Here we examined several aspects, the digitalization of the economy, the development of public administration, institutional changes at the level of some countries, regions, and the structure of the economy. Special attention is paid to risk management both in public administration and in the corporate sector. Second part consists of number of chapters in which considered the prospects for the development of the financial sector, including investments, insurance, FinTech and digitalization, crypto-assets. The last chapter of the volume has its own conclusion in which prospects of Post-COVID Statehood are described.

The second volume of our project consists of chapters about revival in such sectors of economy as structural changes, technologies, circularity and waste management, aircraft manufacture, electricity, urban mobility and house construction, real estate, transport, automobile industry, and tourism. So the last part of the second volume is devoted to development in social sector. There are perspectives of labor market, life insurance, healthcare and medical services, and culture in Post-COVID age in this part. The last chapter has a role of conclusion and is devoted to the problem of judgment and human rights protection at the COVID and Post-COVID periods.

We asset this project as a part of great discussion about paths, opportunities, risks, and possible scenarios of Post-COVID economic revival, which is the most important problem of nowadays World.

Moscow, Russia Vladimir S. Osipov

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Prof., Dr. Vladimir S. Osipov as Editor would like to thank Moscow State Institute of International Relations (MGIMO University), Moscow Russia, Rector of MGIMO University academician Anatoly V. Torkunov, Vice-Rector of MGIMO University Dr. Andrey A.Baykov, Prof. Dr. Petr I. Kasatkin, Prof. Dr. Lilia K. Raitskaya, Prof. Dr. Rustem T. Yuldashev, Prof. Dr. Artem I. Krivtsov.

The final book is the result of the very fruitful cooperation with editorial team and in particular with Project Coordinator from Springer Nature Ms. Hemapriya Eswanth and Commissioning Editor from Palgrave Macmillan Ms. Ruth Jenner: Without their impeccable managerial skills, support and advices the book could not have been completed.

Editor would like to say his special thanks to Mr. Nikolas Hyder and Mr. Michail Matveev for translating and proofreading the manuscript.

Finally, Editor would like to thank Prof. Dr. Alexey G. Zeldner as teacher, tutor, supporter, most intelligent adviser, and my best friend.

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CHAPTER 1

Main Threats of the Post-COVID Economy and Statehood

Vladimir S. Osipov

One can criticize or even deny globalization as a world process, but it must be admitted that it has taken place, it has been realized. Education, science, culture, labor, and capital, R&D and trade have become globalized. As it turned out, perhaps unnoticed by the majority of people in the world, the epidemic process was globalized, and the pandemic nature of the spread of viral diseases that threaten human existence was also globalized.

Globalization has made the speed of the epidemic process staggering. The spread of viruses now takes a matter of days. As Academician Cherkassky (2008) noted, the global epidemic process means the potential for the spread of an infectious disease between countries and is characterized by the presence of prerequisites and precursors to the occurrence of this phenomenon. As infection arises with quickly spread across the planet, and at the moment when a person manages to find an effective vaccine, it mutates into a new form. The domino effect in this case is

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fraught with the most dire consequences for humanity. McCarthy (2019) wrote pretty well about this when he showed how humanity is trying to outrun epidemics with antibiotics.

Now, after the fact, we can say that the states needed, following the example of China, to urgently isolate infected citizens, which would ensure not such a rapid increase in the incidence of coronavirus, and also, again following the example of China, conduct mass testing of the population for the presence of the virus. The likelihood is high that these measures would not entail the need to introduce strong restrictive quarantine measures and lockdowns.

The uniqueness of the situation of the post-COVID crisis lies in the fact that the new reality has a number of uncertainties, which together do not allow to clearly define the contours of economic relations and statehood. On the opinion of the IMF's Managing Director K.Georgieva we have entered a highly indebted pandemic. < … > For obvious reasons, this level has increased since the beginning of the pandemic. < … > Incomes have decreased, while expenses have increased. Today, the global public debt is approaching 100% of world GDP. The world cost of the coronavirus pandemic in 2020 are over $ 28 trillion. And in 2021, this sum will undoubtedly only grow (IMF, 2021).

There are several scenarios can be formulated, including optimistic, pessimistic, and more or less realistic.

So, on the path of a failure in the fight against COVID-19, including due to its highly probable mutation into a new, even more deadly virus, a pessimistic scenario looks probably when most of humanity will cease to exist, and the world will enter the new Middle Ages. This scenario is based on the experience of the era of plague or "black death" in the period 1346–1353, which, according to various estimates, carried away from 30 to 60% of the population of Europe, the most populated continent of that time (Thacker, 2005). In 1347–1351, a plague epidemic swept the cities of southern Italy, and almost immediately the city authorities decided not to allow infected citizens into the cities, and to evict those infected inside the city outside of its borders. Ships arriving at ports had to withstand quarantine (Carmichael, 1986, 1998). As we can see, there are quite a few differences compared to the COVID-19 pandemic.

Slack (1991) notes that the London authorities behaved very differently in 1665, when a plague struck the city and killed a total of about 15% of the inhabitants. So, Slack says that the authorities forcibly isolated families where the plague was discovered by putting up guards. Goods

and arriving people were strictly checked. Poor knowledge of the ways of spreading the plague helped the latter to "capture" the city. As a result, the residents of the city acted on their own—"they fled the city as far as possible" (Porter, 1997; Slack, 1991). Another important discovery belongs to the Italian physician Gentile da Foligno discovered in 1348 that plague is transmitted best from person to person through close contact, that is, by airborne droplets through communication (Henderson, 1992).

It is interesting that Italy could not repeat its successes of the past in 2020, but China acted exactly like Italian cities in the XIV century—they blocked the roads leading to the epicenter of the pandemic, organized total disinfection, and lockdown. The Italians continued to live the same life as before the COVID-19, which led to a massive pandemic in the country, and there was a lack of not only medicines or places in hospital wards, but even medical masks and gloves. The Italian government and society went through several stages of perception of the epidemic, the first of which was the stage of denial (anosognosic). G. Conte and his government introduced quarantine restrictions not only gradually, but initially only in the most affected northern and central regions of the country (Maslova & Savino, 2020). At the first stage, the Italian authorities demonstrated a direct path to a pessimistic scenario of the development of events. On the contrary, the Chinese authorities were able to quickly extinguish the focus of infection at the first stage.

According to the latest WHO data, in the United States, the number of COVID-19 cases has reached almost 30 million, with 538,244 deaths. As of March 19, 2021, the number of people who died in Europe from the effects of the coronavirus exceeded 1 million. The European region of 51 countries accounts for about 35.5% of all coronavirus deaths and 30.5% of all cases worldwide. This region includes the UK and the 27 member states of the European Union.[1] It should be noted that some countries are already facing the third wave of coronavirus.

A repetition of the cycle of a new population of the planet according to the medieval European model will require a revival of sciences, technologies, skills, and abilities that are naturally lost as a result of the extinction of huge masses of people. The new Middle Ages as a pessimistic scenario can be characterized as a combination of barbaric features (struggle for

[1] Source: World Health Organization. https://www.who.int/ru/news/item.

survival) with a point concentration of high-tech megacities, in which the pandemic will be defeated, but in which only the super-rich can live. Such megacities will strong restrict penetration into their territories and, in fact, will cease to be enclaves of life on the planet. Social upheavals are hardly possible here, since there will be no citizens dissatisfied with the state of affairs. For nowadays the World plunges into third wave of pandemic. Due to vaccination effectiveness this wave can be weaker than the first and the second, but there are deficit of vaccines in some countries. Vaccination rates are critical today to reduce possible horrible consequences of the third wave.

The optimistic scenario envisages victory over COVID either by vaccination, or by herd immunity, or by most likely combining of them. The revival of the economy and statehood is likely to be captured by the rut effect when the restoration follows previously tested recovery recipes. Uncertainty in this scenario concerns the digitalization of society, since it can make adjustments to the recovery process in such a way that the labor factor becomes less significant than the capital factor (due to the robotization of jobs), then the question of saving people from a pandemic may cease to be of primary importance for the state, because healthy but unemployed citizens are a source of social upheaval. The clash of state interests in maintaining social stability with the interests of saving people from a pandemic looks like the most dangerous threat to the optimistic scenario.

A realistic scenario can be realized based on the search for a fragile balance of interests of manufacturers who robotic their production, the unemployed, but healthy and well-to-do citizens and the state, which seeks to prevent social upheavals or the destruction of the "state-business-society" triangle, as the role of society is reduced in the regulation of public relations, the state will also lead to an end, since business, obviously, will win in this struggle at the expense of Internet platforms.

Any way humanity must understand that its survival depends on cooperation and integration of all people for fighting the pandemic of COVID-19 and future others. The presence of three scenarios makes it possible to identify general patterns of human development in the near future, as well as the risks that will accompany the state, business, and society in the post-COVID period of economic revival.

Anyway, two threats remain on the agenda of either scenario:

1. The need for global cooperation to develop herd immunity. The threat here is that global inconsistencies and contradictions prevent the development of herd immunity to COVID-19. Time is the most limited resource here, since the speed of the development of herd immunity will contribute to the early victory over the pandemic, and the virus itself will not be able to mutate if the population of the whole world can quickly reconcile all political, economic, territorial, religious, etc. contradictions and get herd immunity. The main idea is that the virus forces humanity to forget their grievances, disputes, claims, and unite for their own salvation. In our opinion, the virus is a continuation of the global threats that humanity has been experiencing over the past 100–120 years, which should include the I and II World wars, atomic accidents, environmental disasters, and global climate change. Humanity must think about its own rescue, and this can only be achieved by ending conflicts and uniting all forces to save the planet and humanity.
2. The need for measures to reduce the likelihood of social upheavals. A pandemic, falling incomes, unemployment, a sharp increase in inequality and the distribution of all people between the very rich and the very poor are the basis for the destruction of the global order and a platform for concerted action to develop herd immunity. We welcome all measures taken by all governments around the world to support falling incomes of the population. All programs are undoubtedly supported, but they are not enough to reduce the risk of social upheaval that can delay the possibility of bringing people around the world together to resolve all conflicts and disputes and obtain herd immunity to get rid of COVID-19.

We acknowledge several books that preceded this research and would like to thank the authors for their discussion on the problems of post-COVID economic revival.

First book is "Internet of Things and Sensor Network for COVID-19" (Udgata & Suryadevara, 2021). We are value this book as very important and timely. The book examines various solutions under the IoT framework at COVID-19 period. Authors argue potential applications of sensor technologies as part of IoT to deal with the issues arising from COVID-19. This book considers technological questions of IoT and its using to fight COVID-19. The advances in IoT frameworks and sensor technologies together with AI are invaluable in the context of pandemic. This

book presents the advances in sensor technologies, IoT frameworks at national and international levels and explores how these technologies are being used to deal with the issues arising from COVID. Our book has the opposite view, as we consider the toolkit of economic and institutional policies that can lead to economic revival after the end of pandemic.

Pandemics, Publics, and Politics: Staging Responses to Public Health Crises (Bjørkdahl & Carlsen, 2019) is also very important and useful book for practitioners at first. There are problems of cooperation of policy, society, and pandemic are described in the book. We value this work as important source for researchers in medical care and sociology of health and medicine, as well as researchers within public health studies. Narrow and sectorial sight to the problem of pandemic plays positive role for researchers in such areas, but the information is very poor for researchers in economics, risks, law, and international relations. The main chapter of the book, that we value specially high is "Global Health Governance and Pandemics: Uncertainty and Institutional Decision-Making". There are good and productive decisions for healthcare systems, but it must be conjuncted with state budget possibilities. And this problem wider than just after pandemic topic, or financial problem. There are problems of economic structure, behavior of economic actors and public authority etc. National and international experiences in our book will enrich fact materials and decisions for economic revival.

And the third book is "Charting the Next Pandemic: Modeling Infectious Disease Spreading in the Data Science Age" (Pastore y Piontti et al., 2019). This work introduces the most recent framework to contagion process modeling. Of course we must know the future behavior of pandemic and coronavirus. Modeling this process plays magnificent role for understanding our future. But exactly here we see, that public policy has to be active, but not passive with just waiting the continuous of pandemic. Active public policy includes institutional instruments and sectorial receipts to help economic actors to achieve the rise of activities. Any way computational and complex systems modeling of the global spreading of infectious diseases are very important and we value high this work.

This book has been published in two volumes, covering each of the above problems. The first volume is devoted to the study of a new post-COVID reality, risks, and threats, as well as opportunities and scenarios for economic revival. There is attention paid to the problems of the behavior of various states in the pandemic and post-pandemic periods, the

legal aspects of the regulation of economic activity during these periods, as well as the general problems of business and society in the post-COVID economic revival. In the second part of the first volume, the problems of the development of the financial sector of the economy in the post-COVID period are considered. In more detail, the two volumes are disclosed as a collection of the following chapters.

Chapter 2, "Public Administration in Post-COVID Economy" is revealed through two fundamental aspects. The first is the evolutionary aspect, defined here as a concept of "the co-evolution of technological progress and public administration's historical modes". The second aspect is the dialectic one. The post-COVID period defined the clashes of the future, which cannot be addressed within the framework of traditional mind-sets—budget increases, costs cuts, or free-market theory. After the hype and hope for the might of corporates and their innovative power, we finally learned the practical lesson that constant disruptiveness does not serve as the best solution for sustainability—the quality the world needs most now. Therefore, the strategic priorities of public administrations matter again, and will determine the vector of strategies in private and non-profit sectors throughout the twenty-first century.

Chapter 3, "Digitalization of Post-COVID economy" evaluates new dimension of digitalization of the economy in Post- COVID era. Digitalization of economy is an objective process based on the technological progress. Digitization of the economy served as a survival tool during the COVID pandemic and demonstrated a considerable dynamics in all aspects from online customer service to remote work, as well supply chain reinvention and growing use of artificial intelligence (AI) and machine learning to improve operations. The main goal of the research is to investigate whether these new tendencies will remain and further develop in the post-COVID times, as well to define paths of the further digitalization of the economy. The findings show that digitalization of economy has direct and indirect impact, changing economic agents, our perception of the world around us and our way of interacting with it.

Chapter 4, "Impact of Regional Culture on Overcoming the Coronavirus Pandemic" consists of generalization and author's development of approaches to the trends in the transformation of national organizational cultures that have arisen in the course of the development of the COVID-19 pandemic. The concept of differentiation of organizational cultures in different countries in crisis conditions is taken as a basis and developed. Positions related to power distance, uncertainty avoidance, long-term

orientation, collectivism vs. individualism. COVID-19 has had a significant impact on the mental health of society due to a number of social changes that different countries have never experienced before, such as quarantine, lockdown and social distancing, wearing masks and personal hygiene. An important aspect for the authors was the need to determine why the main Coronavirus fighting methods fail to work or work inefficiently. The authors paid special attention to the problem of working with an approach to overcoming citizens' disinformation in the fight against a pandemic as the development of such a characteristic of organizational culture as uncertainty avoidance. The authors partially managed to identify those new phenomena that are associated with mutual borrowing in the cultures of different countries of foreign experience, despite political differences.

Chapter 5, "Legal Fundamentals for Institutional Changes to Revive the Economy after a Pandemic". Issues related to changes in the Russian legal and tax system are thoroughly studied, specifically: the actual cancellation of flat scale of taxation, payment of taxes on fixed profits of controlled foreign companies, the abolition of preferential rates for withholding tax provided for by a number of treaties etc. These aspects are examined through the prism to, on the one hand, support the people and businesses and, on the other hand, get maximum taxes for the budget, since fulfillment of social obligations during a pandemic requires significant financial resources. While preparing the work, not only has the legal framework been analyzed, but also scientific papers, materials of international organizations, government bodies, expert comments, etc. As a result of the study, the authors come to the following conclusions: (1) to support and restore the economy, many areas of law including bankruptcy legislation, labor and tax laws, legislation on legal liability etc. have been substantially modified; (2) the tax sphere, in which there have been trends towards strengthening the regulatory function of taxes, tightening tax control over super-wealthy individuals, promoting further deoffshorization of the Russian economy, providing tax benefits to taxpayers in order to prevent their massive bankruptcy, has undergone the most significant institutional changes.

Chapter 6, "Interaction of the State and Business at the Post-COVID Period" examines scenarios of private investors financial losses and arising from public–private partnership projects during the COVID-19 pandemic, and also analyzes the effectiveness of state support measures at the post-COVID period. The author analyses scenarios of possible

losses of private partners depending on the possible measures aimed at combating coronavirus infection, the timing of restrictive measures, as well as coverage on a territorial basis. The chapter assesses the effectiveness of measures already taken to support the state both in relation to participants in infrastructure projects and in relation to socially significant sectors of the economy. The relevance of the topic of interaction between the state and business in the post-COVID period in the Russian Federation is due only to economic realities, but also to the fact that COVID-19 revealed "deep-embedded vulnerabilities" in infrastructure not only in the public health system, but also in other infrastructure areas of the economy.

Chapter 7, "Digital Economy Issues and International Legal Protection of the Environment in Relation to COVID-19" attempts to show that new types of economy, such as the digital economy and the closed-loop economy, have significant environmental components within their legal regulation. Sustainable development is actually development related to the preservation of the biosphere and natural capital. However, in real life, these aspects are often overlooked. The sustainable development concept has spawn novel types of economics. The 2008–2009 crises gave growth to the green economy that was followed by digital and circular economics in the fourth industrial revolution. All of them contain ecological aspects and those of resource use. The introduction of business services models in which the use of and selling function of goods instead of goods themselves was viewed as a possible factor of circular economics. The circular economy paradigm attracts more attention by scientists and practitioners as a means to enhance sustainability.

Chapter 8, "Comparative Analysis of Transformation in Structure of Post-Soviet Country's Post-COVID Economy" includes the post-Soviet countries economic analysis during the transition years. It has repeatedly experienced stresses under the influence of financial crises, some of them being echoes of global crises, others of an internal nature. But at the end of 2019 a crisis emerged that the global economy had not yet faced, as it was caused by biological factors. Consequently, the economic systems of the countries of the world were not prepared for the confrontation, whose consequence was lockdowns, the closure of service enterprises and restrictions on the movement of the population. Another important factor aggravating the consequences of the coronavirus crisis is that the world community is in the process of transition towards a digital economy, meaning that significant resources were diverted to digitization, did not

allowing us to respond quickly to the challenges of the pandemic. In relation to the above, we believe that the study of the magnitude of the transformation of the economy of the post-Soviet countries under the influence of the COVID-19 is an urgent task. Hence the aim of the study, which is to quantify the negative and positive impacts of the COVID-19 on the transformation of the economic structure of post-Soviet countries. Within the framework of the selected objective, the specific task of considering the issue of the possible acceleration of the transition to the digital economy under the influence of the coronavirus crisis was resolved. To achieve this goal, general scientific methods such as comparison, historical analysis, and synthesis were used. The main results of this research include the formulation of methodological approaches for the statistical study of the impact of the COVID-19 on changes in the proportions between types of economic activity in the economies of post-Soviet countries, as well as a quantitative evaluation of the "depth" of the recession under the influence of the coronavirus crisis in some of the above-mentioned countries. As a direction for further research, it is possible to point out the identification and study of the country-specific features of the way out of the COVID-19 crisis in the area of post-Soviet countries.

Chapter 9, "Post-COVID Period in Slovakia: Measures and Results" describes the situation of post-COVID situation in Slovakian economy. Slovak economy belongs to small economies with a dangerously high degree of openness. This means that economic growth is highly dependent on external factors. On the one hand, this fact can have a positive effect when the demand in the markets of the most important trading partners begins to increase. However, it is highly vulnerable in the event of negative changes. The Slovak Republic, as a member state of the European Union, enjoys all its advantages. In connection with the recovery of the economies of the Member States of the European Union, it will use funds under the Recovery Plan. The government of the Slovak Republic wants to use the post-COVID era to eliminate many structural deficiencies, the sharpness of which manifested itself especially in 2020 and 2021, during the pandemic. The Slovak Republic wants to use the funds it receives from the European Union within the framework of five priorities, namely for the development of the green economy, digital society, health care development, support for education, science and innovation and public administration reform, justice, and the fight against corruption.

Chapter 10, "COVID crisis as an accelerator for the penetration of digital technologies in the economy" examines the process of penetration of digital technologies into the economy. This process has greatly accelerated due to the coronavirus pandemic and the need to establish remote interaction between consumers and suppliers of goods and services. Changes in the architecture of many markets under the influence of digital technologies were expected, but the pandemic has dramatically accelerated this process, in connection with which we can talk about the positive side of the coronacrisis from the standpoint of the structure of the economy.

Chapter 11, "ESG Risks and Opportunities in the Post-COVID period" describes the key factors of investment decision process during the last decade—the increased attention to ESG factors by companies and investors. The authors note that economic disruption caused by the pandemic may have intensified the progress in working towards UN Sustainable Development Goals by international organizations, companies and many other environment activists.

In this paper authors investigate the consequences of COVID-19 pandemic on UN Sustainable Development Goals and aspects of future ESG application by companies and investors. Recent studies demonstrate that ESG investment strategy has seen better than the market performance in good times and also provided more stability to the portfolio during times of economy disruption. The increased focus on ESG by regulators, companies and investors is supporting the development of ESG reporting framework. The authors have come to the conclusion that COVID-19 pandemic has accelerated ESG agenda for economies and societies, suggested ESG trends and developed recommendations for boards and companies to keep up with them.

Chapter 12, "Trust Issues and Value Co-Creation in the Post-COVID Period" is about a trust as a factor influencing financial markets during a pandemic. The aim of the study is to assess the relationship between the trust and transformation of traditional financial institutions during a pandemic and post-COVID period. The physical breakdown of social communications has led to a new Human-Centered Design (HCD) value co-creation format and a shift towards more customized products, as evidenced by the rise in popularity of robo-advising.

Chapter 13, "Post-COVID Economic Revival: Financial Aspects of Reform" is devoted to the supportive fiscal and monetary measures for economies during the period of the COVID-19 pandemic. The purpose

of the article is to consider the system of a policy for effective support for economic growth. The chapter indicates that the main stages of the COVID-19 pandemic should be clearly correlated with support measures, which may differ for the real economy and for the financial sector. As a result, all the structural elements of economic policy should be coordinated, and financial injections should be targeted.

Chapter 14, "U.S. Insurance Market in Response to COVID-19" explores the impact of the coronavirus pandemic on the U.S. insurance sector and offers a critical review of the responsive measures suggested by the market players and regulation authorities in order to establish well-balanced insurance systems that could protect businesses from future pandemics and restore confidence in the stability of the American economy. The study is focused on business interruption and cyber insurance segments bearing significant losses due to the nationwide economic shutdown of millions of businesses simultaneously and the prodigious increase in remote working. On conducting quantitative and quantitative analyses and applying web search volume data, it is revealed that private underwriters do not have the infrastructure and capacity to withstand the volume of the incurred and potential insurance losses and demand for proper government support. In-depth studies of the initiatives elaborated by insurers, legislators, and supervision authorities illustrate that the probability of adopting federal-backed insurance programs highly depends on the cost-effectiveness of the project for the government as well as enough political pressure to move the issue to the forefront of public consciousness.

Chapter 15, "New technologies in the financial market after the end of the pandemic: extrapolation or innovation?" describes the author's automated algorithm for the formation of mental maps is presented in relation to financial markets, so as to identify the main directions that the financial industry's innovative developments will take as a whole. The use of this algorithm made it possible to describe the properties of the content-thematic component of the innovative development of the financial industry, the clustering of which made it possible to quantify the parameter of the selected properties' severity in the array of natural digital information. The formation of this, on the basis of the indicated quantification parameter of the time series, made it possible to study the properties of its relationship with a set of financial variables by means of regression analysis. This study's significance will be felt by its generation of an automated algorithm for the formation of mental maps, as well as

of a method for the quantitative interpretation of the presence of identified properties in an array of natural digital information; the significance is both practical and theoretical in nature. The relationship between the severity of the topic of the financial industry's innovative development across an array of natural digital information and a set of certain financial variables is described using a whole set of regression models.

Chapter 16, "European Investments Opportunities after COVID-19" is devoted to the features of the competitive struggle for investments (FDI) of European industry enterprises in the terms of rapid technology and production changes, market transformations after COVID-19. The purpose of the article is to consider the trends in the leadership European production developed and attractiveness of investments by European production units.

Chapter 17, "Analysis and Suggestions on Financial Crisis Management Behavior during COVID-19 Pandemic" offers the sight of Chinese scientists on COVID-19 pandemic and the government, which bends its efforts for preventing the spread of the disease, eliminating the impact of the epidemic as soon as possible, and restoring social normality. Specific measures are concentrated in the areas such as patients treatment, road control, and material deployment, all of which are directed towards immediate containment of the epidemic. With the development of the epidemic, secondary risks rise in economy, finance, education, and human resources, and they tend to cause adverse impact on social and economic life. Authors note that the financial industry should actively adopt management measures and commit crisis governance to prevent the finance from destruction. Through actively discharging its social responsibility, the financial crisis management can serve to minimize the impact of the epidemic on real economy and capital markets.

Chapter 18, "Financial Crisis 2020: Problems and Elements of Forecasting" offers the unique sight on financial market' development at post-COVID period. In this case there is a problematic situation associated with the uncertainty of predicting the growth of global financial markets. In the framework of this chapter, the task is to conduct a financial analysis of the impact of the COVID-19 pandemic on the world economy predicting different scenarios for the formation of the global financial market growth of financial indicators, depending on external indicators. The primary goal is to control the pandemic by mitigating the economic damage to populations, organizations and states. Thus, in the political arena, too, the consequences of a pandemic must already be predicted.

Chapter 19, "FinTech in the Post-COVID Period" deals with problems of financial technologies and its using at the Post-COVID Age. Technological innovations that take into account signals about consumer needs are opening up new opportunities for the financial market. This study showed that the COVID-19 pandemic has had a positive impact on the development of FinTech companies. However, their adaptation to post-COVID conditions may face certain difficulties due to a lack of understanding of the timing of economic recovery from the shock, regulatory uncertainty, financing problems, and, as a consequence, the ability to develop and provide new products and services.

Within the framework of this work, the following hypothesis was formulated—the success of FinTech before and in the context of the pandemic determines the viability of this direction. The different levels of "economic immunity" financial institutions have to crisis phenomena will determine the speed of transformation from the modern global economy into a digital one.

This study concludes that the new reality businesses are experiencing regarding technological cooperation, in the context of COVID-19, is likely to accelerate the development of interactions for the provision of financial services, with the potential to expand access to markets, the range of products/services offered, and convenience for consumers. Thus, FinTech has great development prospects in the post-COVID world, provided that the above aspects are addressed.

Chapter 20, "Change in Demand on the Insurance Market in the Post-COVID Period" substantiates the insurance market development, the insurance products needed by the population and insurance corporate programs, changes in demand in the Russian insurance market are analyzed depending on the quality of the market and types of insurance under pandemic, as well as taking into account the social programs and support measures; the need to maintain a stable demand for insurance on the part of insurers and insurance supervisory authorities is proved; proposals are formulated on promising areas for the development of insurance products.

Chapter 21, "Modernization of the Internal Control System of the Organization during the Pandemic Period" presents an option for improving the internal control system by introducing legally significant electronic document management. The main focus is on the topic of informatization of the work of the internal control system, and, as a consequence, of the accountant. The emerging digital environment for

information exchange is gradually turning not only into a large "living" reference book, but also into a strategic management tool. This diagram structures the current activities of the ICS, and also contains the proposed changes and necessary modules. This makes the schema more versatile and less time-reliant. The purpose of this article is to consider a set of issues related to the development of the theory and methods of internal control of business processes at Russian Railways enterprises, as well as to develop additions to the methodological tools that ensure the continuous and systematic work of the ICS.

Chapter 22, "Legal Regulation of Crypto-Asset Markets in the EU in the Post-COVID Period" examines the theoretical understanding and legal regulation of the European crypto-asset market in the post-COVID period, including compatibility of the proposed draft unified legal framework for the crypto-assets circulation with the legal order of the EU member states (Germany, Malta), as well as the competition between the EU legal order and the legislation of the advanced European countries (Switzerland, Liechtenstein) in the field of legalizing crypto-assets. The traced evolution of legal regulation in the field of crypto-assets circulation allows us to conclude that the EU institutions are working quite effectively and consistently to give a "pan-European response" to the challenges of digitalization, but there are some difficulties in synchronizing the created European legal framework with the interests of the EU member states and their often more advanced regulation. The results of the study of the problems of regulating crypto-assets in the European Union contribute to the development of the Russian scientific doctrine in the field of crypto-assets circulation allowing us to adjust the digital assets and digital currencies legalization model in Russia, also laying the foundation for forming supranational legal foundations that will let crypto-assets circulate in the Eurasian Economic Union.

Chapter 23, "System of Legal Means of Ensuring the Financial Security of the Russian Federation at Post-COVID period" is devoted to financial security as one of the most important components of an effective government mechanism. Financial security is based on a system of legal norms, which at various levels of legal regulation must ensure the stability of the financial system. In the course of ensuring financial security, the entire complex of means should be used, and not only the financial and legal means themselves. This should include both administrative and legal means, and criminal law means, as well as a number of other sectoral means. This is determined by the fact that only the entire arsenal of

legal means will reliably ensure financial security. The financial security of the state acquires particular importance in the post-COVID period, since many financial procedures have significantly transformed. Accordingly, new legal means are required to ensure the financial stability of the state and society.

Chapter 24, "Opportunities of Use of Option Agreements in the Post-COVID Economy:

Comparative Legal Study From Russian Law And English And American Law Prospective" is devoted to different opportunities of use of option agreements in post-COVID economy and to the principal issues which may arise in connection with structuring share deals in joint-stock companies and in limited liability companies, including merger and acquisitions (M&A), and joint ventures (JV) deals and strategic partnership agreements and other transactions in relation to real property when entering into option agreements. The author analyzes the relevant legislation, jurisprudence and doctrinal materials on the issue. Answers are consistently provided to the questions which, on the author's opinion, are the most relevant when using options in the above transactions in view of current post - COVID economy in Russia and common law countries (in particular, in the United States of America and the United Kingdom).

Chapter 25, "Risks of P2P-Lending in Russia in Response to COVID-19" covers the risks arising in the sphere of crowdlending relations, where the person attracting investments and the investor are individuals (also known as relations on mutual lending between individuals, consumer p2p-lending), that is some individuals lend to other individuals through special Internet sites, where persons attracting investments (borrowers) place their applications for obtaining financing from investors (lenders) for a specific period and at a specific interest rate. The theme of risks in the sphere of mutual lending is becoming even more relevant in the context of a pandemic situation due to the fact that many people are losing their jobs and are forced to use alternative sources of financing, and there is still no proper regulation.

Chapter 26, "Post-COVID Statehood" is the concluding part of the first volume. A study offers the dedicatedly changing role of the state and the very phenomenon of statehood during periods of a pandemic in the history of mankind. The author examines the problem of state participation in the fight against pandemics in historical terms. The conclusion is that a strong state and its active role during periods of a pandemic allows quickly cope with the virus and save lives, while liberal states with

minimal state participation experience more negative consequences of the pandemic. Quarantine measures are most effective in saving lives of citizens, even when their rights to movement, free assembly, freedom of speech, etc. are violated. The inherently dire conclusion is faced with an even more dire consequences of the pandemic in the form of more deaths.

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PART I

Post-COVID Economy: Public and Private Aims

CHAPTER 2

Public Administration in a Post-COVID Economy

Sergei G. Kamolov

Introduction

Due to the shock of the pandemic, the most affected industries have been forced to implement unemployment schemes (people who were formally employed but had been sent on unpaid vacations, experienced shortened working hours, or suffered from underemployment), and thus wages have plunged. These factors created serious challenges associated with an overall decrease in household incomes and, as a result, effective demand. The closure of the economy and the reduction in business revenue objectively led to a reduction in investment activity. The high uncertainty during the pandemic and the ongoing restrictive measures created high risks for both businesses and financial institutions. These challenges were first dealt with by public administration systems taking heavy responsibilities to provide islands of stability to societies in these turbulent times.

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Public policies in different countries during the pandemic were quite similar in their basic logic. In order to combat the spread of coronavirus infection, some industries were temporarily closed (tourism, consumer services, passenger transportation). During the period of economic shutdowns an explosion of restructured loans and deferred payments created the risks of "bad" debts and a massive chain of non-payments. For high-tech companies there were risks of jobs cuts and losses of teams with unique competencies, a lack of liquidity, a decline in sales, disrupted international cooperation, procurement of components and materials, and unpredictable changes as well as a lack of objective information for making strategic business decisions. Structural changes in consumer demand—both global and domestic—had a slowing effect on the recovery of a number of sectors (entertainment and leisure, tourism).

A set of measures is required across the world for an active employment policy and the restoration of households' incomes, as well as the revival of individual entrepreneurship and small enterprises to ensure further economic growth.

Methodology

Towards a High-Tech Public Administration Paradigm

Before outlining the mechanics of anti-crisis policies undertaken by public administrations, it must be asked in what condition—theoretically and materially—such governance systems faced the pandemic in early 2020.

The lack of inherent efficiency had led to the convergence of the public and private sectors within so-called New Public Governance concept (NPG), which created fragmentation of the public governance, but also shaped "a way to overcome the limitations of disordered market exchange and top-down planning in an increasingly complex and global world" (Jessop, 2003). Unlike twentieth-century theories of public administration, the transition to NPG did not have a strict system of guiding principles; instead it combined a broad set of the newest management concepts, including "digital governance", "platform governance", and "multilevel governance", meaning the provision that citizens and institutions have access to public services in digital form, the creation of a national data management systems, the development of e-government infrastructure, and the introduction of end-to-end platform solutions.

Some scholars define NPG as "inter-organizational relationships and process management in which trust, relational capital, and contracts serve as the primary management mechanisms, rather than an organizational form" (Osborne, 2006). NPG views the phenomenon of authority as a set of institutionally organized elements of society that are eligible to participate in decision-making at the stages of development, implementation, and control. When allocating management resources, the governments are interested in attracting various private and non-profit organizations for cooperation (Newman, 2005). This leads to another characteristic of pre-pandemic public administration. A public service is seen as a shared public good created by the public, private, and non-profit sectors (Robinson, 2015). These processes have highlighted a citizen-oriented approach in the provision of public services (Chatfield et al., 2012). In turn, citizens have become not only recipients of information, but also its main suppliers (so called "prosumerism")—a condition that would have played a crucial role when the pandemic attacked. The objectivity of the change in administrative paradigm was substantiated through the prism of the inefficiency of the previous fundamental principles of public administration. However, in modern processes, there is a clear, ongoing co-evolution of public administration and dominant information technology structures. To clarify the paradigm of changes before pandemic, such authors as Osipov (; 2020), Popova (2020), Stepnoff and Kovalchuk (2020), and Yankovskaya et al. (2021) showed the tendencies of state digitalization present during the pre-COVID age.

Results

Throughout the twenty-first century, public administration has been developing under the influence of new cross-cutting technologies: robotics and sensors; neuro-technology and artificial intelligence; distributed ledger systems; quantum technologies; wireless technologies; technologies of virtual and augmented reality. By the end of 2019, the most advanced countries had deployed major elements of intelligent interconnected cyber-physical systems to address the issues and goals of public services (smart government solutions), extensively using open and big data at the municipal, regional, national, international, and global levels. These technologies are interconnected through four layers:

- Internet of Things – a multi-level system that includes sensors and controllers installed on the nodes of an industrial facility, a means of transferring the collected data and their visualization, analytical tools for interpreting the information received;
- Internet of Services – blockchain technologies that provide the network infrastructure to support the service-oriented ecosystems (Moreno-Vozmediano et al., 2012);
- Internet of Data – data connected by a network (Fan et al., 2012);
- Internet of People – a network of people and their personal devices (Conti, 2017).

Theorists of public administration were able to elaborate and consolidate a tremendous number of concepts, yet scholars rarely explore the question of future design of governance in the technology-extensive environment. Moreover, we could not have imagined the scale and complexity of challenges the government systems would have to deal with in the face of the pandemic of the new SARS-COV-2 virus. Therefore, the formation of a "High-tech paradigm of public administration" presents the next promising evolutionary step from NPG (Kamolov, 2017).

The pre-pandemic design of public administration systems was based on three technology-related components: electronic (remote) identification of a citizen, reflection of the "once only principle" in the framework of G2C and G2B, and the deployment of government information systems which link the diversity of servers and systems through encrypted connections. On this basis, perhaps the emergence of the "G2A Model" (government-to-all) can be anticipated, which would fully articulate the idea of the modern discourse about the "state as a platform".

Before the pandemic, the priority areas regarding the digitalization of public administration functions were:

1. Optimization of procedures, improving the quality of the provision of public services, as well as ensuring the citizens' feedback.
2. Implementation of standard information technology services, the use of a unified data transmission network and data processing centre systems.
3. Use of open-code software.
4. Protection of information contained in public information systems and establishing the information security of governmental bodies.

5. Improving the quality and ensuring the availability of public information resources, especially in the form of machine-readable open data.
6. Data-centricity: constant accumulation of data of control objects and the creation of a unified meta-model of reference data.
7. Exercising control through the use of big data technologies, Internet of Things, or artificial intelligence, and the transition from control to predictive analytics and risk management.
8. Transfer of the right to make routine decisions to information systems.
9. Progress from "cross-platform" (the possibility of deploying solutions on one platform and transferring them to another) to "multi-platform" (developing solutions for several platforms at once) and "all-platform" (developing programs without reference to one or several platforms and launching software on any configuration/set of platforms).
10. Perception of a citizen as a customer and consumer of public services (client) and the continuation of building a "service model" of the state with new principles for designing services.
11. Building a "state-as-a-platform" data model and architecture that correspond to the principles of consistency, structuredness, real time, completeness, coherence (convergence) of data, interoperability, ecosystem, and anthropocentricity, as opposed to being process-oriented.
12. Transition from a waterfall approach in planning digital governance infrastructure developments (implementation period up to 2.5 years) to the Minimum Viable Product (MVP) concept of prototyping (implementation period 2–3 weeks), which requires significant adjustments to the public procurement system (Lenarduzzi & Taibi, 2016);
13. Ensuring the competitiveness of public authorities as employers in the labour market (creation of government "technology offices" capable of competing with the largest digital companies);
14. Creation of an ecosystem of government data and business services (a data highway)—working with best practices for regions, dissemination of these best practices, issues of antitrust regulation, taxation, including taxation of digital giants, cross-border data—with the creation of international systems for regulating turnover data and protection of intellectual rights.

15. Elimination of the regional “digital inequality”.

The “state-as-a-platform” has become eligible dominant concept within the broader NPG theory, along with “digital government” and “cyber-state” frameworks (CSR, 2018), leading the digital transformation—a deep reengineering of business processes aimed at significantly improving their characteristics (reduction of the execution time, elimination of sub-processes groups, output increase, cost reduction) and obtaining fundamentally new qualities and properties on the basis of digital technologies. Thus, digital transformation should ensure the maximum “human-centredness” of their results and “human-free” automated management processes and services. A citizen is minimized as a means and maximized as the purpose of the public administration.

On the applied level, the digitalization of public administration should demonstrate the tangible reduction of such properties as: transaction costs; the number of “paper” services; the number of civil servants; the total number of public and municipal information systems; and the timing of public or municipal service delivery. There are also indicators that are expected to manifest a steady growth or improvement: complete citizen satisfaction; the total number of public and municipal services; the volume of data disclosed in a machine-readable form; the marketability of the data; the share of open public information resources; and the number of users in public digital platform.

The major issue and methodological vulnerability of the pre-COVID design of public administration systems was their focus on a precise and normalized course of operations: a design for an ideal state of affairs, when everything is operating as planned. The question is, however, how often is there such a status quo in reality? A wiser administrative approach, thus, would be getting ready for unexpected, risk-related scenarios, which some countries pursued. For example, in the 2017 edition of the National Risk Register Of Civil Emergencies issued by the UK Cabinet Office, there is a picture amazingly similar to the image of COVID-19, indicating that the risk of pandemic influenza was assessed at the highest degree of impact severity, with the likelihood of this occurring within next five years rated 4 out of 5 (GOV.UK, 2017).

From the retrospective study of digital technologies in public administration, we can derive the hypothesis that public administration evolves towards high-tech industry, especially after practitioners and academics received valuable evidence of the reliability and capacities of the high-tech

public administration technologies deployed during pandemic events, and ranging from registrars of COVID-19 cases to management information systems linking budget financial assistance to businesses in exchange of tolerant corporate employment policies. According to professional statistical organizations (Eurostat, OECD and Federal State Statistic Service of the Russian Federation), public administration refers to knowledge-intensive industries, specifically to activities that provide services (Eurostat, 2021). A consensus definition of a knowledge-intensive industry would refer to a large proportion of employees with a high level of professional education amongst the total number of employees, whilst high-tech industries are defined as industries with such a level of technological development instead. The latter is defined by the relation between the value added in manufactured goods and the R&D costs (R&D costs divided by added value). The knowledge-intensive industries are defined by relating the number of employees in the organization to the number of employees in the organization with higher education.

The integration of high-tech soft and hardware systems in the public administration system to address the most complex issues (such as the COVID-19 pandemic) raises the question of rethinking the aforesaid classification. Is the transition of public administration to the class of high-tech industries possible? On the one hand, these classifications do not imply the transition of a particular industry from the knowledge-intensive to the high-tech class, since the services cannot acquire the characteristics of a manufacturing industry.

The design and development of high-tech solutions cannot take place without the direct participation of government specialists. It is impossible to ensure the creation of such solutions that would meet the strategic needs and objectives of public administration. Gartner focuses on the following dominant public administration technologies for the next decade: chatbots, digital twins, distributed ledger (Blockchain), data marketplaces (data platforms), and smart workspaces (Moore, 2019). These technologies are deployed on the infrastructure of e-government. As an example, in Russia, this category embraces over a half of the population—almost 84 million people who are registered on Public Services Portal with more than 1.8 billion authorizations made through the system. The Portal has become a single point of access to more than 2 thousand federal government and commercial portals and over 34 thousand federal, regional, and municipal e-services. These digital technologies

of public administration fully meet the criteria for high-tech products, being science-intensive, innovative, and widely deployed.

Thus, "high-tech public administration" can be defined as a set of software- and hardware-level technologies and administrative procedures that allow public administration functions to be performed using automated systems for measuring physical and socio-economic variables, adequately describing the qualitative and quantitative characteristics of society's condition using specific space–time coordinates, functioning communication channels integrated into decision support system, or a digital control centre for and strategic management of a city or region.

Another sign of the emergence of the high-tech paradigm of public administration is the massive introduction in all government bodies of the position of a Chief Digital Transformation Officer, whose capacities would include intra- and inter-departmental data circulation management; the creation of "information assets" (data sets) based on data standardization, exchange, and disclosure in accordance with applicable law; the implementation of the best practices in data management; and an assessment of the IT infrastructure quality and its impact on the availability of information assets, the elimination of barriers for the generated data flows, and the staffing and functional support of the open data management systems and measures for open data integration into a statistical reporting system (Kamolov et al., 2019).

The essence of the digitalization of public administration lays in the transition to anticipatory innovative governance, associated with the transformation of data into information, information into private knowledge, and knowledge into reusable knowledge (experience) (OECD, 2019a). Knowledge creation from the database requires experimental sites (regulatory sandboxes, pilot development platforms). Data that has service and public value (data value creation) is the data applicable in economic circulation in the form of information applications developed for citizens. The public administration system can be characterized as "data-centric" or "data-based" (Data Driven Public Sector, DDPS) (OECD, 2019b). Therefore, the fundamental principles of high-tech public administration are:

- recognition of data as a key strategic asset of the management system at the federal, regional, and municipal levels;
- legal entitlement of the "public value of data" concept;

- measurement of the impact of open data on the effectiveness of the public administration;
- barrier-free exchange and reuse of data in management and business processes;
- a data-centric approach in the architecture of public and municipal services.

The application of these principles is aimed at increasing the social value of the public administration system by strengthening the trust in government and wider household engagement in economic processes. OECD studies (2016) show that since the beginning of the twenty-first century, citizens' involvement has become a critical factor in increasing regional domestic product. It is the growth of entrepreneurial activity that has become the main driver of economic growth in Tallinn (Estonia), Santiago (Chile), and Perth (Australia). In OECD countries, 50% of the population lives in cities, and it is cities that provide 60% of the growth of new jobs and an increase in the GDP of these countries. It is also important that statistics indicate that cities create equal social opportunities: in the United States and Canada, future incomes of city dwellers are much weaker correlated with the incomes of their parents, against the background of a stronger relationship that is noted in the incomes of generations of families outside urban agglomerations. In the Netherlands, it was found that the income of children who grew up in relatively poor neighbourhoods differs from the income of children from wealthy families by only 5–6%.

Discussions

Public Administration Plans of Action for Post-COVID Future

As the pandemic was spreading, those countries with developed biotechnology and medicinal industries prioritized these areas with systemic budgetary support—a wise strategy to fight back the coronavirus infection. For instance, the Russian Federation accelerated venture capital investments in the biotechnology and medicine sector, though at the cost of slight decline in ICT and industrial technology venture financing (see Table 2.1).

As we have stated, disruptive technologies are not a systemic response to post-COVID challenges. The complex goals and objectives different

Table 2.1 Venture investments dynamics in Russia for selected industries

Industry	*1st half of 2020 (in USD mln)*	*% to the 1st half of 2019*	*% to averaged 1st half of year investments 2016–2019*
Information-communication technologies	20	69	59
Biotechnology and Medicine	14	233	311
Industrial technology	7	70	100

Source Compiled by the Author; based on open data of the Russian Venture Capital Association. Open internet access: http://www.rvca.ru/upload/files/lib/RVCA-yearbook-I-2020-Russian-PE-and-VC-market-review-ru.pdf

countries set for their public administration are being be emphasized in the post-COVID National Action Plans designed to lead the social-economic systems to a sustainable trajectory of growth alongside the reconstitution of household disposable incomes, fuelled by wide use of digital technologies. It is quite likely that common priority targets will be import substitution policies and the provision of a high degree of resilience of the health care system to such shocks in the future. The horizon of planning goes up to three years. An action plan could incorporate the following monitoring indicators: steady growth of personal disposable incomes; reducing unemployment to a level below 5%; sustainable GDP growth at the rate above 2.5% annually. To achieve the goals of the National Action Plans, a set of eight classes of measures can be considered.

1. Growth of citizens real incomes, spur of employment, and effective demand.

- Wider social support measures at the federal, regional, and municipal levels, thus strengthening the national social capital (Yankovskaya et al., 2020).
- Targeted budget allocations and payments to support the most vulnerable social groups with the priority families with children.
- Help to those who have lost their jobs: raising unemployment benefits to the minimum wage level; providing assistance in retraining; enforcing the public employment agencies (Dun et al., 2020; Osipov et al., 2021).

– Structural changes on the labour market, including the transition of workers to remote work; encouraging part-time employment and self-employment; the introduction of electronic personnel workflow monitoring systems.

Applicable target indicators:

– growth of real wages at the level of at least 2.5% on an annual basis;
– decrease in the proportion of the population with incomes below the 2019 level;
– growth of retail sales turnover at the level of at least 3% on an annual basis;
– growth in the volume of paid services to the citizens at a level not less than 2.5% on an annual basis.

2. Recovery and development of individual, small, and medium-sized businesses.

– Implementation of a corporate loans program for the most affected industries: soft loans at 2% with loan write-offs, provided that employment is maintained at a pre-pandemic level.
– Smooth transition from a simplified taxation system to other tax regimes in terms of the size of the tax cut-offs, including the establishment of a "transitional" tax regime and an awareness-raising campaign on the conditions, opportunities, and benefits of such a transition.
– Creation of an ecosystem for the comfortable work and development of individual entrepreneurship and SMEs on the basis of a single digital platform ("one window"), including access to all support measures, taxes settlements, information support, assistance in obtaining loans.
– Transition to a risk-oriented approach in control, supervisory, and licensing activities in the interests of entrepreneurs in compliance with the requirements for ensuring the safety of citizens; step-by-step transition to completely paperless interaction of control bodies and audited persons when submitting reports and exchange of documents, free from the obligation to store documents of strict reporting in paper form.

Applicable target indicators:

- reconstitution of employment level in SMEs and individual entrepreneurs as at pre-pandemic situation;
- growth rate of SME turnover is higher than the growth rate of the economy as a whole.

3. Launching a new investment cycle and improving the business climate.

- Creation of a comprehensive support mechanism for large private–public investment at the federal and regional levels, including on the basis of agreements on the protection and incentives of capital investments.
- Implementation of the largest investment projects for infrastructure development with significant multiplier effects in related industries, which will become one of the drivers of economic growth.
- Integration of development institutions' activities into the national agenda, auditing their functions, clarifying their goals, objectives, and performance indicators.
- Transformation of the business climate, including the regulation of bankruptcy procedures and the improvement of corporate law.
- Acceleration of construction procedures; reform of the regulatory legal framework for urban planning and construction.
- Digitalization of the construction industry; the use of digital twin technology.
- Creation of a program mechanism to accelerate the socio-economic development of urban agglomerations and cities that are drivers of economic growth.

  These measures should enable investments in fixed assets to be brought to the annual growth rate of at least 4.0%.

4. Acceleration of the technological development of the economy and increasing labour productivity fuelled by digitalization.

- Proactive provision of digital public services on the basis of platform cloud solutions; introduction of electronic registers of issued permits and licenses; creation of a single online system of citizen identification and ensuring the legal significance of their transactions in digital channels.

- Digitalization of health care: the formation of a unified information system (including the creation of a unified digital medical record) to ensure the availability of the required assistance to every individual; creation of a unified online system of medical statistics and monitoring of the work of medical institutions and establishments.
- New educational environment: digitalization of educational institutions across all levels; creation of new and integration of existing platforms for the quality of knowledge assessment and online education and training of personnel.
- Creation of ecosystem for technology companies: support for technology startups; development of domestic software solutions and cloud services.
- Artificial Intelligence: placing a special emphasis on artificial intelligence technologies, machine learning, and data mining in public and private sectors of the economy.

Target indicators are:

- information technology and communications industry growth rate higher than that of the economy as a whole;
- annual growth of small and medium-sized high-tech companies exceeds 10%.

5. Increase in exports and development of import substitution.

- Acceleration of import substitution of strategic components.
- Creation of a comprehensive system for exporters to support the entry into new world markets.

Target condition can be the growth of high value-added exports at the minimum rate of 5% annually.

6. Restoring the work of industries directly or indirectly affected by the spread of coronavirus infection.

- Support for strategic enterprises in the form of concessional loans to enhance working capital.
- Smart rehabilitation: a set of measures to support the most affected industries, transport, and services.
- Assistance to strengthen the competitiveness of the agro-industrial complex.
- Tourism and hospitality industry re-focusing on domestic tourism.

The measures should bring growth rates of industrial production in the manufacturing industries back to the level of at least 3% annually.

7. Increasing the economy's resilience to external shocks.

- Health care system should be resistant to epidemiological threats: modernization of the infectious diseases service, including the introduction of modern logistics and routing of patient movement; development of laboratory services and infectious diseases institutions.
- Creation of an effective system of prevention, detection, and response to threats to sanitary and epidemiological norms.
- Creation of an advanced pharmaceutical industry; creation of a reserve of medicines and medical products.

These measures should lead the economies to return to the trajectory of decreasing mortality rates and provide for high national vaccination scopes and coverage.

8. Pursue the opportunities.

It should be noted that—in these difficult times—certain markets have created a number of *new economic opportunities,* especially in the development of new forms of remote employment, training, and distance learning. Remote work—in conjunction with a remote system for retraining personnel—can become the foundation for a solution to the problem of effective employment of the population in a country. The transition of enterprises and organizations to remote work, with the according requirements for self-isolation, have led to accelerated digitalization in both the public and private sectors. For the accelerated development of these processes, it is necessary to create an appropriate infrastructure for remote communication and interaction, with the appropriate adjustment of the legal regulation of relationships in these areas.

The regionalization of the world economy, temporary gaps in supply chains, and the volatile exchange rates created favourable conditions for import substitution, and also potentially created new export niches.

The spread of the coronavirus infection has created new requirements for the resilience of both the healthcare sector and the economy as a whole to external shocks. Each government was able

to identify the strengths and weaknesses of their national health care systems: creating opportunities for a significant improvement in this sector, ensuring the sanitary and epidemiological well-being of the populations, and developing the related industries.

Conclusions

The actual readiness to be able to deliver the vaccine—and the different situations in different countries—demands we take a "big picture" approach in evaluating the post-COVID public administration. There are two major aspects that should be considered in further academic research—applied and ideological.

Contemporary idiomatic articulation of certain professional terminology signals that public administration will be challenged by a lot of new substances. Across the pages of scientific papers, there are such categories as "private digital citizenship", "citizenship roaming", "data embassies", "digital sovereignty", "political power of tech-corporates" (the Twitter case), "inequality and shrinking middle class", "social rating" (in China), the "ministry of loneliness" (in Japan), or Zuboff's "surveillance capitalism". In practical terms, this shows the increasing complexity on governance technologies and unstable strategic agenda for decision-makers—it is just impossible to prioritize what is impossible to foresee.

Nonetheless, whilst the governments are unable to define exactly what to do strategically, they can still decide on how to operate in the new reality, on what broad ideological basis. Should it be a meritocracy, or a democracy; liberalism or conservatism; free market or regulation? We are not driving the discussion towards the "clash of civilizations" discourse, but we question to what extend the liberal-democratic free market ideology is enough and available for the whole world. It appears that the ability to produce COVID-19 vaccines was found in just a few countries —China, Germany, India, Russia, Sweden, UK, USA—countries with a wide diversity of ideological bases and, most importantly, with different economic structures and priorities. There was one common characteristic, though—a strong system of public administration.

Until the horizons of humanity are cleared from worries of global risks and challenges, the institution of public administration will serve as the matter of stability, decisiveness, and hope worldwide.

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CHAPTER 3

Digitalization of the Post-COVID Economy

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Introduction

The global COVID-19 pandemic is an unprecedented crisis that has already had a huge social and economic impact. This crisis is reinforcing already inherent societal tendencies. When it passes, the world it leaves behind will be fundamentally different from what it was before: we face a "new normal" (Brocková et al., 2020). The transformation will not stop when the pandemic ends and will take place quickly; therefore, for a business, the main criterion for its success in the current environment will be its ability to adapt to the requirements of the digital world and

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actively interact with other market players. A significant number of works on digital trends of the economy already exists.

There are some macroeconomic and technological trends which inspire the confidence that after this pandemic the global economy will get new impulse.

The main research question is to define the paths of digitalization in post-COVID pandemic era. Digitalization changes not only operations or business models but also the dynamics of core technologies and core markets shifts (UNCTAD, 2021). There is a wide body of research on digital transformation, but rather few on digitalization.

The current research is based on the ideas of Schwab and Davis (Schwab & Davis, 2018) regarding aspects of implementing the 4th Industrial Revolution. The methodology of institutional analysis, the general theory of systems, and the system-structural approach based on it were used in the research to describe directions and scope of further path of digitalization in post-COVID times.

Methodology

Digitalization is understood as the transformation of analogue signals into digital pieces (Hagberg et al., 2016; Parviainen et al., 2017). Some authors understand digitalization in a broader manner, characterizing it as converting *all* information types to the digital language. Certain researchers distinguish between digitalization, digitization, and digitation (Gobble, 2018; Osipov, 2020; Srai & Lorentz, 2019). Digitalization is changing the global business environment at a great speed (Ahmad & Murray, 2019; Parviainen et al., 2017). The development of new digital technologies along with automation and artificial intelligence is enabling a new wave of smart companies (Goldfarb & Tucker, 2019).

Digitalization significantly influences all spheres of contemporary society and has a great impact on the development of the economy in order to achieve the highest results (Parida et al., 2019; Ross, 2017); digitalization affects the creation and development of new goods and services, customer relationships, and management, and management functions, as well as the overall effectiveness of the company (Bredmar, 2017; Konina, 2021; Kuusisto, 2017; Nevskaya, 2020). Digitization is increasing the assortment and variety of new products that are created and made available to consumers. Surprisingly, along with growth in new products,

digitalization has given rise to substantial increases in the quality of the best products (Waldfogel, 2017).

There is a growing body of research connected with the digital implications of the COVID-19 pandemic, as well as both the impact of the COVID-19 crisis on business organizations and their digital business models (Seetharaman, 2020; Ågerfalk et al., 2020; Jiang, 2020) and the social and economic consequences of COVID-19 (Dynkin & Telegina, 2020; Hitt et al., 2021; Kolodko, 2020; Mau, 2021; Varnavskii, 2021).

Results

1. The main directions of digitalizationof the economy.

By "the digitalization of the economy", the authors refer to:

a) the development of the digital economy;
b) an increase in the share of the digital economy in GDP;
c) more dynamic development of ICT industries and digital companies; the formation and development of digital TNCs;
d) the formation of the infrastructure of the digital economy (Inozemtsev,);
e) the digital transformation of traditional industries and companies and all relationships of economic actors;
f) the growth of global data exchange being faster than trade in goods and services;
g) the creation of digital markets, new consumers, and new services; the development of e-commerce for goods and services (Andrianova & Vlasenko, 2020);
h) the emergence and development of digital financial services and the emergence of digital money.

Digitalization can be defined as a process based on a change in the ratio of factors of production in the creation of value, and as the transition to the next stage of a scientific and technological revolution with the growing impact of knowledge on value added. Knowledge becomes a productive force. The bearers of knowledge are information and data.

Being an objective reality connected with technological progress and the growing importance of knowledge and intellectual abilities, digitalization creates a lot of opportunities for advanced economic growth and sustainable development on the basis of the digital transformation of all economic activities, the sale of goods and services via e-commerce, digital data flows, and Internet access.

The digitalization of the economy—based on infrastructure (Internet access, software, telecommunications), e-business (conducting business through computer networks), and e-commerce (distribution of goods via the Internet)—led to the broadest use of information technology in production, management, communications, and entertainment. Digital transformation as part of the process of digitalization is not just automation, but the creation of new business models, new markets, and new consumers, relying on the capabilities of the digital economy. These are opportunities to increase labor productivity and the competitiveness of companies, while reducing production costs.

Today, more than 4.66 billion people are connected to the Internet (more than 59% of the world's population, on all the continents in all the countries); 92.6% (4.32 billion) accessed the internet via mobile devices.[1] Currently, the average Internet user spends 6 h and 43 min every day (approximately 40% of their waking life) on the Internet. Social media user numbers increased by more than 13% over the past year, with nearly half a billion new users taking the global user total to almost 4.2 billion by the start of 2021.[2] The main drivers for the digitalization of the economy were the development of the Internet and e-commerce, which opened up new ways for the exchange of information, the sale of goods, and the provision of services.

Digitalization enables the efficient use of huge amount of data generated in a wide variety of information systems and means a new stage in the development of society, with the widespread use of technologies such as artificial intelligence, the Internet of Things, machine learning, etc. linked with the development of the knowledge economy. Some experts

[1] https://www.statista.com/statistics/617136/digital-population-worldwide/

[2] https://datareportal.com/reports/digital-2021-global-overview-report#:~:text=Social%20media%20user%20numbers%20increased,by%20the%20start%20of%202021.

even equate these concepts. The knowledge economy is based on intangible production, and the drivers of growth are knowledge and people who have this knowledge.

It is recognized that Japan, Singapore, USA, Hong Kong, Great Britain, Estonia, South Korea, and China are actively progressing in digitalization. High-tech infrastructure, including Big Data processing and many innovations to create a comfortable social climate, has been implemented in Copenhagen, Barcelona, Helsinki, and Vancouver. At the same time, the growing digitalization of the economy is changing the nature of work, leading to the reduction of lower skills positions and the creation of new jobs with more advanced skills.

2. The contours of the world after COVID-19.

The COVID-19 pandemic has delivered a heavy blow to economic activities worldwide; output has decreased globally by 4.3%, creating an environment of uncertainty, worries, and hypervolatily (Baffes et al., 2021). The pandemic has caused serious and complex problems for companies around the world. Consumer spending has declined in almost all industries, and despite extraordinary measures taken by governments to mitigate the economic impact, many companies—large and small—are struggling to survive (especially in hard-hit sectors such as retail, transportation, travel, and hospitality). The long-term consequences of the crisis are the accelerating pace of digitalization, automation, and robotization. The immediate impact for surviving companies is significantly faster digital transformation—replacing, as much as possible, the physical services they provide and their personal working methods with virtual equivalents. The shift to online communication means that after this crisis, many more people will have the skills to use remote job tools that will make possible lower costs, less travel, and less environmental impact.

The immediate consequences of the crisis include hybrid and remote work models, the growth of online commerce, the acceleration of cashless payments, and the growth of omnichannel marketing and sales. Moving from the real world to online facilities is a post-pandemic reality. Key long-term impacts will be a new attitude towards environmental sustainability and data privacy before adapting supply chains and cost management. The growth of digital flows will continue.

The pandemic showed that many supply chains were fragile: highly dependent on individual suppliers and less efficient distribution channels.

Digitalization of the economies has built new opportunities for cross-border trade and investment, as well as the ongoing emergence of new and disruptive business models. The increasingly embedded nature of cross-border trade in goods and services is also a result of global value chains made possible by the flow of vast amounts of data across borders. Digitalization provides a new lens of growth: for consumers, it is cheaper, faster and more tailored; for business, it has faster capital turnover, lower cost, and more opportunities for development, scaling, and competition; for the state, it a more transparent economy, and offers more opportunities for economic monitoring, alongside easier and faster adjustments and reforms (Chearavanont, 2020). The growth of digital commerce is an important—albeit hard to measure—component of these global flows. As digital commerce grows, develops, and takes on new forms, it is simultaneously driving and transforming globalization. Digitalization and globalization are inseparable. The post-COVID world is creating possibilities for new alliances as well empowering protectionist trends. Deglobalization, a decrease in foreign investment, the refinancing of external debts—the COVID-19 crisis has stressed the change in vectors of the global economy.

The coronavirus pandemic, as every crisis does, is changing the global business environment and creating new opportunities for business, accelerating the dynamics of digitalization.

The digital economy will grow rapidly after the pandemic and will be the most important engine of innovation, competitiveness, and economic growth in the world. The COVID-19 pandemic accelerated the trend that consumers focus their ICT spending on such current technologies as mobility, social solutions, cloud computing, and big data analytics. The new era opens up the widest range of opportunities for artificial intelligence (AI) and Internet of Things, robotics, AR/VR, and blockchain. Despite all the negative consequences, the pandemic has become a catalyst for the development of further digital transformation and new global expectations and thinking about the future (Faraj et al., 2021).

3. Factors contributing and influencing the digitalizationof the economy.

The pandemic led to hypervolatility, completely disrupting business operations, and digital transformation has emerged as a critical component of companies' survival.

One of the factors of the further growth of digitalization is a new business infrastructure which enables digital technologies to be available anytime and anywhere due to mobility and clouds; this leads to lower costs and less response time, new formats of interaction, and solutions that are easily scalable, more agile, adaptable, faster, flexible, and personalized. Another factor contributing to the growing digitalization of the economy is the changing correlation of demand and supply, being more efficient than the traditional one in terms of labor productivity and costs per unit of production.

The post-COVID economy is based on the further digitalization of society, business, and government simultaneously; therefore its development consists in accelerating the processes of penetration of digital relations at all levels of interaction of its participants—from state to personal. Trying not to lose competition, commercial companies expedite their own digitalization processes, but with government departments the situation is somewhat more complicated, since this requires the initiative of the state, a change in legislation, and it may take more than one year to resolve such issues. The important role of the state is support of financial literacy and digital competences development for adapting entrepreneurs to the conditions of the digital world.

4. Digitalization and the financial sector

COVID-19 has accelerated digitalization of the banking sector and the further fast growth of FinTech (Ponamorenko, 2020; Shashkova et al., 2020). The transition from classical to digital models has become inevitable for the banking system as well. The free market automatically accepts and replicates any cost-effective innovation, no matter whether digital or analog. Those most prepared for the conditions of COVID-19 were neo-banks, the interaction of customers with which occurs through applications and online services. The main tasks facing banks now are to offer their customers' products built according their needs and to simplify control over online services and applications, admitting electronic versions of documents equal to the originals.

In just a few months, there has been a significant increase in contactless payments.

The real revolution and unprecedented growth in online payments has occurred in FinTech. One example is the growing coverage of the Alibaba marketplace in China, where 95% of its turnover comes from digital payments. Convenience, speed, and the security of electronic transactions will gradually "kill" cash. FinTech startups, online payments, crypto currencies, and new digital financial products connected with AI create a new landscape for post-COVID financial markets.

The speed of online transactions is also considered an additional advantage and one of the opportunities brought by COVID-19.

5. Digital transformationof companies

More and more companies are digitally transforming their operations and turning de facto into digital ones. The European Commission notes that companies not connected to digital channels will be excluded from the global market. In our opinion, a company can be called digital if seeks to move most of its business processes online, such as contract negotiation, accounting, logistics processes, registration of transactions, procurement, personnel training, monitoring of relationships with partners and clients, and technical support. The implementation of digital tools in management, control, and planning, as well innovative open organizational culture, together makes the company "digital" and ensures its efficiency, productivity, and business growth potential—competitive advantages that are urgently needed now (Stonehouse and Konina, 2020).

To navigate the uncertainty and worries caused by the COVID-19 pandemic, companies need digital resiliency as a tool for remaining competitive and growing. Digital companies have significantly more customer data than others. Digital technologies reduce communication time and speed up all business processes, and thus special attention is paid to the development of human capital. Among the hallmarks of a digital company are:

- a high level of automation;
- electronic internal document flow;
- digital management accounting systems;
- cloud storages and mobile applications;

- CRM and Omni channel customer services;
- the availability of corporate social networks;
- remote work and AI-assisted operations;
- big data and business analytics, etc.

In the new normal of the post-pandemic tomorrow, the most agile and most adaptable firms will survive. Digitalization means that firms need to learn how to turn information into digital data, extract knowledge from it, and build a business on this knowledge. Today, the largest media resource does not create content itself; the largest "taxi driver" does not own a single car; the largest rental network does not have its own premises; the largest player in the trading market does not have warehouses. The current leaders of the digital economy are the American firms Google, Amazon, Airbnb, Netflix, Spotify, Uber, and Tesla, alongside Chinese firms Alibaba, Tencent, Baidu, Huawei, as all we the South Korean firm Samsung, among others.

Huawei, as one of the global digitally transforming companies, is setting an example. There are no paper documents in its office or work site (like an outdated storage medium), its staff solves 99% of internal organizational tasks through corporate applications (for example, actively using WeLink smartphone application, which combines internal corporate secure communicators, databases and ERP, good LTE and WIFI networks), etc.

At the same time, companies' digitalization will be accompanied with a change of the nature of jobs. Many of them are planning a transition on at least a hybrid virtual model that combines remote work with time in the office. The matter is that the remote work demonstrated its efficiency alongside a growth of productivity.

Discussion

On the basis of research's results, we can stipulate the following: after the COVID-19 pandemic, the dynamics of the digitalization of the economy will be ahead of the general economic growth. The products of the digital economy are becoming catalysts for deep changes in all spheres, especially big changes that might happen in finances and banking. The digital economy involves the exchange of data between process participants online. Its advantages over the traditional model is that it simplifies and speeds up the interaction of the parties, making the

management of economic processes simpler and more transparent, it is scalable internationally, and it easily integrates into existing processes in the state.

The unprecedented economic crisis caused by the COVID-19 pandemic demonstrated strength of the digital sphere (Bernadine et al., 2020).

New ways of creating and distributing content and generating revenue online are stimulating the creativity of more and more people, even outside the creative industries, and increasing the digital sector's contribution to overall GDP. In the post-COVID economy knowledge and data are becoming the most important source of growth. High-tech industries, financial and banking sectors, the automotive industry, energy, and the service sector are rapidly modernizing. Fewer industries remain less impacted by digital change.

The disrupting effects of the pandemic have accelerated global digital transformation by over two years. The digitalization of production is foreseen to accelerate in the post-pandemic future. The concept of digital production is understood as a set of tools for optimizing the workflow through software and hardware solutions. Among industrial companies, noticeable progress in digitalization is foreseen in the chemical industry, FMCG production, and mechanical engineering. Telecom, finance, retail, and transport industries are very promising in terms of digitalization in the post-COVID economy. To stay competitive, companies from different industries are increasingly using different digital tools, including remote desktops, virtual operators, virtual IT infrastructure, IoT, Big Data, neural networks, artificial intelligence, robotics, etc. The process in agriculture is a little slower, but sensors are already being introduced here which make it possible to take more crops.

The new normal of the post-pandemic economy is connected with the greater efficiency of companies' operations based on the introduction of business analytics and the transition in production from analogue to digital. During the pandemic, companies started to more actively use such technologies as mobile apps to bring together peer-to-peer transactions; to rely on a user rating system to monitor the quality of services; to offer service providers the flexibility to define their working hours; and to rely on service providers to use their own instruments and assets. Companies are motivated to use new digital technologies because they facilitate creating new value for customers, reducing the cost of goods and services and the percentage of rejects while improving the quality of products.

The further digitalization of the economy is connected with the next generation of digital technologies, such as AI, IoT, robotics, quantum computing, neurotechnology, and other such facilities applicable in all industries. These technologies have large-scale, cross-sectoral effects. Today, projects are going through the transition to M2M technologies. Most are still within the framework of one company, but the nearest next level is the Industrial Internet of Things.

In general, the pandemic did not lead to the development of new technologies; rather, it has given a chance for a faster and wider adoption of those that already existed. Those digital technologies most in demand in the new post-COVID era are the following: Digital Contracts and Blockchain, Digital currencies, IoT, Mobile solutions, AR/VR, 3D Printing, Contactless Authentication, Advanced Encryption Techniques, communication and Collaboration tools, Cloud and microservices, Big Data, chatbots and Voice bots, Communications infrastructure, etc.

The COVID-19 crisis and new digitalization trends have had a great impact on the labor market, labor demand, occupations, the requirements for competencies, and the skills needed. The main competence that needs to be developed is the ability for continuous learning, the readiness to constantly master new knowledge on new emerging technologies. Digital skills are crucial. Also, it is imperative to cultivate independence, initiative, ingenuity, and organizational ability. Management in digital companies is organized in the form of semi-autonomous working groups, which must themselves take care of changing their processes, inventing new methods to achieve their goals. The new world of labor is a world of remote work, new skills, and automation, talents, and inventors.

For talents, it is necessary to develop the skills of adaptability and learning, to have competencies in the field of new technologies, to have expertise in their field, to learn quickly, and to implement new solutions. For example, every manager responsible for a certain business function in a company should have an idea of what services and technologies can help them in solving everyday problems as well as whether these can be integrated into the general data flows and business processes of the company. Also, talents need a sincere interest in people, particularly their desires and preferences.

The skills of remote work are becoming very important. An increasing number of companies are successfully working with remote teams, and this trend will only intensify (Kane et al., 2021).

Specialists who want to remain in demand in this rapidly changing reality will have to possess the main competencies for the digital world—to think flexibly, to be able to accept and implement new things, and to analyze and interpret data. The post-COVID era worker will need high level of competence in communication, IT skill, and online automation.

Conclusions

Our comparative and structural analysis permits us to describe and explain the tendencies of digitalization and economic trends after the pandemic. Digitalization is expected to be the key driver of economic growth after COVID-19. Many aspects of digital achievements will stay with us further, but there are also serious challenges connected with cybersecurity, the lack of stability on financial markets, and growing bubbles, connected with unprecedented flow of money into the economy. Generally, the digital economy happened to be stronger than it was estimated prior to the pandemic. This conclusion acknowledges the necessity of further theoretical research regarding the nature of the current stage of digitalization and its further trends.

Further digitalization of the economy in post-COVID times is connected with the active participation of the state. The most important issues of state participation in digitalization are connected with reduction of inequality and the state implementation of planning.

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CHAPTER 4

Impact of Regional Culture on Overcoming the Coronavirus Pandemic

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Introduction

Since the World Health Organization announced the Coronavirus pandemic, governments have adopted a number of policy measures aiming to alter the public's behaviors such as quarantine, lockdown, social distancing, or stay-at-home orders. There are a great deal of variations in regard to the scale, scope, and strictness of these measures across countries (Yan et al., 2020).

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Table 4.1 World Health Organization statistics on the number of deaths from COVID-19 in 2020

Country	*Total population, million people*	*Number of deaths from COVID, people*	*Number of deaths out of total population, %*
World	7,794.8	2,907,944	0.037%
China	1,439.3	4,853	0.0003%
Hong Kong	7.5	207	0.003%
Japan	126.5	9,353	0.007%
South Korea	51.3	1,765	0.003%
Europe	447.7	948,580	0.212%
US	331.0	574,966	0.174%
Kazakhstan	18.8	3,236	0.017%
Russia	145.9	103,263	0.071%

Source Created by Authors on the basis of WHO data

As a result of non-pharmaceutical interventions to combat the spread of Coronavirus, countries have achieved different results, which are demonstrated by the data in the table 4.1 below. The best results were achieved by China (4,853 deaths, 0.0003% of the population), Hong Kong (207 deaths, 0.003% of the population), and Japan (9,353 deaths, 0.007% of the population). Kazakhstan and Russia are doing better in the fight against Coronavirus than Europe and the United States.

This article aims to provide an explanation as to why equal measures to combat Coronavirus applied in various countries have resulted in different outcomes. The study analyzes effective management strategies of East Asian countries and Western countries, and concludes that regional culture shapes overcoming the Coronavirus pandemic.

Methodology

The current study implements a comprehensive comparative analysis of changes in national organizational cultures under the influence of crisis externalities associated with the global COVID-19 pandemic. As the basic principles, the national features of organizational cultures proposed by Gert Hofstede are used: power distance, uncertainty avoidance, long-term orientation, collectivism vs. individualism. The typology of cultural dimensions, further developed by Hofstede, is the basis for cross-cultural communication. Using information obtained from factor analysis, it

describes the influence of the culture of a society on the individual values of its members, and how these values affect their behavior.

The technique of transformation uncertainty avoidance is used through the analysis of existing phenomena, information overabundance, and disinformation. The method of case studies was used in the formation of national strategies for changing organizational culture to overcome COVID-19 in a number of European and Asian countries, such as Sweden, China, France, and Japan.

All countries of the world are divided into four groups:

- striving for personal success, well-being, and self-actualization.
- personal safety motives, leading values—well-being and hard work.
- individual well-being less important than group solidarity.
- personal success is assessed as a common achievement; the quality of human connections in the living environment is of particular importance. Russia is closer to this group.

A new type of information flows has been identified, which is associated with raising the level of public awareness in the context of the global pandemic and the development of awareness technologies in order to strengthen the mental health of society.

Results

1. The impact of Coronavirus on mental health

COVID-19 has been perceived worldwide as a major threat to health and a danger to the global economy, affecting people's lives by influencing their everyday behavior and causing feelings of panic, anxiety, depression, and often triggering intense fear (Jiao et al., 2020).

The COVID-19 pandemic resulted in social isolation globally, creating heightened levels of stress and anxiety. Social isolation is confirmed to be "positively associated with psychological distress, supporting a notion that lack of social integration has deleterious consequences for mental health" (Kim & Jung, 2021).

According to Leung and Lo (2020), a genuine fear arose during the COVID-19 outbreak, due to: (1) the pandemic seeming to be severe both in terms of its spreading magnitude and the impacts on health; (2)

the incapability of governments and their health-related departments in providing effective measures; (3) a lack of reliable sources of supplies and medical services. There is the perception that the feelings and opinions of the respondents were not grounded with factual knowledge, but derived from emotions and unconfirmed information. It was revealed that many of the respondents were sensitive to the related information, but not particularly keen on scrutinizing the credibility of those sources. They tend to be more exceptive to negative information than their positive counterpart.

Curseu et al. (2021) investigate that COVID-19 anxiety and negative mood positively correlate with death anxiety and communication of general COVID-19 information. Death reflection reduces negative mood in relation to COVID-19, and attenuates the positive association between death anxiety on the one hand and the negative mood and anxiety in relation to COVID-19 on the other hand.

2. Economy

COVID-19 has had a severe negative impact on economy, both on national and international levels. Being efficient in combating with the spread of Coronavirus, lockdown jeopardized small and medium business in majority of countries, negatively impacted the well-being of both national and the international economy. In the context of the pandemic, the economy as a whole has contracted significantly due to the increased unemployment rate, the increased inflation rate, and reduced investment amounts (Lixing, 2020).

During times of widespread economic upheaval, financial stress impacts families directly via individual job loss, as well as indirectly through uncertainty about the national economy and local unemployment rates (Dun et al., 2020; Osipov, 2019; Osipov et al., 2021; Prime et al., 2020).

3. The main methods of dealing with COVID-19

In order to prevent people from getting infected and infecting others with COVID-19 (Wismans et al., 2020), the majority of countries applied aggressive non-pharmaceutical interventions, including stay-at-home orders, closing educational institutes and non-essential businesses, and imposing restriction on domestic and international travels. Further,

in places where individuals have to be present in the same physical space, the best tool to mitigate the spread of COVID-19 is through social distancing and wearing masks (Gupta et al., 2021). In the absence of a cure or vaccine, the authorities have been aggressively utilizing digital technologies to mitigate the pandemic spread by tracking and restricting the movement of individuals within a monitored/lockdown region (Konstantinov et al., 2020).

The incapability to deal with the spread of COVID-19 among people around the globe arises not only due to non-compliance with sanitary norms and failures with self-isolation, but also due to underestimating the usefulness of wearing masks.

Numerous case studies of successful strategies to control outbreaks of COVID-19, particularly in South-Eastern region of the world, prove the usefulness and effectiveness of wearing masks (Ho, 2020). In Hong Kong and other East Asian regions, the wearing of facemasks was adopted by the broader population since the outbreak of the disease. According to Ho (2020), 96.6% of the Hong Kong population uses the facemasks, which led to enormously low number of confirmed COVID-19 cases. This fact is important, since Hong Kong has one of the most highly dense populations in the world and it is in the vicinity of the original Chinese epicenter (Ho, 2020).

4. Why the main Coronavirus fighting methods fail to work or work inefficiently?

During lockdown, quarantine, self-isolation, and social distancing, virtual communication—especially social media—has taken the place of major source of interaction and information exchange (Mukhtar, 2021). Social networks were determined as a key misinformation exchange platforms since they accelerated the spread of fake information and "played an extremely destructive role" (Nurumov et al., 2020). There are two main problems to deal with the fake news disseminated via social media. The first one is that it is impossible to block the spread of misinformation via social networks and stop instant messaging. The second one is that traditional media is unable to obtain the audience reach and to achieve the reaction speed that is covered by social media.

The situation is aggravated by the lack of information from officials. Under the conditions of information hunger and uncertainty, people are

trying to find answers based on speculation, anecdotes, and subjective experience. In case of Kazakhstan, the representatives of media acknowledged problems obtaining useful, truthful, and reliable information at the beginning of the pandemic. Moreover, the government authorities were criticized for weak communication and bureaucracy that influenced untimely news releases and recommendations to publish and broadcast "less news about the pandemic and publishing softer and more positive content" (Nurumov et al., 2020).

The current COVID-19 pandemic is a global, exogenous shock, impacting individuals' decision-making and behavior, allowing researchers to test theories of personality by exploring how traits, in conjunction with individual and societal differences, affect compliance and cooperation.

Chan et al. (2020) assess the interconnection between five main psychological traits (openness, agreeableness, neuroticism, extroversion, conscientiousness) and mobility behavior during COVID-19. It was found that there is a "statistically significant relationships between particular traits and regulatory compliance (mobility behavior) both before and after region-specific legislative interventions, and the global announcement of the pandemic". The study "indicates that societies higher in openness experience less mobility decrease compared to the average, both pre and post the pandemic announcement, while regions higher in agreeableness showed a stronger decreased mobility compared to the average" (Chan et al., 2020; Yankovskaya et al., 2020).

Hofstede (2001) developed a multivariate value model that helps explore the culture of an organization. The parameters used for the research are: individualism vs collectivism; power distance (large or small); uncertainty aversion (strong or weak); masculinity vs. femininity (Konstantinov, 2020); orientation (long or short term). Both leaders and followers define the boundaries of groups more clearly during a crisis. Believers in Iran and Israel continued to gather, considering their religious community as their single group, asking for help from God. National leaders said to the people of their country: "Hold on to me, obviously, from a biological point of view, the Coronavirus considers all humans—and an unknown number of other mammals—to be equally suitable as their home, regardless of religion or nationality" (Konstantinov, 2020). Our strategy as humans should be to recognize this and act accordingly. At least in this respect, the Coronavirus resembles climate change: we are all in the same boat.

Cultures

While we share one boat, we all have our separate cultural cabin. We tend to stick to the unwritten rules of our culture that makes societies respond in different ways to the virus. (Krings et al., 2021).

Individualism vs Collectivism

In an individualistic society, such as certain English-speaking countries or the Netherlands, people behave like atoms in a gas. They can freely choose whether to group or to separate. Society could respond very quickly to a change in external factors. In the USA, Republicans and Democrats have quickly buried their feuds to fight Coronavirus.

In a collectivistic society, people are more like atoms in a crystal. What they do reflects their role in society. Whatever the external circumstances, they organize themselves in groups that tend to stick together for life. Getting out of role can be severely shamed or even punished. This happened for the first Chinese medical doctor who diagnosed COVID-19 in 2019.

Power Distance

A society of small power distance has a strong sense of mutual obligation between all its members. Citizens are likely, in these cultures, to do as their leaders ask. They are used to exerting community duties (Krings et al., 2021). Austria, one of the most egalitarian countries in the world, is now releasing its lockdown, opening its small enterprises again, as a sign of mutual assistance.

A society of large power distance has no such unwritten social contract. Authorities will neglect large parts of their populations, possibly repress them forcibly, as Filipino president Duterte is doing, and these unfortunate have-nots will expect nothing different (Krings et al., 2021).

Masculinity

In a masculine society, the use of force and big words is taken to be a sign of status. During the pandemic, people have been likely to accept and endorse a degree of state violence; it would make them feel safer. Massive disinfecting of public spaces, ineffective but showing muscle, happens in

masculine cultures. Boris Johnson, a few weeks ago before he was diagnosed with COVID-19, gave some muscular talk about "sending the virus packing". Trump tweeted about a "very big New Deal", a kind of recovery program for the country (Krings et al., 2021). In feminine societies, the use of force is not seen as a good thing. Pressure should be soft, and good intentions are stressed.

Uncertainty Avoidance

Uncertainty avoidance is about stress in the face of the unknown. Even though data on detergent sales is unavailable, there is a high possibility that the correlation between its usage and uncertainty avoidance is even sharper in times of an epidemic. If a culture is both masculine and avoiding uncertainty, response to a crisis is likely to strongly push towards authoritarianism.

In societies tolerant of uncertainty, there could be a risk of carelessness. States are likely to talk of letting the virus run its course, so that life can go on as normal. This has been the line in the Netherlands, UK, and Sweden, for instance, although in the former two cases, the virus quickly forced the country into more severe measures. Still, the Dutch and English go out of doors in their numbers, enjoying the fine spring weather, while Swedish children still go to school.

Long-Term Orientation

The countries that were fastest in curbing the pandemic were Singapore, Korea, Taiwan, and Japan; all have long-term oriented cultures. These countries and their citizens are ever preparing for uncertainty events that may happen. They are used to epidemics spreading from the Chinese mainland. Citizens are used to adapting their behavior too, rather than sticking to a fixed form. China itself, also long-term oriented, also responded very rapidly after the initial cover-up.

Many European countries are also long-term oriented. They are likely to have ample hospital capacity and savings. How they distribute assets is another matter, relating to such issues as power distance.

Short-term oriented countries are more likely to react with emotion, either defensive avoidance or hyper vigilance. This emotion could also be positive, with acts of defiance and solidarity.

Indulgence

Indulgent societies are those in which people feel that life is good and this feeling is okay. If forced to keep social distance, they will be quick to make songs and jokes about it, and turn it into a fun event as much as possible.

In restrained societies, the idea is that life is hard, and this is normal. People will accept the misery of social distancing as inevitable. They are more likely to accept the utter misery of not being able to say goodbye to family members about to die.

A Gestalt Made of Six Dimensions

This walk through the dimensions was, of course, one of the simplifications our readers know from us. In reality, these dimensions of culture do not exist. They are nothing more than ways to make differences between societies visible and understandable. Also, countries have configurations in which dimensions occur together, which we neglected here.

Discussions

Collectivism vs. Individualism

The successful struggle of China with the epidemic is believed to be primarily the result of the collectivism inherent in this nation, in contrast to the individualism of Europeans and Americans. Countries that are successfully coping with the pandemic are states with a developed social capital based on highly humane principles of human relations and mutual support.

In the Chinese model, this society was mobilized to fight the disease and citizens were disciplined to comply with the instructions of the authorized state bodies. This model was based on the traditions of Eastern collectivism and unquestioning obedience to the regulations of the governing state bodies. This experience has led to success in countries such as South Korea, where the spread has significantly decreased and is under control, and Singapore, where there are no deaths as a result of the disease (Ho, 2020).

In the Western model, from Italian to Swedish, social behavior was based on Western selfishness and liberal respect for human rights, freedom of movement, and social communication, under all conditions. As was

seen know, this model was associated with great human losses and costs for economic development (Ho, 2020).

International Experience: Case Studies of Sweden, China, France, and Japan

Since the beginning of the pandemic, national governments around the Globe have employed a series of non-pharmaceutical interventions to combat the transmission of the virus, particularly isolation, quarantine, and social distancing, as well as community containment. There are plenty of aspects, such as the health care capacity of a country and the severity of the pandemic, that impacts the government strategies. Therefore, the scale and scope of such interventions differ considerably from one country to another. Yan et al. (2020) discuss how "contextual institutional arrangements and national cultural orientation impact the formation and adoption of four distinct national COVID-19 response strategies: a nudge strategy in Sweden, a mandate strategy in China, a decree strategy in France, and a boost strategy in Japan".

Sweden's Coronavirus reaction applied nudge strategy, which is intended to change practices without disallowing choices or forcing upon people's opportunity of decision, in order to guide individuals in a specific way. The Swedish specialists clarified that dealing with the Coronavirus pandemic "would not be a run yet a marathon" (Yan et al., 2020). Although a transitory prohibition on all trivial travel to Sweden was set up, related measures and limitations on inside interaction were not completely executed. Swedish gyms, schools, cafés, and shops have all stayed open all through the spread of the pandemic. There have been no guidelines in regards to residents' versatility. There are a few proposals regarding general well-being endeavors, for example, social separating rules in eateries, working on the web, and confining the measures of get-togethers. At the public level, Sweden's technique zeros in more on suggestions than necessities, to actuate people in general to adjust their practices deliberately to battle Coronavirus. The key here is simply the feeling of people's obligation and significant degree of trust in Swedish society.

Rather than Sweden, China's Coronavirus reaction system addresses mandate strategy, which includes authority-based coercive powers and social agreement. The Chinese reaction to Coronavirus has highlighted the total lockdown of urban communities with significant flare-ups and

required social removing for all populaces. In particular, all citizens were confined to remaining at home in isolation. By far most of public spots, like retail outlets, schools, cafés, and cinemas, were shut on a public scale (Yan et al., 2020).

In France, although both the mandate and decree strategies emphasize the prohibition and limitation of unwanted behavior, unlike mandate strategy applied in China, the decree strategy is legally based. The pandemic in France was perceived as a "We are at War" situation and the quarantine was the period of the "battle". Since the lockdown was organized, French citizens have been told to remain at home, aside from for fundamental exercises. Violation of lockdown regime was subject to a fine in the range of €135 and €3,750, as per the seriousness of the infringement.

A boost strategy will in general cultivate individuals' fitness concerning settling on decisions by changing their surroundings and through the information presentation. Despite the fact that Japan has a unitary government framework, "sub-national governments have gained a fair amount of autonomy by law in the policymaking process" (Yan et al., 2020). Specific to the COVID-19 crisis, local policy interventions guiding individuals' behavior in Tokyo and Hokkaido were issued much earlier than the national government's recommendations in the state of emergency. The population of Japan was suggested to stay away from the shut spaces with deficient ventilation, swarmed conditions with individuals, and discussions at a brief distance to decrease human-to-human contact.

There is no universal "one-size-fits-all" strategy that can be utilized to battle Coronavirus on a worldwide scale. The discussed case studies can serve as possible directions for other countries to choose their distinct trajectories in fighting against Coronavirus. Those trajectories are expected to be "contextually dependent and depend upon reflections regarding how pandemic response strategies have interacted with the response of the population, are shaped by institutional arrangements, and are informed by national cultural orientations" (Yan et al., 2020).

Government Reaction

"When some Western countries experienced relatively lower numbers of COVID-19 cases, they were praised by commentators for their democratic and progressive ideology… When East Asia did extremely well in

containing the virus, the West believed it was because East Asian countries are Confucian and draconian, and hence, obedient to undemocratic lockdown rules" (Ho, 2020). However, the success stories of dealing with Coronavirus in Eastern regions are explained by government use of medical knowledge, public health expertise, and social behavior to combat COVID-19. Ho (2020) argues that "a scientific state and competent population excelling in STEM (science, technology, engineering, and mathematics) subjects helps these societies in understanding and dealing with the pandemic" (Ho, 2020).

Do et al. (2021) found out that "with every delay of 7 days in reinstating the intervention measures, the peaks of the active confirmed cases and cumulative deaths would increase exponentially". It is obvious that the sooner the reinstating of intervention measures are implemented, the better the outcomes of the situation. However, due to the absence of universal instructions on fighting against COVID-19, the main recommendation would be working partnership between government agencies and medical institutions and governmental support on media.

Zhang et al. (2020) advises increasing publicity about COVID-19 prevention measures and providing positive psychological guidance to alleviate anxiety among populations. Timely announcements about the epidemic, vigorous publicity about epidemic prevention measures, and the support of all sectors of society will give people around the world greater confidence and strength to overcome the epidemic.

According to Wang (2021) government stringency has a far larger impact on social distancing than national culture. Social distancing increases with government stringency. Wang claims that in such an urgent time, the government plays a key role in determining the success of social distancing.

Conclusions

The current study analyzed the main methods for fighting against Coronavirus and identifies the main reasons of their inefficiencies. The authors paid special attention to the problem of working with an approach to overcoming citizens' disinformation in the fight against a pandemic as the development of such a characteristic of organizational culture as uncertainty avoidance. The authors partially managed to identify those new phenomena that are associated with mutual borrowing in the cultures of different countries of foreign experience, despite political differences.

Governmental intervention is necessary. The study concludes that the preventative methods against COVID-19 would be contextually dependent and closely related to population response.

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CHAPTER 5

Legal Fundamentals for Institutional Changes to Revive the Economy After the Pandemic

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Introduction

The COVID-19 pandemic has negatively impacted almost all areas of society, especially the economic sector. In particular, the threat of the further spread of coronavirus infection affected the economic and commercial activities of entrepreneurs in the retail sector, who still have to overcome various consequences of the high alert regime, which entailed significant restrictions on entrepreneurial activity, the remote work of employees, and the expansion of the grounds for administrative liability. On the other hand, online shopping, including online marketplaces and other online and distant services, have rapidly developed.

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Along with such spheres as retail business, air transportation, tourism, public catering, and suchlike, some other seemingly non-obvious spheres, such as education, were also affected by the pandemic. According to some participants in the educational process, the quality of education has decreased by being online (Gutbrod, 2020; Inozemtsev, 2020; Sidorenko & von Arx, 2020; Trikoz et al., 2020). As a result, students began to file lawsuits to reduce tuition fees against both Russian and foreign universities (e.g., a lawsuit (Civil Action No. 20-10827-RGS of 07.01.2021) against Boston University in the United States; RBC, 2021). Indeed, for a high-quality educational organization to adapt to an online mode, up-to-date technical equipment of universities is necessary, as well as the use of modern educational technologies that would ensure not only high-quality uninterrupted audio and video communication but also the protection of personal data and the confidentiality of conference calls held on the respective platform (Osina et al., 2021). Of course, these steps cannot be taken in the absence of adequate funding.

In Russia, as the epidemiological situation worsened, new restrictions were introduced, which were accompanied by the adoption of appropriate sets of measures to support the people and business community. Changes in legislation gradually became quite significant, which, in turn, inevitably led to a changed shape in the Russian legal system. In particular, major changes have been introduced into the Russian tax system, in which the problems of ensuring a balance between public and private interests have become even more severe. The active involvement of tax mechanisms in solving economic problems does not cause much surprise, since taxes are the main source of budget revenues. However, in Russia, the increased attention to the sphere of taxation is probably caused by the political situation: since January 2020, Mikhail Mishustin, who previously held the position of the Head of the Federal Tax Service of Russia, has served as the Prime Minister of the Russian Federation. In this chapter, we will examine the main changes that have occurred in the legal system of Russia and which are aimed at reviving the Russian economy after the coronavirus pandemic.

Methodology

This study is based on an analysis of an extensive legal framework: in particular, Federal Law No. 98-FZ of 01.04.2020 “On Amendments to Certain Legislative Acts of the Russian Federation on the Prevention and

Elimination of Emergencies"; two decrees of the Government of the Russian Federation of 02.04.2020 (No. 409 "On Measures to Ensure Sustainable Development of the Economy" and No. 410 "On Approval of the Rules for Granting Subsidies from the Federal Budget to Russian Credit Institutions in 2020 to Ensure Deferred Payment of Loans Issued to Small and Medium-Sized Businesses"); the Decree of the Government of the Russian Federation of 24.04.2020 No. 576 "On the Approval of the Rules for Granting Subsidies from the Federal Budget to Small and Medium-Sized Businesses Operating in the Sectors of the Russian Economy in 2020 That are Most Affected by the Deterioration of the Situation as a Result of the Spread of a New Coronavirus Infection"; and other such new laws were carefully studied.

In the practical part of this chapter, the authors focused on law enforcement and, in particular, court practices developed regarding the application of legislation and measures to counter further spread of COVID-19 (e.g., a recent review of court practice of the Presidium of the Supreme Court of the Russian Federation in 2020–2021), as well as the consequences of the pandemic.

The authors also analyzed OECD materials and various papers by Russian and foreign authors (both in Russian and in foreign languages). Some previous works by the authors of this chapter also served as the theoretical basis of this study.

Research methods include not only methods of formal logic, but also special legal methodology (formal legal and comparative legal methods). The team of authors also used the critical-legal method (Malinovsky, 2016) in order to critically evaluate the ongoing changes and assess innovations in terms of their potential ability to positively affect the recovery and revival of the Russian economy during and after the COVID-19 pandemic. In the process of preparing the study, a significant amount of information was obtained from different legal research services, such as ConsultantPlus, Garant, and Westlaw Classic.

Results

Over the past period, due to the pandemic, a significant number of regulatory legal acts have been adopted aimed at adjusting tax, labor, administrative, bankruptcy, trade, and other branches of legislation affecting various legal aspects of doing business during and after the COVID-19 pandemic.

Among such sources, there are fundamental legal acts, including Federal Law No. 98-FZ of 01.04.2020 "On Amendments to Certain Legislative Acts of the Russian Federation on the Prevention and Elimination of Emergencies" and Decree of the Government of the Russian Federation of 02.04.2020 No. 409 "On Measures to Ensure Sustainable Economic Development", providing for a number of measures to reduce negative consequences and support business in Russia. These are provisions concerning a significant change in circumstances, force majeure, and an emergency regime, the procedure for fulfilling contractual obligations, state support for tenants and landlords, audits and inspections of small and medium-sized businesses, the introduction of a moratorium on bankruptcy, accelerated registration and wholesale of medicines, and new aspects of administrative and criminal prosecution. A special law on the protection and promotion of investment in Russia came into force, which banned the deterioration of conditions for private and public investment projects (Malinovsky et al., 2021).

Certain changes in legislation directly affected the Russian tax system and led (or will lead in the future) to large-scale institutional changes in the relevant area. The measures taken in the tax area can be conditionally divided into two groups:

(1) directly related to the COVID-19 pandemic / announced along with other restrictive measures and measures to support the people and businesses (revision of double tax treaties in terms of raising withholding tax rate for interest and dividends, introducing a tax on fixed profits of CFCs, as well as the actual transition to a progressive scale of taxation of individuals);
(2) not formally related to the pandemic, but potentially having the opportunity to positively affect the revival of the Russian economy after a pandemic (changing the model of tax administration of individuals with annual incomes over 500 million rubles, revising double tax treaties regarding the implementation of the provisions of Multilateral Convention to Implement Tax Treaty Related Measures to Prevent BEPS, etc.).

Taxes are the main source of budget revenues for any country, including Russia. For this reason, tax compliance aspects have become extremely important (Ovcharova et al., 2019). The problem of effective

tax collection is one of the key issues in tax administration. The objective impossibility of taxpayers to continue to pay taxes at the same level due to the COVID-19 pandemic and the subsequent tense economic situation made the state urgently take a number of measures aimed at stabilizing the economic situation through tax mechanisms. Taxes have two main functions—fiscal and regulatory—and priority is always given to the fiscal one, since the main purpose of taxes is to accumulate funds in the budget, but not to force taxpayers to stick to a certain model of behavior (Pepeliaev, 2015). Nevertheless, the importance of the regulatory function of the tax increased, since the state realized that failure to provide timely assistance to taxpayers, including through tax incentives, may lead to massive bankruptcies, a decrease in the number of taxpayers, and a reduction in tax revenues in quite a short-term perspective. However, these support measures were accompanied by significant budget expenditures. To at least partially cover expenditures, three changes were announced for the Russian tax system: (1) the revision of double tax treaties; (2) a transition to a progressive scale of taxation of individuals; and (3) the introduction of a tax on fixed profits of controlled foreign companies.

The revision of double taxtreaties involving Russia is a necessary step to increase tax revenues by raising withholding tax in Russia. This measure was announced by the Russian President Vladimir Putin as part of his address to the Nation on March 25, 2020 (Putin, 2020). The main goal is to prevent taxation of dividends and interest paid abroad, including through conduit companies to offshore jurisdictions, at a reduced rate. Previously, this was possible because a 5% rate could apply upon fulfillment of both the investment and the beneficial ownership criteria (Gidirim, 2014).

In times of financial crisis, funds are rapidly withdrawn from the country to offshore jurisdictions. Therefore, the revision of double tax treaties is intended to consolidate the status quo, prevent the withdrawal of funds from the Russian economy, and (if the decision to withdraw funds is nevertheless made) to help the source country to withhold its fair share.

Since 2021, Russia has also introduced *a progressive scale of taxation of individuals* (Federal Law of 23.11.2020 No. 372-FZ "On Amendments to Part Two of the Tax Code of the Russian Federation regarding the taxation of personal income exceeding 5 million rubles for the tax period"). Until 2021, a flat taxation scale had long been used, which led to a simplification of tax administration and a simultaneous increase in

inequality between citizens (James, 2008). The increased rate affected a small number of taxpayers (only those whose annual incomes exceed 5 million rubles). It is planned that an additional 2% of income exceeding 5 million rubles will be spent on the treatment of children with orphan diseases. Meanwhile, in the Tax Code of the Russian Federation, there is no mention of the specific purpose of the additional tax. This measure can potentially be used as the first step towards the transition to a full-fledged progressive scale (with a large number of rate schedules). With the gradual introduction of a progressive scale, the potential discontent of taxpayers will be minimized, since the rule "the higher the income, the higher the tax" will no longer be new to them.

During the pandemic, the policy of the Russian Federation has also changed with respect to controlled foreign companies. Accordingly, since 2021, controlling individuals have the opportunity to pay tax on the fixed profits of a *controlled foreign company* (Federal Law of 09.11.2020 No. 368-FZ "On Amendments to Parts One and Two of the Tax Code of the Russian Federation"). As a result, there is a significant simplification of tax administration (with guaranteed tax revenues of about 5 million rubles from each individual—controlling person), since there is no need to submit documents confirming the CFC's profits.

Another measure not directly related to COVID-19 yet certainly aimed at improving the quality of tax administration and the level of compliance (and, therefore, tax collections) was the establishment of a specialized tax inspectorate for tax administration of the largest individual taxpayers, taking effect from 01.02.2021, the first such an inspectorate in Russian history. This inspectorate shall administer taxpayers with an annual income of more than 500 million rubles. While determining the income of such individuals, state authorities should consider the existence of controlled foreign companies, international transactions, and accounts in foreign financial institutions, as well as other taxable events (Gordeev & Tkachev, 2021).

In conclusion, it is also worth highlighting a package of measures to address the base erosion and profit shifting by OECD (OECD, 2015). Even though Russia is not an OECD member, it actively supports measures aimed at combating tax avoidance and abuse.

Discussion

Tax on fixed profits of a controlled foreign company seems to be rather controversial. On the one hand, the state receives a guaranteed tax, spending minimum resources, but on the other hand, it loses the opportunity not only to receive tax on the real profits of the CFC (which could potentially be more than 5 million rubles a year), but even to receive up-to-date information about such profits. As for taxpayers, the situation is also vague: along with the simplification of tax administration, there are also economic risks of irrationality of choosing the specified tax regime (if the CFC's profit is less than 38 million rubles).

With regard to such a measure as the establishment of a tax inspectorate for the largest individual taxpayers, we believe that there is a clear opportunity of increasing tax collections due to improving the quality and efficiency of tax administration, and not only because of a simple increase in taxes for the relevant category of persons, as this category of taxpayers has many opportunities to employ tax optimization schemes with the help of tax consultants. For example, large assets of Russian high net-worth individuals are often stored in various foreign structures such as trusts or private foundations (Kanashevsky, 2018; Stein, 2000). Obviously, one of the tasks of the tax inspectorate will be the identification and evaluation of such assets, including through the international exchange of information mechanism.

Next, one should turn to the controversial court practice on the application of various novelties in legislation aimed at combating the negative consequences of coronavirus restrictions for the Russian economy. An important role in this aspect was played by the Presidium of the Supreme Court of the Russian Federation, which in 2020–2021 released a series of reviews on certain issues of court practice related to the application of legislation and measures to counter the spread of a new coronavirus infection in the territory of the Russian Federation: reviews No. 1 of 21.04.2020, No. 2 of 30.04.2020, and No. 3 of 17.02.2021.

In these reviews, important clarifications were formulated on certain issues of trade, consumer, tax, and other legislation. The Supreme Court of the Russian Federation recommended to the lower courts not to exclude the possibility of changing or terminating commercial contracts due to the epidemiological situation, restrictive measures, or self-isolation regime, if it can be treated by the court as a significant change in circumstances. At the same time, a change in the contract due to a significant

change in circumstances at the request of one of the parties is possible only in exceptional cases (Article 451 of the Civil Code of the Russian Federation; question 8 of the Survey of the Supreme Court No. 1). In addition to this, the courts received the right to recognize the coronavirus as a ground for exemption from liability (clause 3 of Article 401 of the Civil Code of the Russian Federation) if the party proves that it did not fulfill the obligation due to adverse financial consequences caused by restrictive measures that a reasonable person, carrying out similar activities, could not have avoided.

With regard to the calculation of time limits in the context of the pandemic, it was recommended that the courts should satisfy requests for the restoration of the missed procedural time limit if it was missed due to COVID-19 or due to non-performance of actions during non-working days.

In accordance with the Decree of the Government of the Russian Federation of 02.04.2020 No. 409 "On Measures to Ensure the Sustainable Development of the Economy", the deadlines for the payment of taxes, fees, and advance payments for a number of taxpayers—both organizations and individual entrepreneurs—have been extended. If a regulatory legal act of a constituent entity of the Russian Federation does not allow extending the deadline for paying tax and/or an advance payment for taxpayers who are individuals, the spread of a new coronavirus infection in itself is not a reason for postponing the deadline for fulfilling the obligation to pay mandatory payments and exemption from payment of penalties for the relevant period of delay.

In many areas of Russian business, pandemic-related restrictions have aggravated the situation with the performance of existing contracts, some of which have become simply impossible or even illegal to perform and enforce. In such a situation, the state provided businesses with the opportunity to refer to the respective circumstances (in particular, in the field of lease relations). In other cases, entrepreneurs received the right to indicate coronavirus infection as a basis for changing or terminating an agreement due to a "significant change in circumstances", force majeure, or an act of a state body (Article 451, 401, 417 of the Civil Code of the Russian Federation). Even though an emergency regime was not introduced in Russia, the Chamber of Commerce and Industry of the Russian Federation recognized the spread of coronavirus infection as a force majeure circumstance.

A controversial aspect of law enforcement practice on contractual obligations is the need to prove the nexus between the current situation and the pandemic, with the impossibility of fulfilling contracts (COVID-19: Overview, 2021). With regard to justifying using the clause "significant change of circumstances" (due to the coronavirus pandemic), it should be borne in mind that it does not automatically provide the right not to fulfill the obligation and does not relieve the party from liability, but only gives it the right to demand from the other party to terminate or amend the contract.

In practice, a broad discussion among law enforcers and ordinary citizens was caused by the approval of Decree No. 1073 "Regulation on features for execution and termination of the agreement on the sale of a tourist product, concluded until March 31, 2020 inclusive, by a tour operator operating in the field of domestic tourism and (or) inbound tourism in 2020 and 2021". As a result of its implementation, the funds of citizens who planned their trips were "frozen" for a long time. Locally, a contradictory practice of applying the above regulation began to develop (COVID-19: Overview, 2021), including referring to the fact that it contradicts the Civil Code of the Russian Federation and the Law of the Russian Federation of 07.02.1992, No. 2300-I "On protection of consumer rights". Such conclusions were based on an incorrect interpretation, which was repeatedly emphasized by the Supreme Court of the Russian Federation (for example, the decision of the Supreme Court of the Russian Federation of September 30, 2020 in case No. AKPI20-521 and of December 9, 2020 in case No. AKPI20-630).

The tour operator may be exempted from the obligation to pay compensation for non-pecuniary damage and a consumer fine if the violation of the main obligation (cancellation of the tour) was due to coronavirus (Determination of the Eighth Court of Cassation of General Jurisdiction of January 27, 2021 in case No. 88–1555/2021).

The mechanism of a moratorium on bankruptcy and the prohibition of inspections of small and medium-sized businesses have acquired particular relevance in terms of the application of novelties of "COVID legislation". The Government of the Russian Federation has exercised its right to declare a moratorium on the initiation of bankruptcy proceedings based on applications from creditors. In practice, this led to the fact that the possibility of foreclosure on the pledged property was "frozen" and all transactions on the disposal of the debtor's property made during the

moratorium, except for those concluded in the ordinary course of business and not exceeding 1% of the debtor's assets, were declared null and void. At the same time, the debtors themselves retained the right to file an application for bankruptcy during the period of the moratorium. Another protective mechanism for business entities was the suspension of all types of inspections and audits of their activities, with the exception of cases of harm or threats to the life and health of citizens, or of an emergency.

Conclusion

Thus, the conducted research allows for formulating a number of conclusions and raising questions for a critical rethinking of the accumulated practice of law enforcement.

1) The numerous regulatory legal acts and court decisions adopted by the Russian authorities in connection with the coronavirus pandemic in various sectors of the economy have led to innovative changes and new laws affecting a number of institutions, such as tax, civil, administrative, labor, and trade, among others. In general, the changes were dictated by the need for the Russian economy to undergo an early recovery after the pandemic.
2) In practical terms, these changes are proactively oriented to reduce the negative consequences of restrictive measures introduced due to COVID-19 pandemic. They serve as the basis for a significant transformation of the institutional framework in the relevant sectors of the Russian economy and law.
3) The current trend for the further deoffshorization of the Russian economy became even more apparent after series of measures, including the abolition of preferential WHT rates under double tax treaties with a number of jurisdictions.
4) The regulatory function of taxes has become more impressive in the age of COVID-19, since the Russian government has decided to provide tax incentives in order to prevent massive bankruptcy.
5) The introduction of a tax on fixed profits of controlled foreign companies is assessed as an ambiguous novelty, since, on the one hand, this measure helps to raised guaranteed revenue, but, on the other hand, the economic effect of this regime is disputable.

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CHAPTER 6

Interaction of the State and Business at the Post-COVID Period

Julia M. Belyakova

Introduction

2020 will be inscribed in history as the year when a new coronavirus infection COVID- 2019 changed the economic landscape of the whole world. Since the World Health Organization recognized the coronavirus as a global pandemic in March 2020, COVID-19 has infected more than two hundred and sixty million people worldwide. The International Monetary Fund predicts the slowest economic growth in 60 years. Global growth, according to the forecast, will be 4.25% in 2021 and will slow down to 3.75% in 2022. Forecasts for 2021 and 2022 are higher than in the forecast of the International Monetary Fund in October 2020. The upward revision of the projections is based on measures aimed at additional budget support and the expected results of mass vaccination (IMF, 2021).

COVID-2019 slowed down the economic development of the Russian Federation as other countries too. According to open sources, as of April

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2021, about 4.6 million cases were registered in the Russian Federation (Kommersant, 2021). In addition to the detrimental effects on human health, the pandemic has dealt a double blow to the economy, not only by halting production but by reducing the volume of goods and services produced, and also by a significant drop in consumer demand, related to reduced income, significant restrictions on mobility and social distancing measures.

The relevance of the topic of interaction between the state and business in the post-COVID period in the Russian Federation is due only to economic realities, but also to the fact that COVID 2019 revealed "deep-rooted vulnerabilities" in infrastructure not only in the public health system, but also in other sectors of the economy.

The article is devoted to analysis:

- possible scenarios of pandemic development and their impact on the loss of private partners involved in public–private partnership projects;
- the effectiveness of state measures aimed at supporting the most vulnerable sectors of the economy, including participants in public–private partnership projects.

Methodology

The assessment of problems of interaction between the state and business in the post-coronavirus period could not be carried out on the basis of historical or statistical data, due to the lack of economic indicators and data necessary for the calculation in open sources. The author chose a mixed method of collecting information, including the balance sheets of infrastructure companies (SPARK system, 2021), as well as one of the qualitative methods of calculating prerequisites and risks, based on the method of expert assessments. This method, based on surveys of specially selected analysts at different directions, well informed about the specifics of the problem under consideration, allowed to generate the results presented in this article. The study was conducted by the author in 2020–2021 by interviewing a number of domestic specialists in the field of implementing projects based on public–private partnerships. The study focuses on the problems of the financial recovery of the private party in public–private partnership projects in the Russian Federation.

Results

Studies conducted in May 2020 operated on four possible scenarios for the development of the situation: favorable, realistic, pessimistic and moderately pessimistic. All scenarios were based on the same prerequisites with different degrees of possible implementation. So, in a favorable scenario, it was assumed that:

- the second wave of restrictive measures will not be introduced;
- the growth of the disease will stop both against the background of large-scale vaccination and against the background of a standard decline in diseases of this kind in the warm period of the year;
- the economy of the country will begin to recover smoothly and recover by the end of 2021.

In a realistic scenario, it was assumed that:

- the second wave of restrictive measures will be introduced, but will not be large-scale, and the restrictions themselves will be less severe;
- the growth of the disease will begin to decrease both against the background of large-scale vaccination and against the background of a standard decline in diseases of this kind both in the warm period of the year and due to the adaptive properties of the human body;
- the rate of change in the country's economic indicators will no longer show negative values and will recover by the end of 2022.

In a moderate-pessimistic scenario, it was assumed that:

- the second and third wave of restrictive measures will be introduced;
- the growth of the disease will slow down its pace against the background of vaccination, while isolated cases of virus mutation will be observed;
- the growth rate of the country's economic indicators will recover by the end of 2023.

In the pessimistic scenario, it was assumed that:

- the second and third wave of restrictive measures will be introduced;

- the growth of the disease will not slow down its pace, and the virus will actively mutate;
- the growth rate of the country's economic indicators will recover by the end of 2025.

The data obtained by the author were close to the results of one of the leading analytical centers in the field of infrastructure projects (InfraOne Research., 2021). According to analysts of InfraOne Research, the total loss in the revenue of infrastructure companies from the pandemic at the end of 2020 amounted to almost 1.93 trillion rubles, which averaged 12.8% their annual revenue, or was equivalent to its absence for a month and a half. Almost 55% of this amount fell on the duration of the regime of the most severe restrictions in most Russian regions, which lasted from mid-March to the end of June. We estimated the annual revenue in each industry based on data on the financial performance of profile companies for 2019 in the SPARK system. The forecast for 2020 was made taking into account information from sectoral ministries, associations and companies themselves. The sources of data on the fall or increase in demand were official publications of federal and regional authorities, Federal State Statistic Service of the Russian Federation (Rosstat), reports of specialized companies and associations (Osipov et al., 2020; Yankovskaya ey al., 2020). The point of reference for losses in each case was the beginning of the suspension or restriction of the activities of a particular industry. If any case was not restricted and suspended, but the work of specialized companies was noticeably influenced by the self-isolation regime, then the "countdown" of losses was carried out from the moment of its introduction until the moment of withdrawal (InfraOne Research, 2021).

As for April 2021, it is clear that the moderate-pessimistic scenario is being implemented. So, taking into account the implementation of the second wave of restrictions, the mutation of the virus and the rate of vaccination in the Russian Federation, on the author's assumptions, taking into account qualitative estimates of analysts participating in the survey, and based on the data of the SPARK System on the results of the balance sheets of companies for 2020, financial losses in the revenue of infrastructure companies in 2021 will slow down and nevertheless amount to about 2.7 trillion rubles, taking into account the summation of losses according to the results of 2020.

It is worth mentioning that one of the most affected industries in the period 2020–2021 was social infrastructure. According to the Spark System, on average, a company representing services in the field of culture and sports has lost at least 30 percent of annual revenue. At the same time, in some regions, losses amounted to 60% of annual revenue.

The results of qualitative assessments are presented in Fig. 6.1, taking into account the actual indicators of 2020 and the estimated values of 2021. The diagram was developed by the author taking into account the data of the Spark system (SPARK system, 2021) and the analytical data of the report of LLC "First Infrastructure" (InfraOne Research, 2021).

It is advisable to note that the largest losses in revenue are observed in the field of culture and sports. Various sources of information indicate that losses amounted to at least 58–60% in annual terms. Specialists working in this area are waiting for a loss in revenue and according to the results of 2021 at least 35%, since it was from the sports and cultural infrastructure that restrictions were removed later than all other objects. Also, in the Russian Federation, as of April 2021, there is a requirement for a social distance, which leads to a loss in occupancy. So, in the field of cultural events in Moscow from November 2020, the Mayor's Decree was

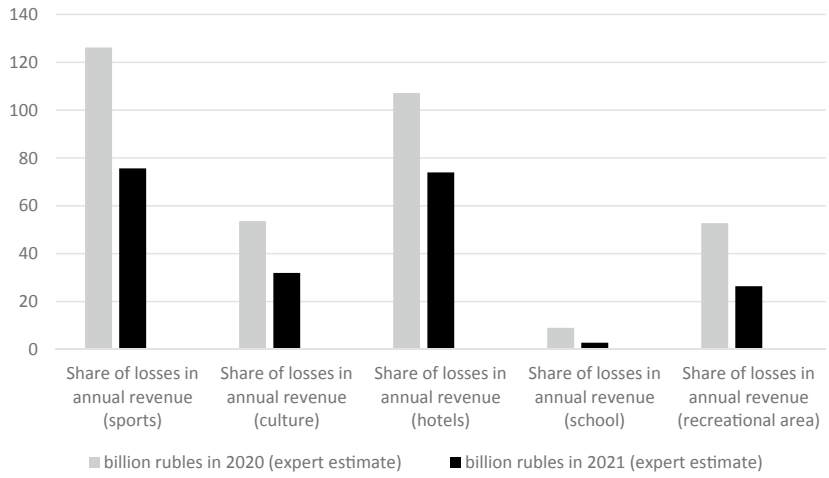

Fig. 6.1 Indicators of revenue losses of social infrastructure companies in 2020–2021 (*Source* Created by author on the basis of InfraOne Research [2021] and SPARK system [2021])

in force that occupancy should not exceed 25% of the total capacity.[1] In January 2021, Moscow was allowed to increase occupancy to 50%. Other large cities of the Russian Federation used restrictions differently, since the authorities of Novosibirsk and Yekaterinburg limited the occupancy of halls and cultural events to 50% of the threshold initially.

St. Petersburg closed the possibility of visiting all museums and other infrastructure facilities only for the period from January 1 to 11, 2021. According to a survey of specialists in Moscow, fitness centers say that the industry not only lost in revenue, but also had to completely restructure the provision of services. These changes, according to experts in this area, led to the fact that the industry, at least until 2023, will not be able to show curious indicators in revenue (Osipov, 2020; Salikhov, 2020).

However, the paid medical services industry, despite the indicators in revenue loss according to the SPARK system in the first and second quarter of 2020, shows steady growth, and according to analysts, according to the results of 2021, it will show results higher than those before the pandemic period. So, objects of paid infrastructure, which lost about 20% during the spring restrictions of 2020, by the end of the year reduced the loss indicators to 10–15%, and in some areas, including in the field of diagnosis and provision of stationary services, showed a steady increase in financial indicators, which was associated with an increase in the cost of services from 30 to 100%. Analysts say that hospitals could also receive additional revenue due to the need to conduct a large number of COVID-19 tests (the volume of this market is approximately 12–14 billion rubles per month) (InfraOne Research, 2021). The least affected in 2020 was the field of preschool, school and university education, including paid education. Despite losses of about 20 billion rubles (InfraOne Research, 2021), this area is not a strong concern that even with the increase in the cost of paid school and university tuition, it is not possible to take advantage of the alternative due to restrictions on movement.

[1] Decree of the Mayor «On amending the Decree of the Mayor of Moscow from June 8, 2020 No. 68-UM», 10. 2020 No. 107-UM.

Discussion

The Government of the Russian Federation, aware of the need to support both infrastructure companies and social infrastructure, within the framework of the National Action Plan[2] takes certain address steps.

The May Resolutions of the Government introduced a mechanism for preferential lending to the most affected areas of activity. Thus, borrowed bank loans under preferential conditions will be able to receive the most affected industries and socially oriented non-profit organizations. Except for a preferential increased rate of 2% on borrowed obligations. Companies that have fulfilled a number of mandatory conditions, including maintaining 90% of jobs, will not repay loans at all, the state will do this for them, while maintaining jobs at 80% of the indicators of the beginning of the pandemic period—only 50% of loans and interest on them will have to be repaid. According to the Ministry of Finance for the summer of 2020, 5.7 billion rubles will be allocated for the falling revenues of the banking sector from preferential lending. The effect of this measure will be observed only in the balance sheets of companies for 2021, since the write-off of loans provided began only in 2021.

The government provided for measures related to the extension of tax payments for small and medium-sized businesses.[3] The Government has provided for measures never before applied to the fiscal burden related:

- extension of taxes for small and medium-sized businesses.
- reducing the tax burden within the framework of employers' contributions from the accrued wage fund to social and pension funds;
- prohibition of on-site tax inspections of commercial and socially oriented structures;
- prohibition on cancellation of tax debt from accounts of companies with licenses for medical and educational activities;

[2] The Government of Russian Federation. 2020. "Meeting of the Government of the Russian Federation. 'A national plan of action for the restoration of employment and income, economic growth and long-term structural changes in the economy'. Protocol of the Government of the Russian Federation No. 36, Moscow, October 2020". https://www.garant.ru/products/ipo/prime/doc/74678576/#review.

[3] Decree of the Government of the Russian Federation "On Approval of the Rules for Granting Subsidies from the Federal Budget to Russian Credit Organizations for Reimbursement of Lost Income on Loans Issued in 2020 to Legal Entities and Individual Entrepreneurs for the Resumption of Activity" dated May 16, 2020 N 696.

– increased deadlines for sending tax claims up to 6 months.

The moratorium, introduced in the spring of 2020 on the bankruptcy of enterprises from the most affected areas of the economy, was extended for 6 months until January 2021.

So, from January 2021, "Rules for the provision of subsidies from the federal budget to Russian banks for the reimbursement of lost income on loans issued for the implementation of investment projects in the field of social services of the population".[4]

The main purpose of these rules is to provide subsidies that will compensate for the losses of banks from lending to social sector companies in the framework of their investment projects. The rules provide the possibility of compensating banks for so-called "lost income" as part of their participation in the provision of preferential loans to socially significant investment projects. The benefit is granted for the difference between the rate calculated excluding the subsidy and the key rate of the Bank of Russia (Bank of Russia, 2021). The rules introduce restrictions on the timing of the provision of credit funds, limit the goals of obtaining a loan and also contain requirements not only for the credit institution itself, but also for the credit agreement signed as part of the project under implementation.

An analysis of the rules showed that the previous subsidy mechanisms made it possible to receive a subsidy directly to the budgets of the constituent entities of the Russian Federation. The subsidy was provided for reimbursement of interest costs in the framework of loans received by legal entities in commercial banks and the state corporation"VEB.RF" in the implementation of investment programs in the field of social services. Subsidies were provided to co-finance expenses of the constituent entities of the Russian Federation related to reimbursement of expenses incurred under all forms of public–private partnership, the preferential rate cannot exceed 4% per annum.

[4] The Government of Russian Federation. 2020. "Decree of the Government of the Russian Federation 'On Approval of the Rules for Granting Subsidies from the Federal Budget to Russian Credit Organizations for Reimbursement of Lost Income on Loans for the Implementation of Investment Projects in the Field of Social Services of the Population and Recognition of Certain Provisions of Certain Acts of the Government of the Russian Federation as Invalid', Moscow, December 31, 2020, N 2390".

The main change in the new mechanism for subsidizing loans in projects related to social services of the population is the change in the targeted recipient of the subsidy, when a financing bank is subsidized instead of a subject of the Russian Federation. Thus, not only the process of issuing a subsidy was simplified (a number of regional acts had to be adopted under the old mechanism), but also the approach was changed, in which the final beneficiary wins, who has the right to apply for this measure of state support even if there is no payment from a state partner, within the framework of the project being implemented. In addition, both the time previously spent on the grant and some reduction in the transaction costs of all stakeholders are positive.

The place allocated to financing banks that will provide concessional financing can be considered controversial. They will be forced to control not only the project implementation process, but also the activities of the project company, which is a party to the public–private partnership agreement in the framework of its social services.

At the same time, as one market expert notes: "the rules do not imply a mechanism for protecting a private partner in the event of a reduction in the size or termination of the payment of a subsidy to a financing bank" (Kachkin, 2021). A private partner should provide for ways to reduce this risk when drawing up an agreement within the framework of a public–private partnership project, including a description of the so-called "special circumstance" associated with the termination or change in the terms of granting a subsidy to a financing bank. "Risk reallocation can be achieved through the inclusion in the agreement of a condition for compensation by a public party of expenses to a private party as part of the payment of interest on borrowed investments" (Kachkin, 2021). It is also necessary to remember that it is possible to receive a subsidy only within the framework of loan agreements concluded for a period of 10 years, and the preferential rate cannot exceed 4% per annum.

Conclusion

The world community, and the Russian Federation in particular, does not fully understand the social problems and depth of economic losses caused by the pandemic. The Post-COVID period will be characterized by increasing social tensions, a series of bankruptcy of both individuals and legal entities associated with the restrictions imposed by all countries during the pandemic.

The importance of supporting and even more productive interaction between the state and business is confirmed by changes in regulatory and legislative acts of the Russian Federation aimed at supporting socially significant areas of the economy.

Funds provided as part of concessional lending in fact cost at least 3–4% per annum.

Restrictions imposed on field inspections of commercial structures of various kinds by state bodies can show the opposite effect associated with an increase in the inspection plan for 2021–2022, which can lead to business losses associated with administrative fines.

A significant factor is that support was not provided to all sectors of the economy or to small and medium-sized businesses, but only to those whom the Government considered the most affected. In fact, it turned out that big business and state corporations received the greatest support from the state (Osipov, 2021).

Regarding the moratorium on bankruptcy, all analysts and specialists are waiting for the avalanche-like effect of bankruptcy, especially small and medium-sized businesses. The situation is complicated by the fact that under the moratorium in force since the spring of 2020, the law (Federal Law 127) did not prohibit suing for debt collection. All this aggravated the depth of the crisis, influenced payment indicators in general, and also increased the burden on the judicial system of the Russian Federation (Tsareva, 2020; Yankovskaya et al. 2020). Thus, according to data from various sources, the timing of the consideration of cases in the courts increased by an average of 6–8 months.

Of course, changing the rules for the provision of subsidies in the framework of investment projects in the social sphere should change the level of investment attractiveness of projects and attract private investors to such an important area for the state to support the most vulnerable segments of the population in the future, although so far there is no necessary effect.

The results of 2020, which are already recorded by statistics, indicate that all the measures taken did not give the expected effect. According to the Federal Tax Service of Russia, the number of commercial organizations in the Russian Federation decreased by more than 25%, if we talk about closure statistics related to COVID 2019, then the figure for reductions is about 10% (calculation was made by clearing statistics data from companies closed due to the usual actions of the supervisory authority in the form of deleting data on companies not operating for more than three

years from the register, etc.). The number of individual entrepreneurs decreased for 8 months of 2020 by 109 thousand people (4%), for the whole of 2020 a reduction of about 9% is recorded (Federal Tax Service 2021).

Thus, the actions that the Government of the Russian Federation needs to take, in addition to those already taken, to change those economic consequences of both social and economic nature related to the consequences of COVID 2019 are:

- complete elimination of taxes deducted by employers from employee salaries to social and pension funds in the amount of up to 50,000 rubles per month, provided that the company employs no more than 10 people, and the abolition of taxes deducted by employers from employee salaries to social and pension funds in the amount of up to 100,000 rubles per month, provided that the company employs no more than 10 people, four of whom are disabled, and the salary fund is distributed evenly to all employees with a deviation of not more than 20% to the management;
- reduction of reporting forms to 5 per year (currently, for example, a non-profit organization submits more than 50 reports per year to various government bodies) handed over by commercial and non-profit organizations to various supervisory bodies, provided that the company is included in the register of small and medium-sized enterprises and/or the company's turnover does not exceed 100 million rubles per year, and the number of employees does not exceed 10 people;
- complete abolition of personal income tax from wages not exceeding the minimum subsistence level of the region.
- introduction of a regression tax scale on personal income, only if the previous paragraph is fulfilled.

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CHAPTER 7

Digital Economy Issues and International Legal Protection of the Environment in Relation to COVID-19

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Introduction

Consensus on the adoption of the global concept of sustainable development was finally reached at the World Summit on Sustainable Development in September 2002 in Johannesburg (South Africa). During the global economic and financial crisis of 2008–2009, the United Nations

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(UN) specifically put forward the Global Green Economy Initiative to address it.[1] The discussion of the Fourth Industrial Revolution led to the creation of a digital economy in a closed-loop economy (circular, cyclical economy) (Schwab, 2016).

The First Industrial Revolution began in the second half of the eighteenth century, when it became possible to switch from manual production to machines with the help of water and steam. The Second Industrial Revolution was characterized by the development of mass conveyor production associated with the development of electricity. Having begun in the second half of the last century, we are living in the era of the Third Industrial (or digital) Revolution, with the creation of digital computers and the subsequent evolution of information technology. Now, this is gradually transforming into the Fourth Industrial Revolution, which is characterized by merging technologies and blurring the lines between the physical, digital, and biological spheres. This is how it is described by Klaus Schwab, the founder and chairman of the World Economic Forum.

The concept of the Fourth Industrial Revolution, or "Industry 4.0", was first formulated at the Hanover Exhibition in 2011, defining it as the introduction of "cyber-physical systems" in factory processes. It is assumed that these systems will be combined into a single network, communicate with each other in real time, be self-tuned, and learn new behaviors. Such networks will be able to build production with fewer errors, interact with the products produced, and, if necessary, adapt to the new needs of consumers. For example, the product in its manufacturing will be able to determine the equipment that can produce it. All its work will be in a completely offline mode, without human intervention.[2]

Throughout history, another priority for society has been to fight infectious disease that burst state boundaries. Recently, the COVID-19 pandemics provided such a challenge, affecting more than 50 million.

The COVID-19 pandemic is a particular and immediate concern in regard to UN sustainable development (SDG) -3 (Good Health and Wellbeing), with implications for all of the UN SDGs up to 2030.

[1] UNEP. Global Green New Deal. 2009. URL: https://wedocs.unep.org/rest/bitstreams/11748/retrieve.

[2] Furfur. The Fourth Industrial Revolution: the Internet of Things, Circular Economy and blockchain. 2016. http://www.furfur.me/furfur/changes/changes/216447-4-aya-promyshlennaya-revolyutsiya.

Thus, if the automation of production, which began in the middle of the twentieth century, had a narrow specialization, in which control systems were developed for each sphere and enterprise separately and did not scale up, then the new technological revolution will be based on the development of global industrial networks.

Firstly, the biosphere must be open to the Big Data of the digital economy, the Internet of Things, information and communication technologies (ICTs), and the processing of analytical data using the systems paradigm. Secondly, the closed cycle economics leads to a reduction in land pollution and fragmentation, especially during transportation (switching to electric vehicles and unmanned aerial vehicles), as well as from overhead and ground-based local power lines. In addition, new "smart" cities often use a concentrated approach that does not require large areas that are open to the development of biodiversity. The aforementioned features of the Fourth Industrial Revolution mitigate the impact on the biodiversity of the Anthropocene. Thirdly, in recent decades, the long-term pressures of developed countries on the biodiversity of developing countries to ensure their food security, along with climate change, have made the world less "full" (i.e., more "green" and water-filled), rather than more "full", as noted in a recent report to the Club of Rome (von Weizslcker & Wijkman, 2018). Finally, the digital economy opens a new path for worldwide monitoring of biodiversity at the local, regional, national, transboundary, and global levels.

In 2017, the President of the Russian Federation endorsed a Strategy for Developing an Information Society in the Russian Federation for 2017–2030 that aims at the creation of conditions for the society of knowledge, improving the wellbeing and quality of life of citizens by increasing the availability and quality of goods and services produced in the digital economy using modern digital technologies, raising awareness and digital literacy, and improving the availability and quality of public services for citizens as well as security, both within the country and abroad.

The closed cycle economics paradigm is attracting increasing attention from academia and practitioners as a means to promote sustainability. Recent studies show that applying the closed cycle economics principles

can increase Europe's GDP by 11%, with a net benefit of about USD 1.8 trillion euros by 2030 and material cost savings of up to USD 1 trillion.[3]

In general, closed cycle economics contrasts with the linear economy, where products are made from raw materials, sold to consumers, and then disposed of as waste after they are used.

Methodology

The methodological basis of this article is based on the methods of scientific cognition, which make it possible to systematically and logically study the relationship, interdependence, and interdependence between the subjects focused upon, both at the theoretical (comparative legal, formal legal methods, analysis, synthesis, induction, deduction, and others) and at the empirical level (statistical analysis, research of normative legal acts and doctrine). Some authors made significant contribution into digital law development: we would like to note Inozemtsev (2020), Osipov (2020a, 2020b), Osipov (2021), Osipov and Roncevic (2021), Sidorenko and von Arx (2020), Shashkova et al. (2020), and Yankovskaya et al. (2021), among others. Following comparative analysis rules, we evaluate the contribution of scientists in our research too.

Results

New developments have taken place in recent years. In international relations, the following terms are proposed: digital economy, (circular) closed cycle economy, and access to biodiversity.

Although the decline in transport and industrial activity as a result of the COVID-19 pandemic has resulted in documented reductions in air and water pollution, as well as likely reductions in noise and light pollution, the impact of these changes on biodiversity is not yet known. While the overall policy response should take into account the need for a large-scale change in our economic model and our relationship with nature, a number of conservation measures should be considered to reduce the likelihood of pathogen transmission from wildlife to humans.

[3] Towards a circular economy. Waste management in the EU. European Parliamentary Research. 2017. http://www.europarl.europa.eu/RegData/etudes/STUD/2017/581913/EPRS_STU%282017%29581913_EN.pdf.

The analysis of the latter type of economy in the world and for Russia has received coverage in recent publications (Pakhomova et al., 2017; Paramonova, 2016).

The linear models of production that were inherited from previous revolutions have many serious shortcomings and acquired environmental problems. The new industrial revolution is designed to correct the accumulated negative factors. One of the tools for addressing the problem of pollution and ensuring a stable ecological future is the closed-cycle economy, which involves the continuous turnover of technical and biological materials in the production and conservation of valuable natural resources. In this area, Chris Dedicot, Senior Vice President of the European company Cisco, draws attention to the opportunities that technological progress provides for the widespread introduction of the circular economy: The spread of the Internet of Things opens up opportunities for implementing circular innovations. Through the reduced cost of sensor technologies and the spread of networks, every component that enters the production process can be connected. The data that is collected through such connections makes it possible to find out the place of origin of the product, the method of production, and the amount of energy spent on its production. This data is at the heart of the circular economy. The information they provide enables businesses, cities, and entire countries to recover, create, and relocate these resources more efficiently.[4]

In 1992, the Convention on Biological Diversity was adopted in Rio de Janeiro.[5] The objectives to be pursued are: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits associated with the use of genetic resources, including through the provision of the necessary access to genetic resources and through the appropriate transfer of appropriate technologies, taking into account all rights to such resources and technologies, as well as through adequate financing (Point 1).

The Convention defines "biological diversity" as the variability of living organisms from all sources, including, but not limited to, terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of

[4] Chris Dedicott. https://blogs.cisco.com/author/chrisdedicoat.

[5] Convention on Biological Diversity (Rio de Janeiro, June 5, 1992).
International multilateral agreements with the participation of Russia. V. 2 vol. t. 1. Moscow: NIA-Priroda, 1998, p. 469.

which they are a part; this includes diversity within a species, between species, and ecosystem diversity, while "biological resources" includes genetic resources, organisms or parts thereof, populations, or any other biotic components of ecosystems of actual or potential utility or value to humanity.

"Biotechnology" means any type of technology involving the use of biological systems, living organisms, or their derivatives to manufacture or modify products or processes for their specific use.

It should also be noted that the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade highlights the harmful effects which certain hazardous chemicals and pesticides used in international trade have on health and the environment,[6] recalling the relevant provisions of the Rio Declaration on Environment and Development[7] and Chapter 19 of Agenda 21 on the environmentally sound management of toxic chemicals, including the prevention of illegal international trafficking in toxic and dangerous products.

The purpose of this Convention is to promote the common responsibility and joint efforts parties in international trade have regarding certain hazardous chemicals; these must be handled with care to protect human health and the environment from potentially harmful effects, and their environmentally sound use must be promoted by facilitating the exchange of information on their properties, establishing provisions for the implementation at the national level of the decision-making process concerning their import and export, and these decisions should be disseminated to the parties.

Further, given that persistent organic pollutants (POPS) pose a serious and increasing threat to human health and the environment, the Stockholm Convention on Persistent Organic Pollutants was adopted in 2001.[8]

[6] The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. 2011. No. 36. St. 5125.

[7] Rio de Janeiro Declaration on Environment and Development (Adopted in Rio de Janeiro on 14.06.1992).

Public international law. Collection of documents. Vol. 2.—M.: BEK, 1996. pp. 135–138.

[8] Stockholm Convention on Persistent Organic Pollutants (Stockholm, 22 May 2001). The document entered into force for Russia on November 15, 2011. The official UN publication in Russian. UNEP Division of Technology, Industry and Economics. 2001.

Its preamble notes that persistent organic pollutants have toxic properties, are resistant to decomposition, are bioaccumulative, are subject to transboundary transport by air, water, and migratory species, and are deposited at a great distance from the source of their release, accumulating in terrestrial and aquatic ecosystems.

The Convention notes that Arctic ecosystems and indigenous communities are particularly at risk as a result of bio-enhanced exposure to persistent organic pollutants, and that contamination of their traditional food products is a public health issue.

It should be noted that states, in accordance with the Charter of the United Nations (Kolosov & Krivchikova, 1996), as well as the generally accepted principles of international law,[9] have the sovereign right to develop their own resources in accordance with their environmental and development policies, and are responsible for ensuring that activities carried out within their jurisdiction or under their control do not cause damage to the environment of other states or areas not falling under their national jurisdiction.

The Convention recognizes the importance of developing and using environmentally sound alternative processes and chemicals.

Taking into account the precautionary principle enshrined in the Rio Declaration on Environment and Development (Principle 15), the purpose of the Convention, according to Article 1, is to protect human health and the environment from persistent organic pollutants.

To analyze the development of the digital economy in the Russian Federation (RF) in comparison with the countries of the European Union (EU) and some non-EU countries, it is also proposed to use the international I-DESI index, published by the European Commission in 2016 (International Digital Economy and Society Index). The main components of the I-DESI index are communication(s), human capital, the use of the Internet, the introduction of digital technologies in business, and digital services for the population. The I-DESI index uses data from various recognized international sources, such as the Organization for

[9] Declaration on Principles of International Law concerning Friendly.

Relations and Cooperation among States in accordance with the Charter of the United Nations, 24 October 1970.

Ibid., pp. 65–72; Final Act of the Conference on Security and Cooperation in Europe, 1 August 1975.

Ibid., pp. 73–76.

Economic Cooperation and Development (OECD), the United Nations (UN), the International Telecommunication Union (ITU), and others. To manage the development of the digital economy, a "road map" for 2018–2024 has been formed, which in the main areas includes a description of the goals, key milestones, and objectives of this Program, as well as the timing of their achievement.

Currently, economic growth in the world—and in Russia—continues mainly due to resource consumption. For example, only about 14% of the raw materials used in German industry are obtained after recycling. Efforts are being made to increase this proportion and use the waste more safely and environmentally.[10]

Discussions

The most recent industrial revolution, which began in the latter half of the last century with the creation of digital computers and the subsequent evolution of information technology, is still in progress. It is gradually transforming into the Fourth Industrial Revolution, which is characterized by the merging of technologies and the blurring of the lines between the physical, digital, and biological spheres.

It should be noted that the exponential growth of digital communications has had a huge impact on global society in the last decade. It is widely understood that these impacts—this increase in sociability and the technological innovations it creates—pushe the development of connections between people, products, and systems, which can create significant new sources of value for citizens and economies, while creating new challenges for regulators and those legislators who develop policies and draft regulations.

A sharp increase in the number of Internet users (doubling in OECD countries, with more than one and a half billion mobile users in China) and their access to cloud technologies leads to a significant reduction in the use of physical (produced) capital. By presenting a product in a digital format, waste can be reduced. In addition, digital technologies can contribute to new business models: by returning assets that have gone out of circulation to the market again, in order to generate income for the second, third, or even fourth time. For example, in the United States

[10] Circular Economy: Resource-efficient and digital. 2017.

alone, there are unused goods worth about $5 trillion: these may include cars that are on average parked for 90% of a normal day, clothes stored in closets, or power home devices that are used for about five minutes of their life.

The speed at which these digitally enabled businesses are taking advantage of these opportunities is astounding. Companies are creating online social networks that allow people to sell their unwanted clothes and earn tens of millions of dollars a few months after they open them. Thousands of firms are creating private social networks that allow neighbors to lend, borrow, buy, or sell things to each other. Because digital technology makes some physical products redundant and gives others a new lease of life later on, it also allows companies to manage and therefore reduce the amount of material resources they need as a way to create value for customers.

One of the most important approaches is in analytics. For example, in the United States, firms use sophisticated analytical methods and nutrient measurement techniques to grow crops indoors. At the same time, the yield of agricultural products increases by about 30 times. The effective use of the newly obtained data has effectively eliminated the need for soil and pesticides for growing crops and reduced water consumption by 90%.[11]

This combination of economic and environmental benefits in a closed-loop economy is set out in the sub-task "Greening the economy in line with the UN Sustainable Development Goals (SDGs)" of the European Commission's Horizon 2020 Framework Programme for Research and Innovation for 2014–2020.[12]

Actions in this part of the program are aimed in the medium term at significantly improving the efficiency of resource use (including energy and water), minimizing waste production, and increasing the use of recyclable materials, while avoiding adverse health effects, as well as reducing pollution and greenhouse gas emissions. They intend to increase the role of design in the durability of products, increase the ability of cities to use low-waste economies, and support the transition to systematic, integrated solutions that close resource cycles in the water sector.

[11] Circular Economy: Resource-efficient and digital. 2017.

[12] European Commission (2018). Horison 2020. http://ec.europa.eu/programmes/horizon2020/.

They will contribute to the implementation of the closed cycle economics Action Plan and the EU's key high-level priorities, including those related to jobs, growth and investment, climate and energy, as well as strengthening the industrial base and the UN Sustainable Development Goals (Goals 6, 11, 12, and 13[13]).

A circular economy, defined as an economy that seeks to maintain the value of products, materials, and resources in the economy for as long as possible—therefore helping to separate the growth of production, production, and consumption from the use of natural resources—promises significant economic, social, and environmental benefits that aim to minimize as much waste and waste resulting from production and consumption as possible. Material efficiency leads to environmental benefits for sustainable development. The circular economy also offers economic and social benefits. For products, added value is often created through services and digital solutions based on intelligence. The international community's intention to move towards a circular economy by 2030 is also reflected in the UN Sustainable Development Goals,[14] which seek to achieve a systemic shift in many interrelated areas, such as sustainable production and consumption (Goal 12), economic growth (Goal 8), climate action (Goal 13), and sustainable cities and communities (Goal 11); however, there aren't many such goals, yet the implementation of circular economy approaches will greatly help to achieve these goals.

The circular economy is a transformative agenda with significant potential for job creation and sustainable growth, driving sustainable consumption and production patterns. The transition to a circular economy gives Europe and its partners a chance to modernize the world's economy, making it more promising, environmentally friendly, and competitive. The transition to a circular economy requires a transformation of the systemic approach at the local, national, and international levels. No government, organization or business can manage these changes alone; rather, public and private sector stakeholders should work together to define and implement a common "circular" vision for transforming production and consumption patterns by organizing a process of collaborative and continuous experimentation, learning, adaptation, and scaling up efforts.

[13] United Nations (2018). The Sustainable Development Goals. https://www.un.org/sustainabledevelopment/ru/sustainable-development-goals.

[14] Ibid.

In 2015, the European Commission adopted an ambitious circular economy package to help European businesses and consumers make the transition to a stronger and more circular economy, where resources are used in an even more sustainable way. Circular economy actions will promote a "closed process" of product life cycles through greater recycling and reuse, and will benefit both the environment and the economy, contributing to the EU's efforts to create sustainable, low-carbon, resource-efficient, and competitive economies. The circular economy will play an important role in preventing climate change and driving the transition to renewable, green energy. The EU intends to become a leader in the circular economy, for which an Action Plan has been developed. Thus, it is necessary to work with partners to promote the adoption and implementation of approaches around the world.

The European Commission wants to expand its footprint in the western Balkans. Brussels hopes to add countries from the region to the bloc by 2021. The COVID-19 crisis has already curtailed global international travel demand and will lead to a collapse in tourism ahead of the summer season. Albania and Montenegro will be hit particularly hard, as tourism revenues exceed 20% of GDP in both economies (EBRD, 2020).

In the European strategy adopted in December 2015, the European Commission provided an action plan for the chain of the existing cycle from production to consumption, from consumption to waste, and from waste to production. It notes that innovation and technology can help to rethink existing models and processes.[15]

Although new technologies already exist, the most important part of them is missing: namely, joint innovation and cooperation. When different systems are not integrated, the data is not used at the level at which it can and should be used. For example, on an agricultural farm, digital milking or feeding systems may exist, but there are no interaction systems. As such, a method needs to be found to combine this data and enrich it to reach its full potential.[16]

Intellectual assets—key features of the Fourth Industrial Revolution—and how they can be combined with the principles of closed cycle

[15] Towards a closed-loop economy: a waste-free program for Europe. General Directorate for Environmental Protection, Minsk, October 8, 2014. URL: http://www.oecd.org/environment/outreach/EC_Circular%20econonomy_Rus.pdf.

[16] Natural Resources Institute, Finland (2016). On a digital road to circular economy. URL: https://www.luke.fi/en/on-a-digital-road-to-circular-economy/.

economics are an important contribution to the new economic agenda of the global community.

Perhaps the transition to closed cycle economics can only be successful if the EU can make the most of the digitalization supported by the EU's coherent policy framework.

Since value chains tend to spread across national borders, international legal cooperation is essential, especially on a global scale, which is consistent with the generally recognized principles and norms of international law and the UN Sustainable Development Goals.

As we approach the next decade, the prevalence of connectivity across the Internet of Things and the creation of "smart assets" will accelerate.

However, despite the growing interest in the digital economy and closed cycle economics, there is no clear definition of closed cycle economics yet. One can offer the following definition: closed cycle economics is "a restorative and regenerative system that aims to maintain products, services, components, and materials at the level of their highest utility and value".

In this way, a closed-loop economy (EOC) protects the environment, creates jobs, and makes the economy more sustainable and "green" or eco-oriented, while making businesses more competitive.

Conclusion

Further development of a sustainable, resource-efficient, and competitive economy requires a shift to a more cyclical economic model with products, processes, services, and business models that are designed to maintain the value and utility of materials and resources in the economy for as long as possible. Circular economic solutions must combine a strong environmental rationale with compelling business logic.

There are new business opportunities that are also more labor-intensive, which increases competitiveness and creates much-needed jobs.[17]

[17] An EU Action Plan on Circular Economy. 2015. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015DC0614.

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CHAPTER 8

Comparative Analysis of Transformation in Structure of Post-Soviet Country's Post-COVID Economy

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Introduction

The pattern of productive specialization is a determining factor of an economy's level of productivity and its possibilities for growth. Its importance is even greater in a context such as the current one, with increasing international economic integration and intensifying technological change.

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The ability to carry out the structural transformations imposed by the new circumstances related to the coronavirus crisis is a key factor in the success of any economy.

The pandemic of the new COVID-19 virus has spread throughout the planet in a matter of months and has become a serious threat to all of humanity. Measures to combat the spread of this virus resulted in stopping economic processes at the country level and made serious changes in the rhythm and way of life of all societies. According to the statistics of Federal State Healthcare Institution "Russian Research Anti-Plague Institute 'Microbe'", as of 20.02.2021, around the world the number of cases of infection was 110.7 million units or 1,447.3 cases per 100,000 population. Where the worst situation is observed in the region of the Americas with 2,605.0 cases per 100,000 population, while the weakest manifestation of the virus is detected in the African region, with 251.2 cases per 100,000 population. Among the post-Soviet countries, the most serious situation is observed in Georgia with 7,189.5 cases per 100,000 population and Lithuania with 6,915.9. In terms of deaths, however, Lithuania is "in the lead" with 112.7 cases per 100,000 population, followed by Armenia with 106.6 cases. In terms of the absolute numbers, the largest mortality is observed in Russia with 83,630 deaths from COVID-19, including about 350,000 excess deaths, which are also considered the consequences of the pandemic. Quite contrarily, the most optimistic situation is found in Turkmenistan, since, according to official authorities, there are no cases of contagion and death from coronavirus in the country.

Of course, the pandemic had a significant impact on all sectors of the economy, especially negatively, the results of which were a decrease in production (for example, in industry and construction) and services (for example, in hotel and restaurant businesses). However, the positive impact can be highlighted on the sectors of the economy related to the information technologies that in 2020 achieved significant progress. It is too early to say how much the proportions of economic activities in the economy have changed, since not all statistics have been collected and published, but judging by indirect indicators, the world is on the verge of transition to a digital economy, which means a complete change of economic dominants (Osipov, 2020, 2021). Thus, we can say that the topic of the Post-COVID economy is relevant, being in the mainstream of economic thought, which is the reason why the present team of authors turned to

assess the negative and positive impacts of the COVID-19 crisis on the transformation of the economic structure of post-Soviet countries.

Methodology

The object of this research is the economic systems of post-Soviet countries, referring to the 15 republics that were part of the Soviet Union before 1991. The choice of this group of countries is explained by the peculiarities of their economic development associated with the transition of a planned economy to a market one. As a result, the economies of these countries react quite painfully to any internal and external shocks.

To achieve the proposed objective, it is necessary to operate with macroeconomic indicators obtained from official statistical services (agencies) at the national or international level. At the same time, the information must be updated (covering data for 2020). In this context, two indicators are used to carry out this research:

1. Gross domestic product by production approach (value added by economic activity (% of GDP)). The data were taken from the Internet portals of the national statistical offices: The Federal State Statistics Service Russian (https://rosstat.gov.ru), Statistics Estonia (https://www.stat.ee), Statistics Lithuania (https://www.stat.gov.lt), Central Statistical Bureau Republic of Latvia (https://www.csp.gov.lv/en). Consideration of the structure of economic sectors in comparison between 2008–2009 and 2019–2020 allow identifying structural shifts and changes in dominant industries.
2. Business Confidence Index published by the OECD (https://data.oecd.org/leadind/business-confidence-index-bci.htm). The use of this indicator in the analysis is explained by two factors: firstly, the availability of data for 2020 in monthly dynamics for four countries that were part of the Soviet Union: Latvia (LVA), Lithuania (LTU), Estonia (EST), Russian Federation (RUS); secondly, the index reflects the confidence in the future of the entrepreneurs employed in the most significant part of the economy, namely in industry, which means that it characterizes the business expectations in the entire economy of the country.

In the course of the study, two working hypotheses are tested on the basis of the official data from national statistical services and international institutions:

H1: The impact of the COVID-19 crisis on the economic structure of post-Soviet countries differs from previous shocks due to its non-economic nature.

H2: The magnitude of the economic decline in the economies of the post-Soviet countries has not reached the local minimum of the transition period recorded over the past 30 years.

To test (or refute) the hypotheses raised, a number of general scientific and statistical methods will be used, such as analysis, event history analysis, comparison, and descriptive statistics.

Estimation of the complex dynamics of macroindicators will be carried out on the basis of a piecewise linear regression with dummy variables:

$$y' = a_0 + a_1 t + b_1 D_1 + b_2 D_2 \tag{8.1}$$

where: a_0, a_1, b_1, b_2—the required coefficients of the model;
t—a discrete variable reflecting the time component;
D_1—a dummy variable reflecting the change in the free term of the equation to the point t', defined as follows: 1, if $t > t'$; 0, if $t \leq t'$;
D_2—a dummy variable reflecting the change in the trend slope at point t', defined as followed: $t—t'$ if $t > t'$; 0, if $t \leq t'$.
t'—the moment of transition of a macroeconomic indicator from one state to another.

It should be noted that the recent scientific works related to the estimation of the coronavirus impact on the economic structure have a common characteristic. They describe the essence of the COVID-19 crisis and evaluate its consequences at a qualitative level without using quantitative indicators. The main reason lies in the insignificant interval of time that has elapsed since the beginning of the crisis (statistics have not yet been produced). In this sense, we believe that our research is relevant and timely.

Results

Economic crises periodically "shake" the economies of countries, and their impact is especially acute in countries with a so-called "economy in transition", which include Russia and 14 other republics that were part of the USSR. This can be explained by the fact that, due to a short period of development, the market economy in these countries did not gain sufficient momentum and did not acquire stability. The latest crisis, which started at the end of 2019 and continues until now, also negatively affected macroeconomic indicators, which "sank" compared to the beginning of 2018. Furthermore, the coronavirus crisis has its own characteristics: namely, the social isolation of most citizens and the forced closure of enterprises in the service sector. In such an environment, the demand for online services has multiplied by several times, raising the question of accelerating the transition to the digital economy.

In relation to the crises that affect the Russian economy, the information shown in Fig. 8.1 can be consulted and the chronology of the effects of the shocks can be analyzed.

According to the information shown in Fig. 8.1, it can be stated that for the past 30 years the Russian economy has been regularly experiencing shock effects, which are transmitted to partner countries, namely other post-Soviet countries.

Unlike previous crises, the COVID-19 crisis is not economic but biological in nature and, despite historical precedents (for example, the Spanish flu pandemic in 1918), the Russian economy (like most other countries in the world) was not prepared for such a crisis. As a result, the Government of the Russian Federation was forced to suspend the operation of whole industries. The consequence of this decision was a

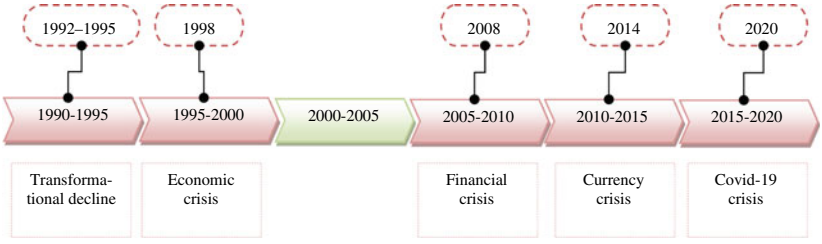

Fig. 8.1 History of crises in Russia (*Source* Created by authors)

reduction in consumer demand, non-performing loans, the "extinction" of economic sectors, hidden unemployment, etc. The biggest impact of the crisis was felt by small businesses, especially in the service sector.

To assess the structural changes in the economy, the share of gross value added of economic activity in % of GDP can be used. In this case, we will consider four countries: the Russian Federation, Estonia, Latvia, and Lithuania. The selection of these countries can be explained by the existence of macroeconomic indicators for 2020 and, in particular, SNA data (Table 8.1).

At the end of 2020, under the influence of the COVID-19 crisis, there is a decrease in the proportions of almost all sectors of the Lithuanian economy. The largest drop (0.6%) is detected in industry (sections B, C, D, E). The peculiarities of the last crisis are reflected in the change of the economic structure, so that social distancing led to the demand for digital services and, as a result, we observe an increase in the share of J-Information and communication by 0.4%. The highest growth is observed in the public sector, outlined by sections O, P, Q, which amounted to 1.2%.

In order to assess the level of difference between the COVID crisis and the global financial crisis of 2008, we can look at the structural changes for the period 2008–2009. The information at our disposal indicates more significant changes, so that for sections O, P, Q the growth was 4.7%, for industry (sections B, C, D, E) an increase was of 3.2%, and also an

Table 8.1 Economic structure of Lithuanian GDP, % of total GVA

Branches according to OKVED	2008	2009	Deviations 2019/2018	2019	2020	Deviations 2019/2018
A	2.1	2.5	0.4	2.4	2.3	-0.1
B_C_D_E	16.3	19.6	3.2	19.6	19.1	-0.6
C	13.4	16.1	2.7	17.3	16.8	-0.5
F	6.0	7.2	1.2	8.6	8.5	-0.2
G_H_I	22.2	26.7	4.4	29.0	28.7	-0.4
J	2.5	3.0	0.5	4.1	4.5	0.4
K	2.0	2.4	0.4	2.0	1.8	-0.1
L	0.9	1.1	0.2	1.0	0.9	-0.1
M_N	5.7	6.8	1.1	8.0	8.0	-0.1
O_P_Q	23.6	28.3	4.7	22.9	24.1	1.2
R_TO_U	1.9	2.3	0.4	2.2	2.2	-0.1

Source Own elaboration based on the information from Statistics Lithuania (https://www.stat.gov.lt)

increase of 4.4% is fixed in trade (sections G, H, I). On the other hand, the IT sector showed a decrease of 0.5%. Thus, we can conclude that in Lithuania, in the current period, the growth of the high-tech sector is clearly manifested in the context of a decrease in the share of classical sectors of the economy. It is also worth pointing out more significant changes in the economic structure in 2009 than in 2020.

The next step is to consider the changes in Latvia's sectoral structure in 2020 relative to 2019 (Table 8.2).

Under the influence of the coronavirus crisis, the structure of the Latvian economy did not undergo significant changes. However, we can highlight that the share of the public sector (sections O, P, Q) increased by 1.1% and the share of trade (sections G, H, I) decreased by 1.6%. These changes in the economic structure are expected, since, in the conditions of the crisis, demand decreases and the government protects the most socially important areas (education, healthcare, etc.) (Table 8.3).

Addressing the structural changes in 2008–2009, Latvia presents a similar panorama with Lithuania, with a significant increase in the participation of industry (by 1.4%) and trade (by 2.2%), yet there are also differences manifesting a significant decrease in construction (section F) by 2.3% and the financial sector (section K) by 2.0%.

Table 8.2 Economic structure of Latvian GDP, % of total GVA

Branches according to OKVED	2008	2009	Deviations 2019/2018	2019	2020	Deviations 2019/2018
A	3.3	3.6	0.3	4.3	4.3	0.0
B_C_D_E	14.1	15.5	1.4	14.9	15.1	0.2
C	10.7	10.8	0.1	12.0	12.2	0.2
F	10.2	7.9	-2.3	6.5	7.0	0.5
G_H_I	25.3	27.5	2.2	24.8	23.2	-1.6
J	3.9	4.2	0.3	5.6	5.6	0.0
K	5.6	3.6	-2.0	2.9	2.8	-0.1
L	11.1	11.2	0.1	12.5	12.8	0.3
O_P_Q	16.9	17.1	0.2	16.9	18.0	1.1
O	8.8	8.1	-0.7	7.7	8.2	0.5
P	5.3	5.8	0.5	4.8	5.1	0.3
Q	2.8	3.2	0.4	4.4	4.7	0.3
R	2.0	1.7	-0.3	2.2	1.7	-0.5

Source Own elaboration based on the information from Central Statistical Bureau of the Republic of Latvia (https://www.csp.gov.lv/en)

Table 8.3 Economic structure of Estonian GDP, % of total GVA

Branches according to OKVED	2008	2009	Deviations 2019/2018	2019	2020	Deviations 2019/2018
A	3.8	2.8	-1.0	2.9	2.2	-0.7
B_C_D_E	19.8	19.9	0.1	18.9	18.5	-0.4
C	15.4	14.1	-1.3	14.7	14.4	-0.3
F	9.6	7.0	-2.6	6.4	6.4	0.0
G_H_I	22.3	21.4	-0.9	22.1	20.7	-1.4
J	4.9	5.5	0.6	7.6	8.6	1.0
K	5.3	4.5	-0.8	4.5	4.9	0.4
L	9.0	10.3	1.3	9.7	9.2	-0.5
M	4.9	5.3	0.4	5.6	5.9	0.3
N	3.2	3.4	0.2	3.8	3.7	-0.1
O_P_Q	14.8	17.4	2.6	15.9	17.4	1.5
R	1.5	1.5	0.0	1.6	1.6	0.0
S	0.8	0.9	0.1	0.8	0.8	0.0

Source Own elaboration based on the information from Statistics Estonia (https://www.stat.ee)

Thus, there are clear, various consequences of the 2008 crisis and the COVID-19 crisis, which clearly indicate the drift of the economic system dominated by classical industries (manufacturing and commerce) towards new drivers, mainly related to the telecommunications sector.

As is well known, Estonia is one of the leaders of the European Union in the field of the digitization of the economy. Therefore, the transition of most of the online business processes increased the participation of the J-Information and communication sector by 1.0%. Tracing the changes in the participation of this type of activity from 2008 to the present, we can observe that the value increases from one crisis to another. At the same time, industry, commerce, and construction experience difficulties due to crisis situations, which are manifested in the loss of a share in the total volume of GDP (Table 8.4).

The COVID crisis hit hard on the main driver of the Russian economy—industry. As a result, the decrease in the share amounted to 2.8% and the largest "contribution" to this decline was made by the mining industry (3.1%). Trade also declined, but not significantly: by just 0.4%. Increases are observed in the public administration sector (section O) by 0.8%. A distinctive feature of the structural changes in Russia from the aforementioned countries, is the growth in sector K, which is due to the desire of citizens to invest depreciating savings in a more reliable asset.

Table 8.4 Economic structure of Russian GDP, % of total GVA

Branches according to OKVED	2008	2009	Deviations 2019/2018	2019	2020	Deviations 2019/2018
A	3.6	3.9	0.3	3.9	4.1	0.2
B_C_D_E	24.6	23.1	-1.5	30.5	27.7	-2.8
C	14.4	12.2	-2.2	14.5	14.8	0.3
F	21.9	20.4	-1.5	5.5	5.7	0.2
G_H_I	26.0	25.0	-1.1	20.7	20.3	-0.4
J	0.0	0.0	0.0	2.6	2.8	0.2
K	3.6	4.3	0.7	4.3	4.9	0.6
L	9.3	10.2	0.9	9.8	10.5	0.7
M	0.0	0.0	0.0	4.3	4.5	0.2
N	0.0	0.0	0.0	2.1	2	-0.1
O	4.4	5.5	1.1	7.5	8.3	0.8
P	2.3	2.8	0.5	3.2	3.4	0.2
Others	4.3	4.8	0.6	5.6	5.8	0.2

Source Own elaboration based on the information from the Federal State Statistics Service Russian (https://rosstat.gov.ru/)

Comparing the structural changes of the last two crises, we can say that the consequences for the Russian economy are similar, showing a decrease in the share of industry and trade, and growth of the public sector. However, construction (sector F) presents an exception, indicating that activity in this sector decreased by 1.5% in 2009 but increased by 0.2% in 2020.

On the other hand, the assessment of the depth of the crisis must be based on a sensitive indicator that can reflect the sentiments of the entrepreneurs. For this we use the Business Confidence Index, whose dynamics is shown in Fig. 8.2.

Analyzing the information shown in Fig. 8.2, several features can be noted. Firstly, the crisis of 1992–1994 has a clearly observable effect, which is associated with the transformation of the economy. Secondly, the crisis of 1998–1999 also stands out plainly. Thirdly, the countries under consideration show significant synchronization in their development, as the correlation coefficient between the countries under consideration is more than 0.5 (with the exception of the EST & RUS pair, for which the coefficient is 0.28). Fourthly, there is a greater decline in 2009 in general in all the countries under this study, especially, in Estonia, with the value of 87%. Fifthly, in 2019–2020 a decrease is observed due to the pandemic of the COVID-19 virus, namely the disruption of the

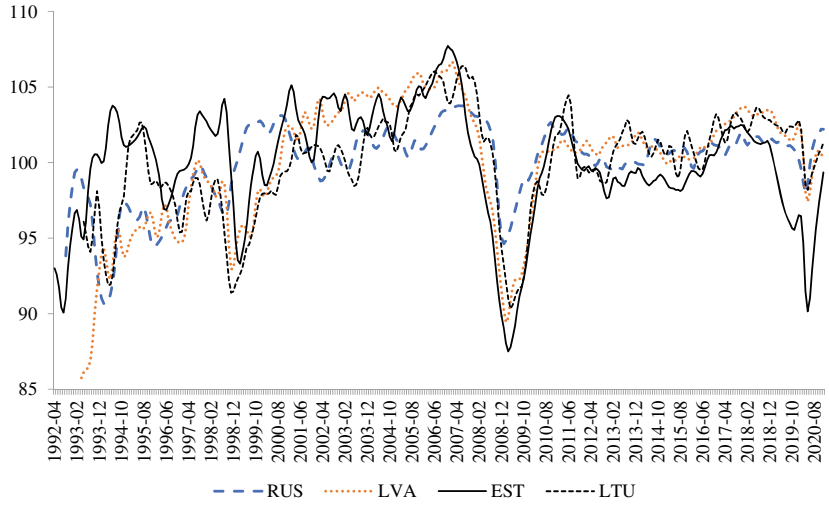

Fig. 8.2 Dynamics of the business confidence index in post-soviet countries during the period from 1992 to 2020, % (*Source* Own elaboration based on the OECD materials)

usual course of society and the halt (transformation) of most economic processes. However, a downward trajectory was outlined back in 2017, although the level of 100% was exceed in March–April 2019.

The dynamics of Estonia are significantly different from the fluctuations of the index levels in Russia. In the early 1990s, Estonia entered the market economy more smoothly, but then the economic situation in this country began to show difficulties achieving a value of 93% in July 2020, which is the lowest among the countries considered. Perhaps the reason for this performance is the low diversification of sectors of the national economy, highlighting the production of services as the main driving force behind the economy. As services are the small companies that have the least financial strength, so the stability of the entire economic system is threatened (Shashkova et al., 2020).

The dynamics of the four time series is complex. Two periods of development are clearly distinguished—before and after 2008–2009—but at the same time the crisis of 2019 laid the foundations for the next period of growth (recovery). Obviously, an econometric model in the form

of a linear function will produce an unsatisfactory forecast that differs significantly from the actual values.

Through consulting econometric theory, especially the section dedicated to time series analysis, we can find an approach based on the inclusion of a dummy variable in the model, which changes the slope or the magnitude of the free term, or both parameters simultaneously.

Let us use the considered approach, as well as the capabilities of the statistical software package STATISTICA, to construct piecewise linear models of the dynamics of the Business Confidence Index for four Post-Soviet countries:

- EST: $y' = 103.76–0.03t–4.45D_1 + 0.08D_2$. $R^2 = 0.30$. $F_{\text{fact}} = 31.44$;
- LVA: $y' = 105.26–0.04t–3.5\ D_1 + 0.08\ D_2$. $R^2 = 0.34$. $F_{\text{fact}} = 41.06$;
- LTU: $y' = 100.71 + 0.02t–5.83\ D_1 + 0.03\ D_2$. $R^2 = 0.31$. $F_{\text{fact}} = 35.05$;
- RUS: $y' = 100.33 + 0.01t–2.23\ D_1$. $R^2 = 0.15$. $F_{\text{fact}} = 18.26$.

According to the models obtained for the Baltic countries, the crisis of 2008–2009 caused a change in the slope of the straight-line angle, while in the post-crisis period there is a higher growth than before. As for Russia, the crisis only changed the free term, decreasing it (which was expected), but it did not affect the slope of the regression. It is also worth noting the low value of the coefficient of determination (R2 = 0.15), due to the high fluctuations in the levels of this time series. However, the model is statistically significant in terms of the *t*-Student and *F*- Fisher statistics.

Thus, the results of the conducted econometric modeling prove the legitimacy of applying the piecewise linear model to the complex dynamics of macroeconomic indicators in post-Soviet countries, as well as a significant impact on the levels of the considered time series of world and country crises.

Discussion

Structural transformation refers to the reallocation of economic activity from low productivity to high productivity activities and sectors. A brief

historical overview of economic theories reveals that structural transformation is a phenomenon that is directly linked to the evolution of economies themselves. In this context, the process of structural change in economies towards more advanced stages of development can be characterized in two different phases in terms of productive specialization. In a first phase, the weight of the primary sector (agriculture) decreases, and the production of the secondary sector (manufacturing) increases in the economy. In a second phase, the manufacturing loses weight and activity in the tertiary sector (services) gains instead. As early as the 1970s, the economic literature considered this process of structural transformation as one of the main characteristics of long-term economic growth (see, for example, Kuznets, 1973).

Although in the seventeenth century, Petty (1676) wrote: "*There is much more to be gained by Manufacture Husbandry, and by Merchandise than Manufacture…*", it was Fisher (1935) and Clark (1940) who, after more than two centuries, revalidated Petty's contribution, at the same time that they (especially Clark) took a very important step forward in terms of the sectoral identification of economic activities, with the formulation of a triple classification identifying agriculture, industry, and services.

This Fisher-Clark contribution aroused great interest among economists, which subsequently led to the appearance of a large number of works on this topic, including the most representative of Clark (1957), Kuznets (1957), Chenery (1960), Kuznets (1966), and Syrquin (1988). The most recent overview of the literature on structural change is presented in the papers of Herrendorf et al. (2013), Sposi et al. (2018), and van Neuss (2019).

According to Dabla-Norris et al. (2013), theoretical studies emphasize two broad economic mechanisms which drive the observed reallocation of economic activity across sectors. One class of multi-sector general equilibrium models focus on preferences or "demand" factors, with income effects driving the process of structural transformation (Echevarria, 1997, 2000; Kongsamut et al., 2001). A second group of models emphasize relative price effects or "supply factors" to explain the long-run patterns in the sectorial reallocation of resources. Relative price changes and sectorial shifts are generated by having differential rates of productivity growth (Duarte & Restuccia, 2010; Ngai & Pissarides, 2007) or differential capital intensity across sectors (Acemoglu & Guerrieri, 2008).

Also, Dabla-Norris et al. (2013) identify several recent theoretical studies which combine elements of the two mechanisms to explain structural transformation. For instance, Buera and Kaboski (2012a, 2012b) develop models which emphasize the role of increasing human capital or skill-intensity in services, and scale technologies as a complementary mechanism, to explain industry and services growth patterns over the development process. Openness to trade and the associated differential productivity growth rates across sectors has also been shown to have important implications for structural transformation (Matsuyama, 2009; Uy et al., 2013). Lee and Wolpin (2006) develop a two-sector model which measures the costs associated with sectorial labor reallocation and assesses the relative importance of labor demand changes (e.g., arising from sectorial productivity and relative price shifts) and labor supply factors (e.g., changes in demographics, fertility, and educational attainment) for structural transformation (Dun et al., 2020; Osipov et al., 2021).

In terms of empirical evidence, while European and Asian countries usually experienced structural transformation through a move from agriculture to manufacturing, many other countries (e.g., African countries) have deindustrialized (Rodrik, 2016). On the other hand, the European Commission (2013a, 2013b) documented that, in general in the European Union, the GVA shares of agriculture, industry, and construction decreased in recent years, while those of service sectors increased, which agrees with our results obtained in this research. Also, these patterns are consistent with a long-term shift in the economic structure from manufacturing to services. More specifically, in real terms, value added in manufacturing increased over the period by almost 14%. However, it increased faster in service sectors, with "Information and communication" (68.5%), "Professional, scientific and technical activities; administrative and support service activities" (30.7%) and "Real estate activities" (27.6%) seeing the biggest rises. These figures also confirm one of the conclusions of our work on the growing share of the IT sector in the economy.

The process of structural transformation towards economic structures based to a greater extent on services has relevant implications for the long-term growth of the economy. Baumol et al. (1985) show how this process can reduce long-term productivity growth in developed countries due to the reallocation of resources to low-productive service sectors. Given that manufacturing goods and services are complementary with an

elasticity of substitution less than one, the sector with the lowest productivity growth (services) would end up using all the employment in the economy, taking this process to the limit (this is the so-called Baumol disease). Although Duernecker et al. (2017) qualify this conclusion by showing that within the tertiary sector there are unproductive services and other highly productive ones that are substitutes for each other; it is expected that the process the of reallocation of activity towards services will reduce the growth of aggregate productivity in advanced economies to the extent that services generally show lower productivity growth than manufacturing. In any case, Matsuyama (2009) emphasizes the importance of international trade in this regard. Faced with an increase in productivity in manufactures, international trade would lead to a greater allocation of resources to manufactures to satisfy the greater external demand, thus offsetting, at least in part, the so-called Baumol disease. On the other hand, there is also evidence on the reduction of the volatility of economic cycles as services gain weight to the detriment of manufacturing (Carvalho & Gabaix, 2013; Moro, 2015). Finally, Galesi and Rachedi (2019) show that the greater weight of services as inputs from the rest of the sectors can reduce the effectiveness of the transmission of monetary policy by presenting greater rigidities in prices in the services sector.

Unfortunately, so far, there is not empirical evidence that structural transformation played a significant role for the growth performance in the post-Soviet countries between 1992 and 2020. Thus, our work aims to contribute by providing the comprehensive empirical results associated with structural transformation in some of the post-Soviet countries.

Conclusion

Summing up the results of our research, the following conclusions can be formulated:

- The structure of the economy of the Baltic countries reacts to the COVID-19 crisis in a similar way, which is manifested in a decrease in the share of classical sectors of the economy (industry and trade) and an increase in the section on J-Information and communication, as well as in the public sector (sections O, P, Q).
- The post-Soviet countries that joined the European Union show a general difference from the changes observed in the structure of the

Russian economy in the two compared periods of 2008–2009 and in 2019–2020. The last crisis for the Baltic countries is "milder" since the structure has changed slightly.

- The Russian economy has reacted to the impact of the last two crises (2008 and 2020) in the same way, namely with a decrease in the share of industry and an increase in the share of sections K, L, O.
- The considered post-Soviet countries show a high level of synchronization in the development of the Business Confidence Index, which is manifested in a similar reaction to the rise and fall in the global economy.
- The dynamics of the Business Confidence Index of the post-Soviet countries shows one distinctive characteristic, which is a significant decline in 1998–1999, while this crisis had practically no effect on the dynamics of the Eurozone countries.
- A piecewise linear model with a dummy variable is best suited to model the complex dynamics of the Business Confidence Index with several structural breaks.

Summarizing the identified patterns of the response of the economies of post-Soviet countries to crisis situations, it can be argued that the current coronavirus crisis has one positive effect. As a result of social distancing and the suspension of the work of a number of enterprises (especially in the service sector), the demand for online services has significantly increased, expanding the penetration of digital technologies into several sectors of the economy. We believe that the given process will be accelerated and the measures that are taken as temporary (for example, the widespread introduction of video conferencing or distance learning for students) will remain, which is explained by the convenience for users, as well as an increase in economic efficiency as a result of the introduction of digital technologies in the production process.

It is also worth pointing out the direction of further research, which is seen in improving the model as new information becomes available, as well as expanding the set of countries (adding both developed and developing) and identifying patterns and characteristics of the response of economies to the consequences of the crisis caused by pandemic of the COVID-19 virus.

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CHAPTER 9

Post-COVID Period in Slovakia: Measures and Results

Katarina Brockova and Ludmila Lipkova

Introduction

The outbreak of the COVID-19 pandemic has paralyzed the global economy. Restrictive anti-pandemic measures remained the main factor affecting national economies in 2020 and early 2021. The consequent economic crisis, originating from the health crisis, therefore was not the result of either the individual national economies or the world economy as such. Factors influencing national economies in this situation are internal and external. Small open economies are more strongly influenced by the external factors of the economy, namely the demand on foreign markets. Depending on the situation in foreign markets, these effects may be negative or positive.

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Such an example is the economy of the Slovak Republic, which was hit hard by the pandemic. The Slovak economy is only a small part of the world economy, accounting for only 0.12% of global GDP (World Bank, 2021a). Slovakia is a very small, dangerously open economy, with a share of exports of 92.4% in GDP and a share of imports of 92.0% (World Bank, 2021b). The Slovak economy is integrated into the European Union and the euro area, which needs to be assessed positively from previous experience. The coronavirus crisis caused the biggest recession in this integration grouping as well.

Anti-pandemic measures, quarantine, and the declaration of a state of emergency have led to the restriction of population movements and to the further restriction—and even complete cessation—of many economic activities. The Slovak economy was hit by two pandemic waves during the year. In the spring of 2020, when economic activity was curtailed for the first time, the number of infected, hospitalized, and deaths were some of the lowest in the world. The situation during the second wave of the pandemic was significantly worse. The number of deaths attributed to COVID-19 was 9,426 people by the end of March 2021 (0.17%) and the number of infected was 356,985 persons (6.5%); meanwhile, the number of vaccinated people is 615,395 persons, which is 11% of the total population (MIRRI, 2021). In addition to the damage to the health and loss of life, the coronavirus pandemic has resulted in significant economic losses. The periods of the first quarter of 2020 and the period of the first quarter of 2021 were critical. Slovakia is one of the countries most affected by the economic effects of the pandemic.

Materials and Methods

The last long-term global pandemic hit the world a hundred years ago, when the so-called Spanish flu spread. In addition to the Spanish flu, the world has seen many other pandemics over the last hundred years, such as SARS, MERS, and the Ebola pandemic. However, they were of a shorter nature and their consequences were more local than global.

Many theorists and analysts have addressed the coronavirus pandemic and its consequences in their work. In theoretical works, there has been an analysis of the economic and social impacts of pandemics and the expected situation after the post-pandemic recovery of economies.

The socio-economic impact of the COVID-19 pandemic on all spheres of socio-economic activities is addressed in the work of Nicola et al.

(2020). The authors examine how restrictions on social distance have limited employment opportunities and significantly reduced activities in individual sectors of the economy. In this context, they recall that many jobs have been lost, which has had a strong impact on the economic and social situation of individuals and the state (Dun et al., 2020; Iida, 2020; Maas, 2020; Osipov, 2019).

Other authors (Ibn-Mohammed et al., 2021) analyze the negative and positive effects of the COVID-19 pandemic on society and the economy. From the content of this study, we draw particular attention to the focus on the positives that should occur after the recovery of economies after the pandemic. In particular, it should focus on such urgent topics as building a low carbon economy, a circular economy, and sustainable development regarding climate change.

In their work, Chinese authors Song and Zhou (2020) note the uncertainty caused by the global pandemic, the global recession, and the recovery of the economy after the end of the pandemic. They point out, together with other authors, the enormous challenges offered by post-COVID recovery around the world to states, communities, families, public health, and the economy (Osipov & Skryl, 2021). It should be noted that the challenges affect all economies. However, their impact depends on the economic level of each state, its financial and human capabilities (Fears et al., 2020). Slovak scientific journals also reflect the current health, economic, and social crisis caused by the COVID-19 pandemic. One of the authors analyzes a special aspect of anti-pandemic measures that have an impact on the restriction of human rights (Kolodziejczyk, 2020). As a result of the COVID-19 pandemic and labor market constraints in individual national economies, domestic employees have lost their jobs, but more often negative effects affect foreigners in the national labor market (Osipov, 2021; Osipov et al., 2021). Another Slovak author draws attention to this fact in his work (Kíner, 2021).

In analyzing the works of several authors, we note that we find a mutual agreement in their evaluation of the negative and positive impacts of the COVID-19 pandemic on economic and social processes in each state. Coronavirus also intervenes in various specific areas that are part of social life, such as the labor market, in which foreign workers are active in a globalized world, or interfering with human rights, which has been the subject of many protests in many countries, specifically Western European

ones. A similar situation can be seen in the housing constructing market (Ermilova & Laptev, 2020).

We used theoretical and empirical research methods to process this article. Firstly, we used an analytical method to examine the socio-economic situation in the Slovak Republic caused by the coronavirus pandemic. For generalization, we used a synthetic method of investigated phenomena in the economy of the Slovak Republic. A deductive method was also used to outline the future situation in the post-COVID era. We also used a comparative method when processing the article. Using various scientific methods, we tried to achieve the most realistic results in the study of the issue.

Results

The coronavirus crisis, and the extraordinary epidemiological measures taken at the national and international level, have had a significant impact on the functioning of the state. The COVID-19 pandemic has hit the Slovak economy in two waves so far. The Slovak economy has plummeted compared to previous years, and anti-pandemic measures have had negative consequences.

The first wave of the coronavirus crisis began in the spring and the second wave in the autumn of 2020. The reduction in economic activity is still causing a decline in GDP, an increase in unemployment, a deepening of the state budget deficit, and an increase in public debt to record levels.

At the end of 2019, the unemployment rate in Slovakia reached an all-time low, reaching 5.6%. In 2020, unemployment rose to 6.8%. Most workers who lost their jobs were in the sectors of transport and storage, accommodation and food service activities, and health and social work. State measures to protect jobs have contributed to the limited impact on the labor market. In 2021, the unemployment rate is expected to increase further to 7.1% (EC, 2020). Thanks to the implementation of the Recovery Plan, a subsequent gradual decline in unemployment from 2022 is to be recorded.

Slovakia recorded a significant downturn in both exports and imports. Imports decreased by 36.6% and exports by 43.0% (FinReport, 2020).

Compared to 2015, the performance of the economy is falling and reaches only 75% of the European Union average. The neighboring Czech Republic, which in the past formed a common state with the Slovak Republic, has already reached the level of 92% of the European Union

average (NKÚ, 2020). It should be emphasized that the Slovak economy experienced structural problems even before the COVID-19 pandemic; since about 2014, according to the performance of the economy per capita, Slovakia has stopped catching up with advanced economies (EK, 2020).

Overall, in the event of a shortfall on the revenue side and increased expenditures (social measures, financial support for companies, unemployment benefits, and other measures to support the economy), the situation led to an increase in the state budget deficit, which in 2020 reached 9.7% of GDP, which was in absolute terms €9 billion (Fojtík, 2020). The risks associated with the coronavirus pandemic have been reflected in the draft budget for 2021. The projected general government deficit will reach 7.41% of GDP, i.e., €7 billion in 2021 and public debt will increase from 48.5 to 65% of GDP (MFSR, 2020). Deterioration of public health is a temporary situation. In a crisis, fiscal policy (increased state budget deficit) is to be used to stabilize the economy. The increase in the deficit is tolerated in this situation by domestic budgetary rules as well as by the budgetary rules of the European Union. It will be necessary to use pro-growth funds from the state budget, as well as finances offered by the European Union from all funds.

After the successful management of the coronavirus crisis and the release of all epidemiological measures, there should be a positive break in the functioning of the Slovak economy. The recovery will depend not only on localized activities, such as the use of funds from the state budget and European Union funds, but largely from the activities of foreign trade partners. The key factor for the Slovak economy will be the demand volume in the euro area and its increase. To return to normal more quickly, the Slovak government must launch effective measures (Fig. 9.1).

There are three scenarios that can be anticipated for economic recovery: V-shaped, U-shaped, and L-shaped. The first scenario assumes a sharp economic downturn with a subsequent rapid recovery; this would have been realistic if the economy had returned to growth recorded in 4Q 2020, but this has not happened. A good option would be a U-shaped recovery: this assumes a slower return to the growth trajectory, but ultimately, the economy would be able to return to economic growth; with the end of the pandemic in 2021, this is a realistic scenario. The third scenario is not so optimistic: an L-shape, which would mean a relatively long period at a very low level of below-average economic growth for several years. It should be noted that historical experience shows that

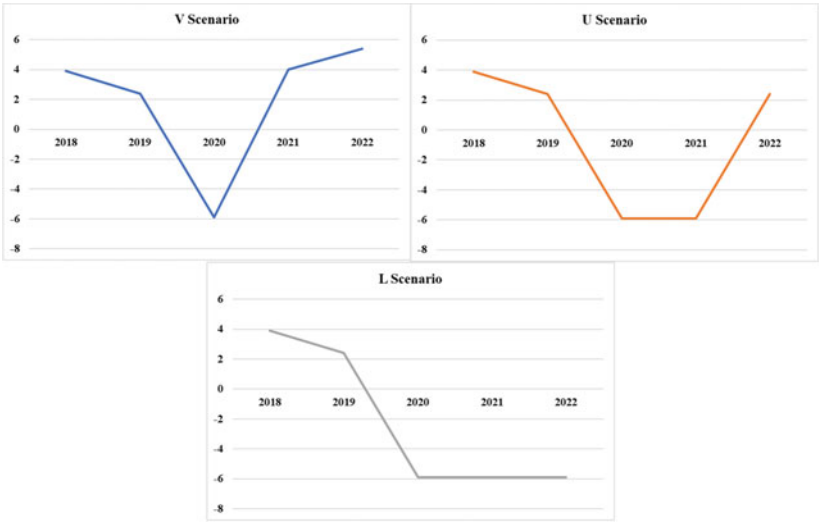

Fig. 9.1 Economic recovery scenarios (*Source* Created by authors on the basis of EC (2021a))

crisis and post-crisis periods generate significant deviations between the reality and the modeled situation.

To help overcome the immediate economic and social damages caused by the COVID-19 pandemic, the European Union will provide its member states with exceptional funding under the NextGenerationEU program of €750 billion, with loans of €360 billion and grants of €390 billion. NextGenerationEU funding is divided into three pillars, which will be invested in by the Member States of the European Union: green economy, digital transformation, and a resilient European Union (EC, 2021b; Huseynov & Inozemtsev, 2018).

The European Union will financially support member states to invest in investment and reform, to boost the economy by providing incentives, and to learn from the crisis.

Funds from the European Union are created from the membership fees of the member states, and will therefore be in the form of a common debt, which will be repaid together. Effective use of such an increased budget is not only the priority of the Slovak Republic, but also a pan-European priority. By April 30, 2021, the Slovak Republic must present

to the European Commission a Recovery and Resilience Plan, based on which it can obtain €6.1 billion (Porubský, 2021).

Thanks to drawing funds from the Recovery plan, economic growth in Slovakia in 2022 should reach 6.3%.

The Slovak Republic has identified five priorities for the Recovery and Resilience Plan, which represents a reform package of measures—the green economy (34%), health (27%), public administration (16%), education (12%), and science, research, and innovation (11%) (MFSR, 2021).

1. The implementation of the "Green Economy" priority will lead to a reduction in emissions, such as through the cessation of brown coal combustion at the Nováky power plant, or the reform of the electricity market regulation to increase the share of renewable energy sources in Slovakia's electricity mix. It will include investment in renewables, the decarbonization of industry, and the construction of infrastructure for alternative propulsion vehicles.
2. "Health" is another priority of the Recovery Plan. The program will focus on an innovative approach in the provision of health care, increasing its quality and availability. The reform will define the types of hospitals, draw up a map of institutional health care, and directed investment to the construction, reconstruction, equipment, and digitization of hospitals, including telemedicine.
3. The "Public Administration" priority is intended to lead to its reform and modernization. In particular, the recovery will focus on building an effective state, digitization, improving the business environment, reforming the judiciary branch, fighting corruption, and protecting the population.
4. Another priority is "Education". This program aims to provide better education, with the reform of its educational content, textbook policy, and teacher training. An important part will be the digital equipment of schools and increasing the digital skills of students. The renewal will also apply to universities. A comprehensive reform of their management, financing, and evaluation will take place. Retraining of employees whose jobs are threatened by automation and the transition to a carbon-free economy can also be important.
5. The fifth priority is "Science, Research, and Innovation". Reform in this area is intended to contribute to more effective management,

> strengthening funding for science, research, and innovation, and attracting and retaining talents. New forms of cooperation between the private and public sectors and funding of research institutions, especially the Slovak Academy of Sciences, will be supported. Support for migration policy as part of human capital development will be important in this regard.

The European Union's rescue plan is an unprecedented opportunity for Slovakia. Nevertheless, it is also necessary to point out its weaknesses. It would make sense to divide the money into the companies that employ the most people, but it is still important to support the small and medium-sized enterprises that have suffered the most. It would not be promising to focus fundamentally on the development of transport infrastructure, as this would be at the expense of the five priorities mentioned above.

Slovakia must rely on its own resources. Financial resources from the European Union can help in the medium term for several years. Unfortunately, there is the possibility that Slovakia will not make sufficient use of this opportunity. Money from the European Union could contribute to a 2% increase in GDP every year.

Slovakia needs to return to stronger economic growth and healthier public finances. Financial projects from the European Union will need to be used for high value projects also in the future.

Discussion

The coronavirus pandemic is halting economic growth and economic activity, which leads to a deep economic downturn, a decline in GDP, a decrease in state budget revenues, and a consequent increase in public debt. Given that the origin of the crisis is not economic but health, it can be expected that a return to the pre-crisis state should not be problematic, as there is no need to correct structural distortions. Nevertheless, the governments of the affected states must take measures to accelerate the return to the trajectory. It should also be noted that the coronavirus pandemic and the new conditions created with it for the business sector, as well as the personal lives of the population, have revealed many weaknesses inherent in modern society.

Governments and citizens have understood what is important and what is less important in their lives. Rich countries, with high and surplus or balanced budgets, have enough of their own resources to overcome the

crisis. The poorer countries, to which the Slovak Republic also belongs within the European Union, must also use external resources to rebuild their economies.

Even before the pandemic, the European Union and the OECD drew attention to structural problems in the Slovak economy. Structural changes will be made, particularly in those areas that have been most affected. It should nonetheless be noted that, for example, healthcare, which has been—and still is—one of the most challenged areas at this time (dealing with the enormous influx of patients with one type of often fatal disease), has responded swiftly by reprofiling hospitals to cope with the onslaught of patients with COVID-19. Thanks to digitalization, students were not left out without education (although the quality of online education is incomparable to full-time education). Different sectors of the economy have dealt with the pandemic situation depending on their need for contact with clients. However, many sectors have suffered serious losses that can no longer be caught up. This applies particularly to tourism, restaurant services, and other time-bound services. Many of the companies operating in these areas of services have disappeared in this time of crisis. In connection with the restriction of companies' activities and the restriction of citizens' social contacts, savings increased. After each crisis, especially of an uneconomic nature, comes the euphoria that leads to increased consumption. We can expect such a situation even after the end of the coronavirus crisis. However, it is reasonable to expect that the crisis will also have consequences on consumer behavior and that its structure may partly change.

The economic downturn has also brought its positives, especially in the environment, a sphere which does not always correspond to the interests of economic growth. Significant reductions—particularly in passenger traffic—have led to less pollution of air, watercourses, and seas and oceans. The coronavirus has helped to improve ecology, as well as to other positives at the personal level and at the social level.

Each crisis brings new knowledge and new perspectives. For example, it is now clear how powerful nature is. The planet has its intelligence, and when it needs to be slowed down, it slows down. There is no optimal world for everyone. A distinction must be made between essential and non-essential.

Conclusion

Natural disasters have plagued humanity since time immemorial. They take the form of earthquakes, floods, fires, volcanic eruptions, or pandemics. Any natural disaster disrupts the functioning of society in the short or long term and leads to greater or lesser human and economic losses. Nature itself has the ability to regenerate after the end of a natural disaster. At present, however, the world has many technical and scientific conveniences at its disposal to remedy the consequences of any disaster and pandemic more quickly. Modern society is defending this pandemic with the help of science in the form of the use of new vaccines.

A pandemic is a great tragedy and positives are very difficult to find, but every crisis does also bring positives on all levels. In addition to less burden on the environment, it is also a more intensive use of the latest technologies in all possible available spheres of society. A pandemic is a lesson for a more modest lifestyle. However, this is at odds with the pursuit of economic growth.

One of the positive aspects of the current pandemic is the acceleration of the digitization of society as a whole.

A pandemic is an opportunity to change many things in society—to strengthen healthcare, modernize public administration and education, support science and research and development, and invest in automation and other new technologies.

Governments need to make rational decisions in dealing with the pandemic and rebuilding society after its end, based on expert and scientific analysis. They will achieve much better results than if they make decisions based on populist or lobbying pressures. Society needs to be changed so that it has procedures and basic equipment ready for the future.

The post-COVID era will have the potential to be a positive turning point in the functioning of the Slovak Republic. The NextGenerationEU recovery program has given a strong impetus to the economy. Pandemics affect both poor and rich nations, and this one has also shown how vulnerable Western civilization is. Optimists believe that recovery from coronavirus will have a positive synergistic effect. Pessimists believe that most will not learn from this experience.

When we recover, we must be better than before.

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CHAPTER 10

"Political Risks of Post-COVID World and Their Economic Consequences"

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Introduction

In 2020, the world was hit but COVID-19, the pandemic of an unprecedented scale. Even though the pick of the pandemic was registered in 2020, the medium- and long-term consequences of the pandemic for the geopolitical environment will gain momentum in 2021. Leaders need to be prepared to face key risks appearing from the geopolitical consequences of a pandemic.

The pandemic crisis has significantly aggravated social and political tensions in many countries around the world, with a particularly explosive situation in developing countries that have been hit by the COVID-19 pandemic to the largest extent. The ability of businesses to act flexibly in determining strategies, manipulating operating activities, and making decisions will play a crucial role in managing the associated political risks. The negative impact of the COVID-19 pandemic is not limited to a sharp drop in business revenues and a general "cooling" of the global

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economy. That is why government also needs to take a closer look at political stability.

In recent decades, there has been an increasingly pronounced trend towards the merging of politics and economics around the world, both in developed and developing countries (Osipov, 2021a; Osipov et al., 2021). And this is not surprising, given the fact that the modern national economy, no matter how perfect and efficient it may be is subject to political decisions.

In terms of a market economy, almost all types of economic activity are subject to various political risks. Therefore, it is very important to be able to identify and assess such risks, as well as predict them to prevent and neutralize the negative effects of political processes on economic activity. COVID-19 is expected to cause serious damage to the world economy. We need to pay closer attention to political risks and understand the correlation between political and economic risks to rule out even more dignified effects on the economy.

Methodology

Most agencies dealing with political risks pay significant attention to COVID consequences. Analytical and comparative methods will be used to get a comprehensive understanding of key upcoming political risks given the pandemic and economic consequences that accompany them.

Marsh

To begin with Marsh' methodology we should study Marsh Political Risk Map.[1] The 16th edition of the Global Risk Report, published by the World Economic Forum with the support of Marsh McLennan, highlights the devastating effects of major risks that could change our world in 2021 and the long run. The report is based on a survey of nearly 700 experts around the world. They were interviewed about their concerns for the next decade, how global risks interact and what are the opportunities to reduce these threats.

[1] Marsh. (2021, April). *Political risk map 2020: Trade tensions threaten political stability*. https://www.marsh.com/us/insights/research/political-risk-map-2020.html.

The map is based on data from the Marsh Specialty World Risk Review platform and evaluates 197 countries and territories on nine indicators related to security, trade, and investment.

World Economic Forum

World Economic Forum presents a report on global risks on an annual basis. During this year, more than 750 experts and decision-makers were interviewed. They were asked to rate their biggest concerns in terms of their likelihood and impact strength.[2]

Coface

Moreover, we consider Coface analytic researches on the same topic.[3] Coface provides an expert assessment of credit risks in 160 countries around the world. The assessment is made based on macroeconomic and financial data, as well as information about the socio-political situation in the country. Country and industry risk assessments are published quarterly.

Coface's expert assessment is based on:

- macroeconomic expertise,
- contextual business expertise,
- microeconomic expertise based on the assessment of the payment discipline of the business.

Ernst and Young

In addition, we are about to consider the investment attractiveness study conducted by Ernst and Young (EY).[4] The survey is conducted by EY to estimate investors' interest in a particular region or country. It is

[2] World Economic Forum. (2021, January). *The global risks report 2021.* https://www.weforum.org/reports/the-global-risks-report-2021.

[3] Coface. (2021, April). *Country & sector risk barometer*. https://www.coface.com/News-Publications/Publications/Country-Sector-Risk-Barometer-Q1-2021-Quarterly-Update.

[4] Ernst & Young. (2020, December). *2021 geostrategic outlook*. https://www.ey-gbg-2021-geostrategic-outlook-v2.pdf.

designed to help businesses make investment decisions, and government organizations remove barriers to economic growth.

They use a two-step methodology to assess both the actual performance of FDI and the expectations of investors regarding its dynamics. The results of the study reflect the opinion of established international and regional experts and business leaders. EY provides both companies and governments with reliable information that can be used to form cost-effective strategies and make sound policy decisions to promote both development and investments.

Willis Towers Watson

To estimate political risks from multinationals' point of view we consider Willis Towers Watson report on political risks.[5] It is a leading international consulting and brokerage company that develops and implements solutions in the field of risk management, optimization of corporate benefits aimed at ensuring the protection and strengthening of organizations and individuals. The company publishes monthly reports covering the latest tendencies in risk management.

Results

Marsh

The economic stress caused by the pandemic will continue to exacerbate political risk throughout this year, according to the Marsh Specialty 2021 Political Risk Map, which shows a greater increase in economic risks within countries than ever before, across all regions of the world.[6] The 2021 Political risk map shows that COVID-19 is fueling social inequality and political unrest, adding to the threats facing already fragile

[5] Burns, L. (2020, May). *Four potential political risks arising from Covid-19*. https://www.willistowerswatson.com/en-US/Insights/2020/04/four-potential-political-risks-arising-from-covid-19.

[6] Political Risk Map 2021, 2020, 2019, 2018 [map] https://www.marsh.com/us/insights/research/political-risk-map-2021.html.

Table 10.1 The difference in country risk estimates in 2020

	Country Economic Risk	*Currency Inconvertibility and Transfer Risk*	*Sovereign Credit Risk*	*Contractual Agreement Repudiation*	*Strikes, Riots, and Civil Commotion*
Increase	129	138	16	45	40
Decrease	15	3	4	7	56
No change	53	56	177	145	101

Source Created by author on the basis of Marsh JLT Specialty

economies. Marsh also warns of massive bankruptcies after government-backed trade-credit schemes to support businesses during the pandemic end.[7]

Substantial change has faced many countries' economic, political, and security risks are indicated on Marsh JLT Specialty's country risk rating platform. More than a quarter (26.7%) of World Risk Review ratings increased in April 2020, compared with 10.2% in the same month in 2019.[8] Data concerning 2021 has not been reviled yet (Table 10.1).

The 2021 Political Risk map shows that COVID-19 is fueling social inequality and political unrest. The accompanying report to the risk map states that COVID-19 has widened the gap between rich and poor. Countries spending decades trying to reduce poverty could find themselves in a situation where their attempts will be whittled away. Marsh warns that food security, access to water, and energy costs pose serious pressures that could lead to increased nationalism and civil unrest. Meanwhile, according to Marsh Specialty, social inequality will affect election platforms, especially in middle-and low-income countries. We believe that political interference can show itself in more indirect forms in emerging markets. We might expect increasing tax pressures and export restrictions. Investors may decide to avoid countries that are less welcoming to overseas investment or look to mitigate the risk.

Marsh also warns of massive bankruptcies after government-backed trade-credit schemes to support businesses during the pandemic. Talking

[7] Marsh (n.1).

[8] Ibid.

about political risks and economic consequences we should state-backed trade-credit schemes created to ensure economic stability during the pandemic. Marsh fears that this could support "zombie" companies, and when the implementation of these schemes stops, there may be a lot of bankruptcies.

These schemes may take many forms—government reinsurance guarantees, and the form of easing eligibility requirements. Their overall effect has been similar: increased economic stability combined with existing trade credit insurance.

Some observers have expressed concern that pandemic incentive programs and government-backed schemes allow "zombie companies" to continue operating and we share this point of view. Zombie companies are loss-making businesses with heavy debt, usually with low cash reserves and an inability to invest or grow. Even before the pandemic, there were many zombie companies in Europe and North America, and their volume is likely to increase dramatically due to the impact of COVID-19. The number of bankruptcies plummeted during the global recession in 2020, a signal that pandemic relief may be supporting businesses that became inviable before the COVID crisis. Providing loans and other support to keep zombie companies alive can prolong economic weakness and eventually lead to mass bankruptcies.

Marsh also covers vaccination consequences. As a result of vaccination, there will be an even greater stratification of society into rich and poor. This will lead to public unrest in many countries.

World Economic Forum

Marsh's findings coincide with the conclusions of the World Economic Forum on global risks for 2021. The experts believe that the spread of infectious diseases is the greatest threat to the stability of the planet for the next two years.[9]

According to the study, the COVID-19 pandemic has added 12 new stability risks worldwide, increasing the number to 35. The list of new risks includes the collapse of multilateral institutions, the collapse of system-forming industries, the collapse of social security systems, digital inequality, the concentration of digital power, the failure of

[9] World Economic Forum (n.2).

technology management, the rupture of interstate relations, the politicization of strategic resources, the widespread negative reaction to science, prolonged economic stagnation, serious deterioration of mental health, and mass disillusionment of young people.

Most political risks are included in a list of long-term risks: the proliferation of weapons of mass destruction, the collapse of states (Osipov, 2021b), the loss of biodiversity, the crisis of natural resources, and malicious technological advances.

Coface

The results of the annual survey on the political risks, published in the new Coface Country and Industry Risk survey, show that the coronavirus pandemic has significantly exacerbated social and political tensions in several countries around the world due to the growth of poverty and unemployment caused by the crisis, as well as the widening income gap between different segments of the population.

Coface experts this year included in the political risk assessment model not only traditional indicators but also the COVID-19 pandemic response efficiency index, which reflects the degree of effectiveness of the measures that the authorities have implemented to resolve the pandemic crisis. The index is based on the severity of lockdowns and the dynamics of morbidity. The results of the analysis carried out by Coface show that COVID-19 not only increases socio-political tensions but also exacerbates the protest mood in social movements formed before the pandemic. As examples, they provide France, Hong Kong, and Chile.[10]

In Russia, the index of socio-political tension is around 60%—about the same level as in China, Thailand, Egypt, Nigeria, and Turkey. For comparison—in the United States and Spain, the index is about 30%, in the UK, Sweden, and Denmark-just under 25%. The efficiency index of the response to the corona crisis pandemic in the Russian Federation is about 30%. According to this indicator, Russia is next in the ranking to India, Ukraine, Singapore, China, Morocco, and Saudi Arabia.[11]

Coface experts also note a high level of political risks and a low index of the effectiveness of the authorities' response to the pandemic crisis

[10] Coface (n.3).

[11] Ibid.

in some Latin American countries (Brazil, Mexico, Peru, Colombia) and South Africa. That implies that COVID 19 has widened the gap between developing and developed countries.

Talking about developed markets, the highest level of public dissatisfaction with the response of the authorities to the coronavirus pandemic is observed in Spain, the United States, Great Britain, and France. Among the emerging markets, the highest level of socio-political tension was recorded in Turkey and Iran. That corresponds to the countries marked as red (high risk) and orange (significant risk) on Marsh Political Risk Map.[12]

Ernst and Young

Experts believe that because of the coronavirus pandemic, trade disputes, climate change, and many other factors, the impact of political decisions, events, and conditions on the performance of companies and markets, as well as the economies as a whole, may reach the highest level since the end of World War II.[13]

According to Ernst and Young, as the pandemic has geopolitical nature, it affects such areas as national security, global leadership, and international cooperation and competition. In addition, in many countries, the coronavirus has exacerbated problems of economic inequality, access to health services, and social injustice.

EY is sure that the global business environment this year will be shaped by the geopolitical consequences of the coronavirus. "Vaccine nationalism", export controls, restrictions on the cross-border movement of people, and the pandemic-induced processes in domestic politics contribute to the emergence of political risks around the world. As a result, there is an urgent need to review supply chains, personnel decisions, and approaches to business sustainability.

The policies of the major powers-especially the US, EU, and China-will also play an important role in 2021, according to experts. China and the United States will continue to work to reduce their strategic interdependence amid highly complicated trade relations, technological competition, industrial rivalry, and contradictions over issues related

[12] Political Risk Map (n.6).

[13] Ernst & Young (n.4).

to China's sovereignty. Meanwhile, the EU will try to use its trade, investment, and industrial policies, as well as its ability to influence the formation of international norms and standards, to move towards strategic autonomy.

Companies will also face several important trends related to regulatory and policy changes. The world is entering an era of neo-etatism (from the French état "state")—an ideology that supports the active role of the state in ensuring the interests of society. The fight against the coronavirus has not only sharpened the debate about economic independence but also forced many countries to return production to their territory and diversify supply chains. In addition, plans to stimulate the economy after the pandemic is likely to include ambitious programs within the framework of climate policy. The fact that more countries are announcing their goals for achieving carbon neutrality puts pressure on the laggards and strengthens the position of supporters of more decisive action ahead of the next UN Climate Change Conference (COP26), scheduled for November 2021.

The Joe Biden administration intends to review US policy in 2021. The new president announced a course to strengthen industrial and environmental policies, in addition, changes are likely in the immigration, antitrust, and trade spheres. In other words, the USA will be among the leading countries implementing neo-etatism.

For the debt of developing countries, 2021 is likely to be a critical year. Of the major markets, the most serious financing problems are expected in Brazil, India, Mexico, and South Africa. Despite international efforts to ease the debt burden, the pandemic and geopolitical developments are likely to make it more difficult to address these challenges. A possible increase in the financial and tax burden on businesses will impede growth in key markets.

The Indo-Pacific region is becoming the main arena of global competition in the twenty-first century, as evidenced in particular by the growing tensions between India and China and Australia and China in recent times. In 2021, the geopolitical situation in the region may become even more unstable against the background of greater independence in the actions of countries with high and medium levels of influence in the region, which at the same time are trying to balance between the United States and China. Government intervention in the economy will affect growth and investment strategies in these countries, and trade agreements and maritime policies can change the structure of supply chains.

In addition to the above, EY draws attention to the fact that conditions are favorable for the emerging of another wave of public unrest. In 2021, the following five factors could trigger protests: pandemic restrictions, inequality, social injustice, climate change, and government dissatisfaction. In 2020, public unrest reached its highest level since the Arab Spring. According to International Labor Organization the social unrest index is equal to 24 in 2019 compared to 22.54 in 2018. In 2020 it was even larger—24.98. During Arab Spring in 2011 the value was the highest (26.59). After a few years of relative calm, social unrest is on the rise again, though the peak level of 2011 has not yet been surpassed.[14]

In some cases, political leaders have themselves been infected with the virus—a potentially dangerous situation in countries facing security challenges or where the rule of law is weak. In this regard, the risk of disruption of operational activities is likely to arise. In addition, due to the increased expectations of stakeholders, the reputational risks of companies may increase.

Willis Towers Watson

Willis Towers Watson begins the description of political risks with the economic situation. The business costs of the COVID-19 outbreak are rising, and some companies may not have enough cash reserves to cope with them. Global supply chains were initially hit hard by the closure of Chinese factories, and the disruption has continued to spread. COVID-19 has also undermined demand for many commodities, such as energy, leading to a collapse in global oil prices. These problems can lead to geopolitical risks.

The population suffers from a lack of food, jobs, or medicine, as governments are perceived as unable to respond to social problems. This is a source of political discontent or civil unrest in some areas. Some early examples include the Brazilian protests over the reaction of President Bolsonaro and the pan-African demonstrations that began over food prices and shortages.

Experts believe that COVID-19 may strengthen the current wave of populist reaction to globalization. Nationalist governments tend to seek

[14] International Labor Organization. (2020). *World employment and social outlook: Trends*. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_734455.pdf.

export and import controls, interference with foreign ownership of local companies, asset confiscation, or expropriation. If the level of national interest in certain industries, such as medicine, food, and technology, or manufactured goods, increases, we may witness growing interventions on the part of some governments.

Weaker economies may not be able to cope with the economic shock, and that may lead to such political risk as default on payments. Even in stronger economies, there will be pressure on governments to divert national budgets to fight the virus and provide economic incentives or bailout packages, and hence payment priorities may be. COVID coincides with the period when most countries are overwhelmed with debt—$ 72.7 trillion. (92.5% of global gross domestic product) for sovereign borrowers and $ 69.3 trillion (88.3% of GDP) for non-financial corporate borrowers, according to the Institute of International Finance. Argentina, Ecuador, Zambia, and other countries have already submitted a formal notification that they are in desperate need to restructure their debts.

Discussions

It is worth mentioning that the correlation between economic consequences and political risks plays a key role in all reports considered. However, the perspective differs. On the one hand, experts cover negative economic consequences that arise from political risks such as the more active role of the government, more self-dependent nations as states are looking for ways to protect their country. On the other hand, economic downfall reflects on political stability through social discontent.

That leads to the conclusion that on a national scale gloomy economic conditions fuel social discontent. Because of food shortage and unemployment people are likely to demonstrate their discontent through mass protests. In their attempt to protect their country governments imply political measures that impede globalization and put under the risk world economy. Nationalist governments tend to seek export and import controls, interference with foreign ownership of local companies, asset confiscation, or expropriation. Moreover, the government applying to bailout and extended social programs find themselves under threat of being unable to pay off debts.

The more protectionist policy is not the only issue. The huge amount of fiscal and monetary stimulus as a way to flatten political risks around the world will lead to an increase in global inflation, which has been

at a low level in recent years. According to the consulting company Yardeni Research,[15] the assets of the leading central banks (the US Federal Reserve, the European Central Bank, the Bank of Japan, and the People's Bank of China), reflecting the size of cash injections into the financial sector and the real economy, by November 2020 increased by 41.5% in annual terms and reached $27.9 trillion. The global M2 money supply (cash and non-cash) and other monetary aggregates have increased dramatically during the pandemic.

However, Credit Suisse notes that since 1990, the growth of the money supply and the consumer price index have hardly correlated, and it is unlikely that in the foreseeable future the relationship between the two aggregates will be restored.[16] Inflation risks can only arise if governments increase spending even more sharply trying to smooth social discontents, and the multipliers of these expenditures are much higher than they are now. Or if central banks begin to serve the political tasks of governments. Most likely, the post-bubble world will be characterized by "sluggish economic growth and barely noticeable inflation", Credit Suisse writes, although the growth of inflation remains an extreme risk that can become real due to demographic changes or political factors.

The pandemic has led to an expansion of the powers of states, which have allocated much more funds to fight the crisis than, for example, during the global financial crisis of 2008–2009. The emergency has allowed some state leaders to make emergency decisions bypassing parliaments through their executive orders. When the crisis is over, some leaders could want to keep their extended power. The question is how political risks will react and what economic consequences should be.

It is worth mentioning that negative economic consequences may arise as a result of inferior FDI flows stifled either by political risks or protectionism.

[15] Yardeni, E., & Quintana, M. (2021, May). *Central banks: Monthly balance sheet*. https://www.yardeni.com/pub/peacockfedecbassets.pdf.

[16] Credit Suisse. (2020, December). *COVID-19—Accelerating existing socio-economic trends*. https://www.credit-suisse.com/about-us-news/en/articles/media-releases/covid-19---accelerating-existing-socio-economic-trends-202012.html.

Conclusion

The pandemic crisis has significantly aggravated social and political tensions in many countries around the world, with a particularly explosive situation in developing countries that have been hit by the COVID-19 pandemic to the largest extent. To sum up experts highlight the following political risks:

- Geopolitical implications of COVID-19
- Move towards strategic autonomy and protectionism
- The Rise of Neo-Etatism
- U.S. Policy Review
- A critical moment for developing countries debt
- Geopolitical processes in the Indo-Pacific region
- A new wave of public unrest
- Risk of high inflation.

Among the most crucial political risks on the national scale are the growing number of mass protests and other forms of social unrest as a result of food shortage, unemployment, a greater stratification of society into rich and poor. In their efforts to mitigate political instability through bailouts and massive social programs governments create great political risks to the world economy such as debt crises and uncontrolled inflation especially in developing countries. Moreover, nationalist governments become popular because of the pandemic. They tend to seek export and import controls, interfere with foreign ownership of local companies, confiscate asset that not only creates new political risks but put globalization under threat as well.

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CHAPTER 11

ESG Risks and Opportunities in the Post-COVID Period

Alexander S. Yukhno and Natalia V. Sevalneva

Introduction

The 2019 World Economic Forum's Global Risk Report featured pandemics among a wide range of collective challenges (World Economic Forum, 2019). In 2020, the COVID-19 pandemic triggered an economic disruption of an unprecedented magnitude and speed. As COVID-19 has spread globally, serious health concerns, compounded by economic crises, spread around the whole planet. Unlike in previous financial crises, the origins of the current crisis lay outside of the financial sector and affected the resilience of all global stock markets and economies. Responses to the pandemic have caused tensions that threaten global stability.

Simultaneously, it has been a great disruption for corporate governance and business processes across the world, driven by the need to

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completely reorganize business models, value chains, and communication with customers and employees in a short period of time. After the spread of COVID-19 in early 2020, boards of directors and management faced a multitude of challenges. Moreover, the pandemic accelerated already emerging ESG trends.

Now, more than a year after the World Health Organization declared the outbreak of the global pandemic on March 11, 2020, it is clear that the long-term consequences for financial markets are hard to predict.

The pandemic has accelerated the ESG agenda for economies and societies. Those companies that acknowledge ESG factors in their businesses have demonstrated better performance and higher profits in comparison with those which fail to do so (J. P. Morgan Asset Management, 2020). Moreover, elevated attention to social aspects of ESG is one of the key results of COVID-19. The pandemic has revealed its importance for business activities and put them in one line with other post-COVID trends such as digitalization and e-commerce, localization, and social distancing behavior (Yankovskaya et al., 2021).

A legally binding international treaty on climate change was adopted by 196 parties in Paris on December 12, 2015. The so-called "Paris Agreement" aims to substantially reduce global greenhouse gas emissions to limit global warming compared to pre-industrial levels (United Nations, 2015). Since its adoption, considerable steps toward achieving Sustainable Development Goals were taken by both governments and investors. The UK Stewardship Code 2020 also promotes sustainable development, and states in its 7th Principle: "Signatories systematically integrate stewardship and investment, including material environmental, social and governance issues, and climate change, to fulfill their responsibilities" (Financial Reporting Council, 2020).

According to the 2020 Global Sustainable Investing Survey, 75% of respondents worldwide are currently considering integrating ESG into their investment decisions. At the same time, 53% of global respondents (425 investors in 27 countries) highlighted insufficient quality or availability of ESG data and analytics as a major barrier to wider adoption of sustainable investment goals (Blackrock, 2020).

In this paper, the authors investigate, analyze, and discuss the future of the UN Sustainable Development Goals (hereafter Sustainable Development Goals) which are implemented via the instrument of Environment, Social and Governance (hereafter ESG) principles in Europe, the United States, and Russia.

The main goal was to predict the post-COVID trends and provide the companies and the boards with recommendations on how to seize ESG opportunities for the profit of the shareholders and the planet.

Methodology

The research is based on an analysis of scientific and practical sources in the fields of ESG and corporate governance. The authors apply historical analysis, empirical and comparative analysis, expert assessments, synthesis, deduction, and induction, through which the main trends in the application of ESG-related requirements which affect the implementation of business strategies of leading companies could be identified. The analysis also covered the practical tools of integration of ESG factors into investment decisions by the application of various ESG reporting standards[1] and sustainability ratings.

The research data was obtained from open sources on the Internet, official websites of international organizations (the UN, WEF SEC, etc.), Russian, European, and U.S. regulation authorities, international companies (Blackrock, Ernst & Young, J. P. Morgan, etc.), and other institutions and organizations relevant to ESG regulation framework (rating agencies, reporting organizations). The authors have analyzed more than 30 theoretical research papers and empirical studies about ESG factors in order to arrive at their conclusion on ESG trends.

The importance of ESG factors for institutional investors from different countries was constantly increasing in the last decade. Investors' financial goals became aligned with internationally recognized Sustainable Development Goals. In the United States, sustainable investing continues to expand and grew from $12.0 trillion at the start of 2018 to $17.1 trillion at the start of 2020 (a 42% increase), representing 33% of the total US assets under professional management (US SIF, 2020). However, while corresponding to high growth rates, this area also has become one of the debated investment strategies over the recent decades, due to the fact that sustainable investing is traditionally regarded as costly. In their study, Fabio Alessandrini and Eric Jondeau (2021) conclude that this is no longer a matter of fact, as the ESG portfolio's Sharpe ratio—a measure of investment portfolio effectiveness—was above that of the benchmark

[1] Under ESG reporting is implied sustainability reporting, corporate social responsibility reporting, and ESG risks reporting and purpose led reporting (water, biodiversity, etc.).

in the United States, in Europe, and worldwide, from January 2007 to December 2018. Another study proved that inclusion of ESG factors into investment decisions would have been the right strategy during the recent pandemic, as the performance of the fund constructed considering the ESG Risk Rating was better than corresponding for S&P500 index (Samyukth, 2021).

Results

The record inflows into European sustainable funds in the second quarter of 2020 were driven by growing investors' interest in ESG issues (Morningstar, 2020). The increased importance of ESG is supported by several factors: transparency of ESG-related information, stakeholder activism, societal expectations, and investor emphasis on ESG (BCG, 2020). Considering not every ESG factor will be important to all businesses and sectors, it is essential for both companies and investors to be able to identify and manage those factors that may affect the business.

The 16th edition of the World Economic Forum's Global Risks Report supports a shift toward greener economies and states that climate change continues to be a long-term risk for the world (World Economic Forum, 2021a). The ESG risks represent a variety of interdependent issues and threats to Sustainable Development Goals which include such global challenges as poverty, gender inequality, climate change, environmental degradation, health, and well-being (Table 11.1).

Risk interconnectivity is high, and the occurrence of any of them may lead to devastating global economic disruption, as was clearly demonstrated in 2020. Another example of the correlation between ESG risks and business operations was the fuel spill from a storage tank owned by the biggest Russian mining company PJSC "MMC 'Norilsk Nickel'" into rivers and lakes in Russia's Arctic north in May 2020. The damages paid constituted the largest environmental fine to have ever been imposed in Russia.[2] As a result of the oil spill, the Federal Service for Environmental, Technological, and Nuclear Supervision of Russia plans to introduce changes to the current legislation in order to prevent the occurrence of similar accidents.

[2] PJSC "MMC "Norilsk Nickel" https://www.nornickel.com/news-and-media/press-releases-and-news/nornickel-pays-full-damages-in-connection-with-fuel-spill-at-norilsk-s-combined-heat/type=releases.

Table 11.1 ESG risks by factor

Environment Factor	*Social Factor*	*Governance Factor*
•Climate crisis • Extreme weather conditions • Natural disasters •Human-made environment accidents • Biodiversity loss • Carbon footprint increase • Air and water pollution • Toxic waste • Soil exhaustion • Natural resources depletion	• Global pandemics and infection diseases • Starvation • Water crises • Workers health and safety hazards • Local and ethnic population loss • Human rights violation • Labor rights violation • Child labor • Migration • Small and middle business bankruptcy • Social instability • Discrimination, harassment, and bullying	• Corruption • Money-laundering • Fraud • Incompliance with laws and regulations •Corporate governance failure • Strategy inadequacy • Lack of board members and management diversity

Source Created by the authors on the basis of UN Sustainable Development Goals

In the digital age, credit ratings alone are no longer sufficient to simultaneously serve interests of all stakeholders; it is not only financial data that is now available for investment decision process, but it is also necessary to evaluate the readiness of the company to abide by Sustainable Development Goals. PricewaterhouseCoopers' research suggests that traditional financial metrics are no longer able to fully demonstrate the resilience of a company for a wide range of stakeholders. In this regard, companies have begun to measure their achievements in the fields of the environment (carbon emissions, energy efficient technologies, etc.), society (percent of employee digital education, worker safety, employee satisfaction, etc.), and governance (number of female and minority directors, board oversight of climate change-related risks, etc.). The incompliance or lack of ESG reporting transparency may undermine long-term value and capitalization of the company.

Bloomberg Financial Services[3] recommend investors to apply a variety of non-financial criteria and metrics before taking investment decisions, such as:

- Board composition scores, which rank the relative performance of companies across industries on measures of diversity, refreshment, director roles, and independence;
- Carbon footprint, which assesses how prepared a company is for a low-carbon and renewable energy transition relative to its peers;
- ESG news coverage, which provides an analysis of companies' environmental and social behavior;
- ESG disclosure scores, which rate companies on their level of ESG disclosure.

At the same time, each company needs to independently determine the most effective ways to measure and report on progress, including indicators that demonstrate the company's commitment to mitigating ESG risks and seizing opportunities.

In response to increasing investor demand for non-financial information from companies, a number of sustainability accounting frameworks have evolved to improve the standardized disclosure of ESG information (Bose, 2020). In short, ESG reporting is disclosure of material ESG risks and opportunities, from both a qualitative and quantitative perspective. The main trends in ESG reporting include sustainable reporting expansion and expected regulatory pressure (Blank & Lasdon, 2021). In 2020, 90% of S&P 500 companies issued a sustainability report, which is a considerable increase from just 20% in 2011. The EU climate regulation—which is currently being developed in order to achieve a goal of net zero greenhouse gas emissions by 2050—is expected to come into force soon and reshape the ESG reporting format from voluntary to binding.

Russian carbon legislation, however, is falling behind. The draft of greenhouse gas emission control law elaborated by the Ministry of Economic Development, which is being discussed by the Russian state authorities, includes two key areas: mandatory carbon reporting and

[3] Bloomberg. https://www.bloomberg.com/professional/solution/sustainable-finance/.

green certificates legislation.[4] Currently, the pioneer of the green certificates market is PJSC "Sberbank," which, prior to establishment of formal market regulation, voluntary signed the agreement with the international non-profit organization I-REC Standard Foundation (I-REC local issuer "Goal Number Seven") on joining the international energy traceability standard I-REC. Remarkably, the contracts are traded on the decentralized blockchain platform developed by PJSC "Sberbank."[5] The platform will unite all participants in the renewable energy market and use smart-contracts to execute deals (Yukhno, 2020; Yukhno & Osipov, 2021).

Companies are already applying a number of non-financial reporting metrics relating to ESG factors attempting to assess ESG risks and opportunities for their businesses in order to be prepared for new challenges and tasks.

The market participants seek to analyze how companies evaluate risks and develop business strategies applying ESG metrics. Providing this information can help improve a company's reputation, while withholding it could potentially damage shareholders' value and access to capital. Such information would also point to possible risk areas and factors that could potentially endanger the company's business. With growing pressure from investors to disclose ESG metrics, companies are incorporating ESG reporting standards. In this regard, while it is not mandatory in many countries, investors and other stakeholders already view it as an instrument for improving the effectiveness of business in the long term. In Russia, the majority of so-called blue chip companies issue sustainable reports in order to attract international investments.

There is a variety of different ESG reporting frameworks and standards with various scoring systems and data frameworks, such as Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), Task Force on Climate-Related Financial Disclosures (TCFD), and others. However, companies often express concerns over a lack of guidance as to which disclosure standards to follow. At the same time, investors complain that sustainable reporting information is not always

[4] https://sozd.duma.gov.ru/bill/1116605-7/.

[5] International REC Standard Foundation, https://www.irecstandard.org/news/developments-in-the-russian-market-for-i-recs/.

comparable and does not provide a sufficient level of details and consistency to properly factor ESG considerations into investment decisions (Davies et al., 2020).

Similar to financial reporting standards, which were synchronized at local and global levels, one of the recent global tendencies relates to the alignment and consolidation of ESG reporting requirement. As such, the Trustees of International Financial Reporting Standards (IFRS) plan to establish new reporting standards that address enterprise value, which captures expected value creation for investors in the short, medium, and long term and is interdependent with value creation for society and the environment.[6]

New formats of sustainable reporting emerge every year, including industry-specific ESG risk reporting, e.g., water pollution risk. The first major company to publish a water report in Russia was PJSC "Polyus," where the company included a set of managerial and technical initiatives to make water intake more efficient.[7]

In order to support investors with their commitment to Sustainable Development Goals, stock exchanges, credit agencies, and other market players traditionally responsible for reliable financial information are developing various ESG ratings (SAM CSA by S&P Global, CDP Index, Sustainalytics by Morningstar, MSCI). The adoption of ESG ratings by companies is constantly rising. The number of firms with MSCI-ESG scores increased from 1,700 in January 2007 to more than 8,500 in October 2020.[8] The main difference between ESG ratings and credit ratings is their divergence or variance from one rating organization to another for one and the same company. While credit ratings for a particular issuer are generally similar, the ESG ratings may vary considerably (Dimson et al., 2020).

Considering ESG principles helps a company identify and mitigate material risks. Despite the pandemic, assets under management in funds that abide by ESG principles have surpassed $1 trillion in 2020.[9] The

[6] IFRS. https://www.ifrs.org/news-and-events/news/2021/03/trustees-announce-strategic-direction-based-on-feedback-to-sustainability-reporting-consultation/.

[7] PJSC Polyus. https://polyus.com/en/media/press-releases/polyus-publishes-its-first-water-report/.

[8] MSCI. https://www.msci.com/.

[9] UBS Group AG. https://www.ubs.com/global/en/wealth-management/chief-investment-office/market-insights/house-view/daily/2020/latest-10082020.html.

analysis of 11,000 mutual funds by Morgan Stanley Institute for Sustainable Investing between 2004 and 2018 reveals that sustainable funds have lower volatility and a 20% smaller downside deviation compared to the traditional funds. In 2019, sustainable strategies outperformed traditional funds by 2.8 percentage points. During the pandemic, in the first half of 2020, sustainable strategies declined by 3.9 percentage points less than traditional strategies (J. P. Morgan Asset Management, 2021).

Commitment to ESG principles encourages companies to support ESG solutions by issuing sustainable (green, social, sustainability, sustainability-linked) bonds. Bond markets have responded to the financing needs of issuers for COVID-19 response and recovery via social bonds that raise funds for new or existing projects targeting positive social outcomes (Pimco, 2020). For example, Alphabet Inc., the shareholder of Google Inc., issued $5.75 billion in sustainability bonds, the largest sustainability or green bond by any company in history, to support environmental and social initiatives.[10]

During the current pandemic, digital technologies supported the continuity of business processes and contributed to the sustainability of organizations. The digital transformation strategy of a company has become an important tool for introducing new technologies (artificial intelligence, big data analysis, virtual reality, Internet of Things, robotics, etc.) in order to reduce the negative impact on the environment and stimulate transition to more environmentally friendly methods of work.

The Sustainable Development Goals in the post-COVID period provide an opportunity for companies to accelerate the adoption of digital technologies in their operations to build resilience. As the global economy moves further into the digital era, there are a number of existing and emerging technologies that companies can utilize to improve their ESG data reliability and quality and apply advanced audit techniques. Examples include software enablement and advanced analytics, virtual reality, drones, and robotics (Ernst & Young, 2020b).

The U.S. Securities and Exchange Commission's Investor Advisory Committee recommends that investors receive reliable, material ESG information upon which to base investment and voting decisions (SEC, 2020b). Consequently, incorporating ESG factors into the company's digital business strategy will accelerate the transition to ESG reporting,

[10] Alphabet Inc. https://blog.google/alphabet/alphabet-issues-sustainability-bonds-support-environmental-and-social-initiatives/.

especially during the Fourth Industrial Revolution (Konina, 2021; Yukhno, 2021).

Discussions

In his 2021 letter to CEOs, BlackRock's Chairman Larry Fink urges companies to implement business model compatible with a net zero economy into long-term strategy to be reviewed by the board. Even though there are still doubts and opponents to the practicality of ESG factors within the business and academic community (Cornell & Shapiro, 2020), in January 2021 the World Economic Forum (WEF) also announced that over 60 of the world's largest companies have committed to providing disclosure against core ESG metrics developed by the WEF and its International Business Council (WEF, 2021b).

One of the main questions investors committed to principles of responsible investment should ask themselves is whether they should abstain from cooperation with those companies that do not adhere to the sustainability principles in their activities. These questions are actively discussed throughout the financial industry. "We expect this will be a hotly debated issue in 2021," say State Street Global Advisers, which has $3.2tn of assets under management, in an ESG outlook report for the new year (Temple-West, 2021). Thus, for public companies which have not yet implemented ESG reporting, the aforementioned risk also becomes a key financial risk. This can be evidenced by a recent example when the PIMCO fund refused to purchase social bonds of JSC "Russian Railways," since in the structure of the cargo transportation, carbon-containing cargoes account for more than 50% in the structure of cargo transportation (Belikov, 2021).

In order to resolve ESG reporting problems and comply with changing rules, organizations interested in long-term investments are actively reviewing their business strategies, processes, and reporting. A sound ESG strategy can create intrinsic value by properly managing key risks and developing opportunities. Furthermore, if a company is transparent about how it addresses stakeholder interests in relation to Sustainable Development Goals, ESG ratings and shareholder value can rise over time.

Recognizing the scale and multifaceted nature of ESG factors, which creates both risks and opportunities to organizations, the largest U.S. public pension fund CalPERS identifies four channels of ESG strategy:

- Engagement—to ensure that the companies invested in are reducing global warming emissions;
- Advocacy—to support policies and regulations that will facilitate the energy transition;
- Integration—to make investment decisions based on consideration of climate change risks and opportunities;
- Partnership—to interact with other stakeholders (CalPERS, 2020).

Executing such a strategy would require constant coordination among stakeholders (U.S. Securities and Exchange Commission, 2020a).

A key role in the implementation of ESG policy should be played by the board of directors of a company. In 2020, just 45% of directors said that ESG factors are regularly a part of the board's agenda, up from just 34% in 2019 (PricewaterhouseCoopers, 2020). Because ESG strategy should align with business strategy and focus on material risks, the board of directors needs to understand how ESG risks are mitigated. The board needs to assign detailed oversight to a specific committee in order to ensure that the ESG strategy is launched smoothly. Ultimately, ESG factors will be relevant to all committees. As such, in 2020, the biggest Russian bank PJSC "Sberbank" formed the ESG Committee, which developed and presented the ESG transition strategy until 2023.[11]

In order to integrate ESG Strategy into their business strategy, the board is advised to consider the following recommendations:

1. The board should ensure the management has established control framework around measuring and monitoring a company's progress against milestones and goals set by ESG strategy;
2. The board should review how ESG Risks are identified, prioritized, and included in Enterprise Risk Model by the management;
3. The board should decide on the allocation of the oversight of ESG risks to a special purpose board committee or leave it within general remit considering the capacity, interest, and competence of board members;
4. The board should understand how ESG factors impact capital allocation decisions;

[11] PJSC Sberbank. https://press.sber.ru/publications/sber-predstavil-svoiu-esg-strategiiu-na-sessii-moskovskoi-birzhi.

5. The board should consider if ESG reporting audits are required in order to ensure the quality and reliability of ESG data.

Key steps in streamlining ESG strategy implementation may include:

- Reviewing the board composition (gender diversification, stakeholders representation, independent directors, inclusion of ESG factors);
- Increasing disclosure of environment and social factors;
- International ESG regulation monitoring and implementation;
- Reviewing the communication strategy of ESG factors implementation to the market (Ernst & Young, 2020a).

Thus, the board's mission is to confirm the alignment of the company's ESG strategy with the business strategy and corresponding international recommendations.

Conclusions

One of the key consequences of the current pandemic on ESG is the acceleration of ESG trends driven by investors around the globe and by companies' appetite for incorporation of ESG into their business strategies. The following ESG trends are likely to emerge or become more evident in 2021:

Data qualityand quantity improvement. In response to demand and regulatory drivers, the quality and quantity of ESG data will continue improving, including big data collection and analysis, ESG data auditing, and remote access to ESG data.

Growing Role of Social Aspects. Due to the consequences of the COVID-19 pandemic, the number of people globally living in extreme poverty (less than $1.90 a day) will increase from 115 to 150 m people in 2021 (World Bank, 2020), bringing such social factors on the agenda. This will intensify the measures the governments and companies should take in order to fight global poverty and starvation.

Alignment of Different ESG Reporting Standards. As the importance of ESG and its recognition by business and investment community grows, the movement toward the alignment of different ESG reporting standards will follow.

Alignment of Different ESG Ratings. ESG ratings help investors to identify the most efficient companies in terms of their adherence to Sustainable Development Goals. As with ESG reporting standards, the consolidation and alignment of ESG ratings will occur.

Board's increased attention to Sustainability. Special purpose board committees will be established more often in order to ensure the corporate strategy and risk management consider also ESG factors.

Environmental legislation tightening. The governments will further tighten their environmental legislation to support Sustainable Development Goals and prevent the climate crisis.

Increasingly, leading companies view ESG factors as an essential part of their business strategy. Coupled with evolving demands from investors and other stakeholders, new ESG regulations impact companies' ability to raise capital. The change of corporate paradigm requires investors to understand how companies approach ESG factors in their business model and strategy in the long-term, not just how they respond and react to the current challenges in the moment. Understanding the role of ESG in a company's business model and its integration with risk management and investment framework would bring additional value to shareholders.

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CHAPTER 12

Trust Issues and Value Co-Creation in the Post-COVID Period

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Introduction

The world faced an unprecedented event—the coronavirus pandemic in 2020. The previous pandemic occurred more than 100 years ago, and it would be incorrect to compare it with the current one since globalization has led to global economic integration. Today, one can see how financial events taking place in one country can instantly affect the stock exchanges of other countries. Many relationships were disrupted, the usual way of life changed when the pandemic began. But life does not stand still: humanity has learned to adapt to changes throughout its history. Even though the acute phase ended in 2021, several countries still observe a strict isolation regime. The world is in a transition that may last several years, and this will largely depend on the vaccine's availability and effectiveness, as well as on how fast the sustainable herd immunity develops.

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Many countries are adopting some measures to support businesses and stimulate the economy, which should help both developed and developing countries to recover and boost their economies.

When the pandemic began, scientific and technological progress in many areas, especially in the field of digital communications, had significantly outstripped the willingness and capacity of economic actors to accept and implement their achievements. Humanity as a whole is conservative, so it usually takes many years to transform the usual processes, even when the economic feasibility of changes is proven (e.g., the so-called QWERTY effect (David, 1985)). The pandemic has catalyzed lifestyle changes and disruptions in global value chains. We had to create new ways of subject interaction, build new supply chains, and change both internal and external communications of economic subjects. When COVID-19 spread, humanity quickly moved to the digital format of communication. Human-Centered Design Machines (HCDM) using such software platforms as Zoom, TrueConf has become a new tool for collaborative value creation with the consumer. Today, one can take part in foreign investment projects in another country, buy various assets, means of production and consumer goods, as well as make financial services more convenient, including the global ones. That is, the collapse of trust, differentiated by territorial and sectoral characteristics, was transformed into trust in the emerging new institutions and the changing old ones. Of course, these processes differ from country to country and require in-depth study, but it cannot be denied that trust plays a crucial role in economic processes and their transformation during the pandemic.

Methodology

Various scientific methods were used in the study. For example, we used economic and statistical methods to analyze several financial markets and characteristic periods of decline associated with the economic crisis caused by the coronavirus pandemic have been identified (Imerman & Fabozzi, 2020). The institutional analysis allowed us to show the structural and logical connections between economic actors in the transforming reproductive process, where consumers have become full-fledged participants in the joint value creation (Osipov, 2020).

The problem of trust between economic actors has been the focus of the following authors' attention (Contractor & Reuer, 2014; Nefedov & Panibratov, 2017; Osipov, 2020).

The following authors considered the problems of financial services transitioning to the digital format: Inozemtsev (2021a, b), Osipov (2020), Ponamorenko (2020), and Stepnoff (2020).

Gambetta (1998) and Locke (2001) made important contributions to the theories of trust and institutional environment formation.

We used data from Refinitiv Eikon, WorldBank, OECD, and Euro-Stat,
Association of Mutual Funds in India, https://www.amfiindia.com/.
Association of Mutual Funds in Chile (Associacion de Administradoras de Fondos Mutuos de Chile A.G.), https://www.aafm.cl/.
The Investment Fund Institute of Canada, https://www.ific.ca/.
Korea Financial Investment Association (KOFIA), http://www.kofia.or.kr/.
The Central Bank of the Russian Federation, http://www.cbr.ru.
Investment Company Institute (ICI), https://www.ici.org/.
Morningstar, https://www.morningstar.com/.

Results

The economic situation since the global pandemic began has created new serious challenges for most states, including those related to the decline of trust, which was particularly pronounced in the financial sector.

First of all, trust refers to the feeling toward those with whom a person interacts, which is formed in early childhood and changes over time (Belyanin & Zinchenko, 2010). The economic effect of trust between citizens, businesses, and the state has become the subject of many scientific studies, according to which trust can be divided into several types: interpersonal (to each other)—also called horizontal trust, political (public trust in the state), institutional (to organizations—public, private, non-profit, media), and international (to other countries) (Gambetta, 1998; Locke, 2001).

If we take the economy, trust is necessary for all transactions between sellers and buyers, employees and employers, customers and contractors. The lower level of trust leads to higher transaction costs and the less one free interaction. The greater the need for protective mechanisms in the

work of economic actors, but the higher the share of unproductive labor in the economy, the less effective it is.

It should be noted that it is not just about transaction costs. It is very important that an economic actor can predict the reactions of society and the state to their actions so that there is trust at this level. If there is no trust, but some actor feels danger and threat, then all the efforts, any creative activity, will rest on the need to protect at all costs what one already has. The level of trust and economic activity (i.e., realizing the potential inherent in a person) are directly proportional: if we believe that others will not do us any harm, and institutions will represent our interests, we are inclined to try something new: invest money in a business, change jobs, build a corporation, etc. The higher the level of trust, the more the economic actor seeks to create, acquire, and the less afraid of losing. The correlation between life quality and the level of trust can be seen in the following figures: the leaders in the level of trust are those countries where respondents are more likely to say that most people can be trusted. These countries are leaders in both per capita GDP and economic growth (Algan & Cahuc, 2010). First of all, these are the Scandinavian countries: Denmark, Finland, Norway, and Sweden are absolute leaders in social, institutional, and political trust, which is reflected in their indicator of social well-being.

There may not be enough research on the topic of trust in the context of the COVID-19 pandemic, but the first results are already available. A study by two French authors from the University of Bordeaux, Olivier Bargen and Ulugbek Aminzhonov, titled "Trust and Compliance to Public Health Policies in Times of COVID-19" is based on Google mobility data and data on trust from the European Social Survey (ESS) report in European countries. The authors used regional differences in political trust across Europe to test whether trust in authorities before the crisis affected compliance with isolation policies, as measured by changes in people's mobility. As a result, it was found that European regions with a higher level of political confidence witnessed a greater decline in mobility. The same is true within countries: the authors compared the regions where trust is high, above the national average, with the regions where the level of trust is below the average—and found that the mobility declined 14–16% greater in the regions with high trust. If people believe that the restrictions are imposed by trustworthy politicians, then they are willing to comply with even tougher restrictions (Bargain & Aminjonov, 2021).

The work of the Italian authors "Asocial Capital: Civic Culture and Social Distancing during COVID-19" analyzed the compliance with the movement restrictions introduced in March 2020 on the Italian example. Regions with high and low social capital (civic capital), an indicator that includes trust, were compared. They concluded that if all Italian provinces had the same high social capital as those in the top 25, the COVID mortality rate would be 10 times lower (Durante et al., 2020).

The change in the global level of trust during the pandemic is shown by the example of the following countries. The graphs show that there was a sharp drop in consumer and producer confidence indices and their recovery in the post-COVID period in all countries in March 2020 (Fig. 12.1).

Moving the focus from trusting the person to trusting the system, we can note the following. Economic actors have had to trust and at the same time not trust people for centuries. On the one hand, a human being, as a social animal, tends to dualism and cannot trust them, and otherwise, our costs will exceed any economic feasibility, but on the other hand, the human being also tends to doubt. Society is in search of balance, both at the level of individuals and at the level of institutional interaction. The developing digital technologies allow one to move to "doubt," as the verification cost is minimized. At the same time, it is dangerous to find oneself in a situation of falling into autocracy, or "digital totalitarianism" (Nefedov & Panibratov, 2017; Osipov, 2020), which means that it is very important to develop trust at all levels using various tools, such as checks and balances.

But do not forget that a person is characterized by a sensual approach and the habit of trusting is deeply embedded in our minds. In times of crisis, this is observed both at the household level and at the level of state institutions. Today, many areas of human life are changing because of the COVID-19 pandemic, and trust is transformed, but it does not decrease or disappear. Society is looking for and selecting new objects of the trust. The level of trust in digital systems increased due to the forced transition to their widespread use, which allowed us to see how convenient and secure they were.

The COVID-19 pandemic has changed all areas of life. We can trace the example of disrupted ties and the pandemic's impact on the financial market, the reaction of private and institutional investors around the world and their actions in the spring of 2020.

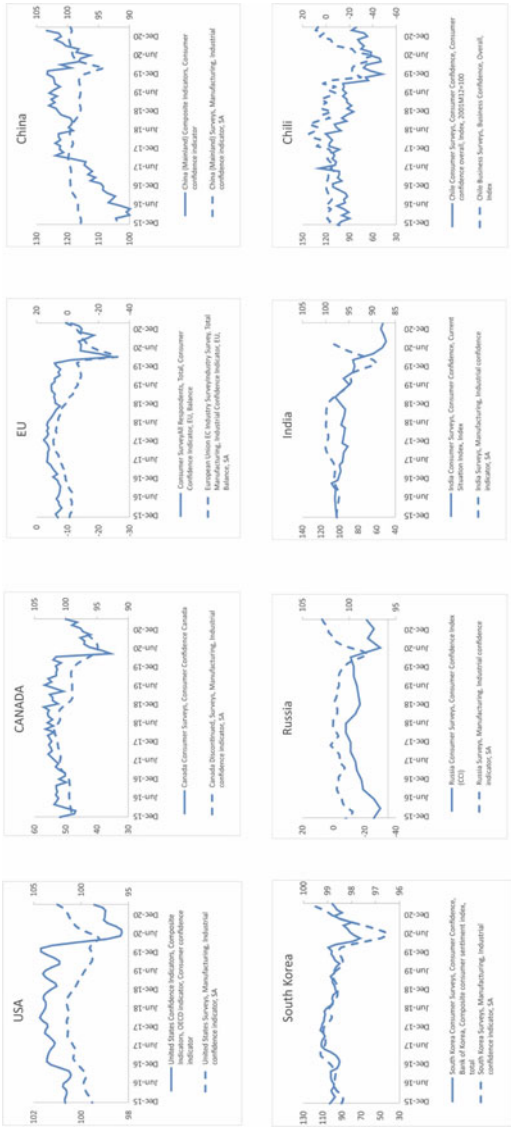

Fig. 12.1 Consumer and industrial confidence indexes of several economies (*Source* Created by authors)

The reason for studying the reaction of investors is that one of the consequences of the relationships' breakdown and loss of trust should be the outflow of funds from financial managers' clients since high uncertainty in the markets increased volatility and lowered indices, while investors prefer to withdraw assets in cash or transfer investments to more reliable assets. To confirm this hypothesis, we analyzed the situation in the investment fund market in different countries in the context of investment inflows/outflows.

Europe and the UK

In March 2020, when the epidemic swept through European countries, the stock market experienced a sharp increase in volatility, investors panicked and began to convert securities into cash, gold, and other highly liquid assets. This trend also affected investment funds. The EU is considered the world's second-largest investment fund industry with net assets of more than 10 trillion euros (according to Morningstar). According to the report of the Investment Company Institute,[1] UCITS lost about 6.2% of net assets in March. At the same time, the outflow from funds with low volatility net asset value (LVNAV) was 28%, while the one from the funds with variable net asset value (VNAV) was 16%.

When the ECB and the Bank of England intervened by providing funds, the value of corporate bonds was maintained, confidence in long-term markets was restored and capital outflows from UCITS was reduced, and growth rates were restored after April 2020.

India

Calculations based on data from the Association of Mutual Funds in India show that the outflow from all types of funds was about 4%[2] for the period January–March 2020. At the same time, the outflow from closed-end investment funds was less than 0.5%. As markets recovered since April 2020, open-end funds experienced inflows while closed-end funds continued to experience outflows (second quarter −10.8%; third

[1] https://www.ici.org/covid19/covid_working_group.

[2] Calculated by authors based on Association of Mutual Funds in India, https://www.amfiindia.com/research-information/amfi-quarterlydata.

quarter −7%; fourth quarter −5.5%). The continued outflow of capital from closed-end funds can be attributed to the high transaction costs of exiting this type of fund, as well as the extended terms for dealing with investment units compared to open-end funds. We suppose that the current trend indicates the flow of investments from long-term funds to short-term ones.

Chile

Analyzing the data disclosed by the Association of Mutual Funds in Chile (Associacion de Administradoras de Fondos Mutuos de Chile A. G.), we can note a sharp decrease in the inflow of capital in all categories of funds in March 2020 compared to February 2020. At the same time, the inflow of funds in March 2020 was registered only in short-term debt funds (Deuda < 90) + 137%[3] compared to the net inflow in February 2020. At the same time, the remaining types of funds showed a huge outflow in March compared to February: long-term debt funds (Deuda > 365): −308%, Equity funds (Accionario): −545%, Structured Product Funds (Estructurado): −223%; Balanced Strategy funds (Balanceado): −223%; Funds for Institutional Investors (Inversionista): −280%.

It should also be noted that Equity Funds experienced negative outflows in March–July, Structured Product Funds in March−July, Balanced Funds in March−July, while funds for Qualified Investors and Long-term Debt Funds showed outflows until the end of 2020.

The main and for the most part the only positive inflow of funds was in Debt Funds with a short investment period of up to 90 days.

Canada

According to the Investment Fund Institute of Canada,[4] the COVID-19 pandemic provoked the following trends. At the beginning of 2020, the net asset value of all types of funds was CAD 1.63 trillion. By the end of the first quarter, the value of net assets fell to CAD 1.53 trillion. The net investment flow in all fund categories in March 2020 was

[3] Calculated by authors on the basis of Associacion de Administradoras de Fondos Mutuos de Chile A.G., https://www.aafm.cl/que-son-los-fondos-mutuos/.

[4] https://www.ific.ca/en/pg/industry-statistics/.

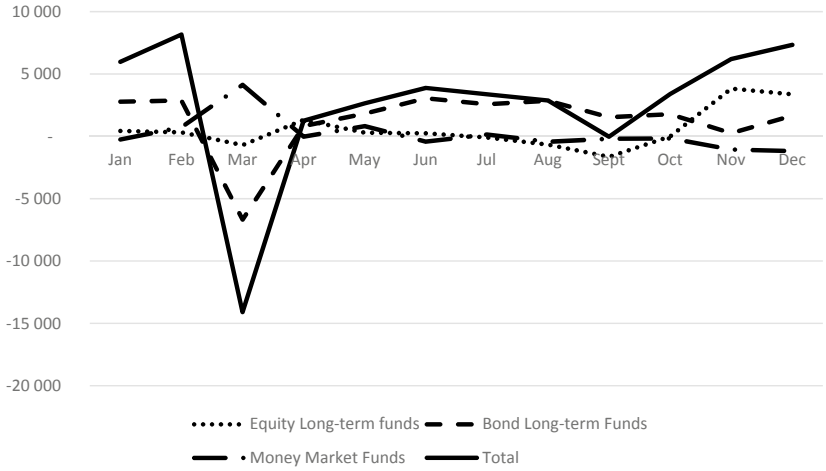

Fig. 12.2 Mutual fund net sales/net redemptions in Canada, 2020 ($ Mln.) (*Source* Constructed by authors based on The Investment Fund Institute of Canada)

CAD -14,095 million, which was, according to the authors' calculations, −273%[5] compared to the net investment flow in February 2020. At the same time, the outflow of investments from long-term funds in March amounted to CAD −18,255 million, while over the same period, money market funds experienced a whopping investment gain of CAD 4,130 million, which is twice the total investment in this type of funds for the whole of 2019. If we take the Canadian investment fund market, equity investment funds were extremely sensitive to the pandemic. The volatility of these funds repeated the peaks of the COVID exacerbation, investments outflowed (May, July–October) and there were periods when the disease rate stopped growing and one could see a reverse, positive movement of investments in these funds (April–June; November–December) (Fig. 12.2).

[5] Calculated by authors based on The Investment Fund Institute of Canada, https://www.ific.ca/en/pg/industry-statistics/.

South Korea

According to the Korea Financial Investment Association (KOFIA),[6] the total investment flow in investment funds remained positive in 2020, but according to the authors' calculations, the decline in investment funds compared to 2019 was −61%. At the same time, one can clearly distinguish three periods of 2020 when the total volume of investments in all types of funds was negative: March (−31,078,400 million won or −258%[7] compared to February investments); June (−14,447,300 million won or −174% compared to May investments); September (−9,287,600 million won or −4512% compared to August values). It is worth noting that the largest outflow in March 2020, in absolute terms, could be seen in short-term asset funds: −23,831,000 million won. However, this type of fund showed not only a positive increase in investment at the end of 2020 but also the volume of investments increased by 45%[8] compared to 2019, which corresponds to the previously highlighted trend of investments' outflow in money market funds with high liquidity. It is also worth highlighting the funds that invest in the debt market, the capital market, and real estate. According to the authors' calculations, debt market funds lost about 66% of all inflows in 2019 in March 2020 alone. Although, in the next six months, funds of this type had a positive inflow of investment, the fall in March could not be compensated: −128% at the end of 2020 in comparison with the net flow of 2019. Equity funds have been in the "red zone" for more than six months of 2020, with the highest outflows in July and August. Real estate funds, although they showed negative net flow only in March 2020, throughout the year, the net flow was on average more than 50% lower than the same values in 2019 (Fig. 12.3).

Russia

The investment funds of the Russian Federation did not feel the impact of the pandemic as strongly as the ones of the countries discussed above.

[6] http://www.kofia.or.kr/wpge/redirecteng.do.

[7] Calculated by authors based on Financial Investment Association (KOFIA), https://www.ific.ca/en/pg/industry-statistics/.

[8] Calculated by authors based on Financial Investment Association (KOFIA), https://www.ific.ca/en/pg/industry-statistics/.

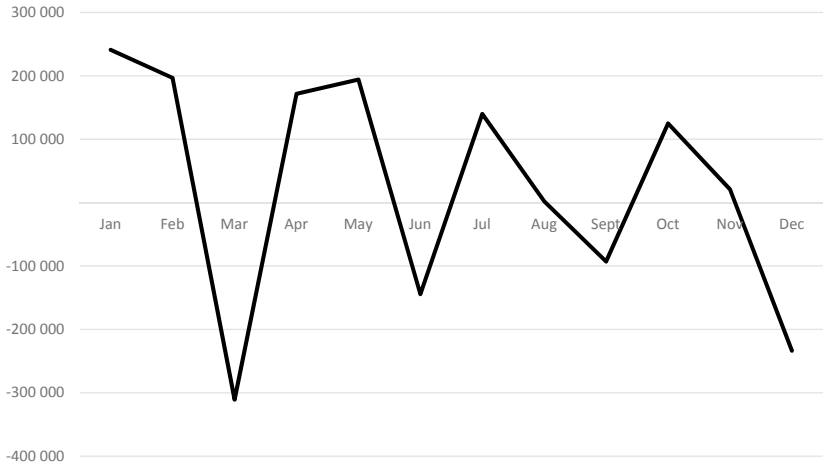

Fig. 12.3 Total funds change in South Korea, 2020 (100 mln Won) (*Source* Created by authors)

According to the Russian Central Bank,[9] the total volume of mutual fund portfolios decreased by −6.5%[10] in the first quarter of 2020. At the same time, there was a 37% increase in the volume of portfolios of exchange-traded investment funds in the first quarter of 2020. According to the National Association of Stock Market Participants,[11] a net increase in investments in open-ended mutual funds was recorded for the first quarter of 2020 in the amount of 50.52 billion rubles, which, according to the authors, is about 48.9%[12] of the total net flow to funds of this type for the year 2019. If we take the second quarter of 2020, the Central Bank of Russia said that the net investment flow was the following: +42.3 billion rubles or −27% compared to the same period in 2019 for closed-end mutual funds; +25.2 billion rubles or +340% compared to the same period in 2019 for open-ended mutual funds; and +6.1 billion rubles

[9] http://cbr.ru.

[10] http://cbr.ru/analytics/RSCI/activity_uk_if/.

[11] http://naufor.ru/tree.asp?n=4333.

[12] Calculated by authors based on NAUFOR, http://naufor.ru/tree.asp?n=4333.

or +164% compared to the same period in 2019 for exchange-traded investment funds.

The described dynamics is atypical for the period of the COVID-19 pandemic, but the following factors that influenced the investment fund market in 2020 and significantly supported it can be identified. First, the key rate of the Bank of Russia at the end of 2019 and the beginning of 2020 was at a level close to the minimum values for the previous 5 years, which harmed the deposit rates in commercial banks. Second, since the beginning of the COVID-19 pandemic, the Russian Government has taken many measures to combat the pandemic and its consequences, including the financial ones—the taxation of personal income has been changed (an increased rate for income exceeding 5 million rubles and the taxation of income from bank deposits exceeding 1 million rubles have been introduced). These factors, on the one hand, provoked individuals to search for more profitable instruments, and on the other hand, contributed to an increase in the banking sector's interest in commission income from selling investment products to customers, in particular mutual funds (according to the Bank of Russia,[13] the commission fees in the banking sector in all areas increased by 10% in 2020). It is also worth noting that online distribution channels for financial instruments and the increasing financial literacy could have a positive impact on investments in mutual funds.

Discussions

Considering the situation on the investment funds market in various countries, we can highlight the following:

1. During the period of growing uncertainty and falling markets, investors tried to exit investment funds and obtain cash or highly liquid assets.
2. Investors of long-term investment funds continued to withdraw from this type of investment not only at the most critical moments (March) but also in the subsequent period. The authors attribute

[13] https://cbr.ru/Collection/Collection/File/32168/overview_2020.pdf.

this to two factors: the general uncertainty in the future movements of the market and the difference in transaction costs—exiting long-term funds can take up to six months.
3. The gradually returning investors with liquid short-term assets who could quickly exit in the second half of 2020 indicate a change in investor sentiment but generate additional expenses in the form of entry and exit costs.
4. In some cases, the endogenous characteristics of the financial market may have a stronger impact on investor behavior than the global pandemic and other external factors. On the one hand, one can point out the advantages of this situation, but on the other hand, such a behavior of the financial system can be a factor of uncertainty for external investors, which in the end will have rather negative consequences in the form of foreign capital's negative investment flow.

Summarizing the observations, it can be noted that the COVID-19 pandemic has again revealed the problem of confidence in financial markets. Investors doubted the fund managers' actions and wanted to manage their investments independently during a period of volatility. However, after a few months, when the market turned up, they realized that they had been mistaken and re-purchased investment units. As a result, there was a loss in the form of a commission on the repayment and acquisition of shares and a loss of market profitability at the time of the reversal. Increasing the level of trust in the market, as well as using automated decision-making systems in asset management, in our opinion, could increase the level of trust and improve the situation for the end-user and the market as a whole.

The consumer is no longer just a consumer, but an authorized participant in the reproduction process, especially if it is not a single consumer, but a group of consumers united by a social network, or any digital ecosystem, that is, a digital community of consumers. The modern production of goods and services is faced with the problem of creating a customized offer as it is very difficult to find the resources to involve each consumer in jointly creating value. One example of a customized offer is robo-advising.

Robo-advising has become widespread in the FinTech system, apparently for several reasons: modern people are digitally oriented; it can be

used in mobile applications; the commissions are lower; one can independently make decisions based on the recommendations of an independent technical algorithm following individual goals and behavior, as well as the capabilities of robo-advisors: indicators of their trading algorithms' effectiveness, interactive and visual reporting (Sironi, 2016).

People distrust digital platforms as they collect, accumulate, and use detailed information, including personal one (Normey, 2020). This effect has increased when digital services began to be monetized. However, the pandemic has accelerated the spread of financial services, including among private investors.

Robo-advisors have firmly taken their place in the FinTech system since 2008. Robo-advisors are most widespread in the United States (if we take the number of companies offering services, customer base, and assets under management), followed by China. The largest companies in the robo-advising market include Betterment, Wealthfront, Personal Capital, Schwab Intelligent Portfolio, Acorns, SigFig, Vanguard, SoFi, Fidelity GO, and others. Business Insider Intelligence estimates that robo-advisors will manage $4.6 trillion in assets by 2022 (Meola, 2021).

With the improvement of robo-advising, robots will inspire more confidence than personal consultants as they will be improved, there will be no conflicts of interest, they will not disclose the entire amount of invested savings, and people will get satisfaction from self-balancing their savings and optimize tax paying. An important factor for increasing confidence in robo-advising is decision-making during price declines since decisions are made without emotion, automatically.

To increase trust in robo-advisors, conversational advisors based on artificial intelligence are being implemented into chatbots. They apply the fundamental principles of communication between people to increase the level of emotional trust between a person and a robot (Hildebrand & Bergner, 2020).

Another trend in robo-advising in the post-COVID period is re-profiling the degree of risk, taking into account the time of investment. The experience that robo-advisors have gained during the pandemic will certainly increase their resilience to short-term economic shocks.

However, it does not appear that investment advisors will be made a thing of the past. If robo-advising continues to use logical and mathematical intelligence, then the leading incentive for communication with investment consultants will be sensory intelligence, which will contribute

to jointly creating values. In this case, communication with investment consultants will likely move to the luxury segment.

Conclusions

The COVID-19 pandemic has changed all areas of life. We can trace the example of disrupted ties and the pandemic's impact on the financial market, the reaction of investment fund investors around the world, and their actions in the spring of 2020.

A review of several countries' investment fund markets has allowed us to conclude that comparable trends have developed during the COVID-19 crisis. The volatility in financial markets caused by the pandemic has determined the trend for investors to take profits in high-risk assets and convert them into cash and other highly liquid assets.

However, it is worth noting that endogenous factors, in some cases, may have a greater impact on the market situation than exogenous ones, even of such a force as COVID-19.

The behavior of investors can be characterized on the one hand as an attempt to protect the assets: withdrawing investments from the financial sector, transitioning to cash and other generally accepted protective assets, but on the other hand, one cannot but note the great changes in the investors' attitude to the market correlated with the epidemiological situation. Such changes support the hypothesis that they lack trust and clearly demonstrate the economic costs caused by distrust—the transaction costs of withdrawing and returning investments. It is also worth noting that certain categories of investment funds do not allow for a quick withdrawal, which increases the outflow in conditions of uncertainty and high volatility.

The COVID-19 pandemic introduced fear into social communication: people were afraid to meet and afraid to communicate in person. The loss of social trust inevitably broke the value chains and there was no need to establish new types of communication via the Internet. The physical disruption of social communications has given birth to a new format of collaborative HCDM value creation through products such as TrueConf, Zoom, and others that have facilitated business dialogue on a global level.

Trust is the most important institutional factor in financial market development, so it is very important to restore trust between economic actors to make their interaction with consumers closer and create joint

value. The post-COVID era shows that traditional financial market institutions have undergone a transformation. The pandemic has pushed for greater digitalization, and it has also given rise to robo-advising, which allows one to create value together with consumers using new HCDM platforms. Thus, in the post-COVID period, new opportunities for developing the financial market open up, so that one can use new platforms to create a mass-customized individualized product for consumers of financial services.

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PART II

Financial and Insurance Sector at Post-COVID Age

CHAPTER 13

Post-COVID Economic Revival: Financial Aspects of Reform

Natalia A. Nevskaya

Introduction

Governments have implemented fiscal and monetary measures in response to the adverse effects on the real economy and financial system; such packages are necessary for overcoming the effects of the shock from the COVID-19 pandemic. The situation is aggravated by the growing trend in the dynamics of morbidity and the deterioration of the public health situation. Extending financial support for too long will distort resource allocation and asset prices, increase risks, delay structural change, and drain public finances. The longer it takes for a government support measure for the economy, the more worries will arise about the escalating debt, which stifles investment and economic growth. Governments have a dilemma to keep market imbalances at work. The main objectives of the application of policy measures are to avoid a significant drop in production and employment, bankruptcy, and inflation, among other problems

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in the banking sector. This paper analyzes the combination of financial instruments to overcome the post-pandemic economic crisis.

The market also reacted to the pandemic with an accelerated transition to digitalization. This has impacted merchants and consumers, as well as the methods of distribution, from digital trade processing to the accelerated genesis of digital currencies.

Methodology

The financial aspects of reforming national economies in the aftermath of the pandemic and lockdowns are assessed in this essay based on the example of countries with advanced economies (some focus is given to EU countries). A financial sector shows the greatest globalization and interpenetration, the general trends in the development of financial systems coincide. The article analyzes the reports of central banks in developed economies, considers the analytics of the International Monetary Fund, and assesses the impact of supporting measures of the economy. Modeling of economic processes and factors of financial regulation is considered through the works of Alfonso and Paolo, who look at data about the EU in variants of scenario calculations in the SPSS (Alfonso & Paolo, 2021). Another article, by Bańkowski, Ferdinandusse, Hauptmeier, Jacquinot, and Valenta, also shows the model of the economy under the influence of monetary support measures (Bańkowski et al., 2021). Other authors, including Glazyev (2020), Lenchuk (2019), Yankovskaya et al. (2021), Stepnoff and Kovalchuk (2020), Osipov et al. (2021), and Yukhno and Osipov (2021) discussed the general economic patterns of changes in the financial sector. Bernanke (2020) examines the use of financial instruments in a new environment based on a new monetary theory.

Results

State governments supported aggregate demand and aggregate supply by financial instruments during the pandemic period in 2020. Many countries had to change their financial policies to address the COVID-19 problem. This goal was achieved by fiscal and monetary instruments, for which targeted mechanisms were developed to help private households and corporations. A decrease in the labor market and in incomes, with any future development being extremely uncertain, leads to a significant

reduction in consumer spending and investment. There were some signs of an improvement in the economic situation when the national government began to relax distancing rules and partially lift the restrictions imposed earlier.

Everything went through the short-term economic cycle during the pandemic. The development of such a cycle during a pandemic begins with a sharp increase in uncertainty and an increased demand for liquidity. This leads to a drop in economic activity. The main goal in these conditions was the need to stabilize financial markets and restore investor confidence. Additional liquidity is introduced to the financial market.

The next stage manifested itself in an initial decline in economic activity. It is necessary to stabilize the real economy and minimize the costs associated with the pandemic and lockdown at this stage of the process. Governments expand access to liquidity and use the ability to maintain solvency for supporting the real market. The authorities are trying to mitigate problems from temporary non-payments in the financial market at this stage.

The pandemic has lasted longer than originally expected, and there is uncertainty about the trajectory of the evolution of the pandemic. Therefore, states are taking measures of targeted support in the market of the real economy. Lending took place even with high credit risks in the financial market.

Economic activity will increase, and a transition to a post-pandemic economy will take place at the last stage. State governments will phase out measures to support the real sector. The regulator is aimed at difficult cases of debt restructuring and an orderly exit from the market through bankruptcy mechanisms in the financial market. The use of non-payments is excluded, so as to manage overdue loans in these market conditions.

Thus, the first stage of the state regulation of the economy is usually aimed at stabilizing markets and restoring confidence in the financial system. The second and third stages of reducing losses incurred due to the recession in economic activity are aimed at the stabilization of the real economy (Osipov et al., 2020).

The fourth stage is aimed at restoring the balance in the real economy as it moves to normal.

Mechanisms to support the economy during the COVID-19 pandemic:

1. Monetary policy: increasing liquidity and minimizing volatility in the financial system; the availability of financing and refinancing. Monetary policy has an indirect effect on the real economy.
2. Fiscal policy: direct subsidies to households and firms, tax deferrals, official guarantees, moratoriums on mandatory payments. Fiscal policy measures are of a direct nature to the real economy.

Key direct support measures and their cancellation during the COVID-19 pandemic:

– Deferral of loan payments or tax payments.
  This insurance helps maintain the liquidity level of the household, allowing for a certain period to service debt or deferred payment of taxes or social contributions.
  In the long term, the measure will backfire on the profitability of banks, as when the debt service is resumed in full, it is possible to increase bad or problem loans, which can lead to a decrease in profitability.
– Measures of state guarantee service for a company or a self-employed economic agent. Eliminating low-cost financing options for goals can increase insolvency. The state provides guarantees for insuring trade operations for cooperative carriers; eliminating this opportunity increases the buyer's risk with potentially negative consequences for importers.
– Prohibition of layoffs and bankruptcy procedures. The abolition of this measure will produce free movement in the labor market, increase unemployment, and increase the growth of household incomes, which will affect the level of consumption and aggregate demand.
– Measures to support financial capital markets (for example, as temporary restrictions on trade) have allowed corporations to raise finance through debt increases and additional share issues, as well as initial public offerings.

Many of the support measures were canceled after the release of quarantine.

The use of financial support measures carries risks of market differentiation.

Digitalization of the financial sector as a factor of accelerated change after the COVID-19 pandemic.

Financial market changes related to automation and digitalization have 2 directions:

- making new financial products based on a distributed data system with many issuers—various cryptocurrencies;
- making a digital currencies system with a single issuer; digital currencies could be used with any equivalent (stablecoins), or they cannot have such a connection in this case.

The success of the implementation of blockchain technology in the financial sector is debatable. The increasingly popular blockchain technology is used in various fields of activity, but this technology is the most demanded and massively implemented in the financial sector. It represents information blocks connected by chains. Distinctive features of this technology for maintaining distributed databases are a decentralized procedure for ensuring the interests of all participants in the process and cryptographic data protection.

The most famous cryptocurrencies are currently Bitcoin and Ethereum. Ethereum is not merely a cryptocurrency, but a platform where cryptocurrencies can be created; Hyperlerder fabric, Masterchain, C-RDA, Exonum, and others are analogs of the Ethereum platform.

The rapid development of technology in the IT industry has contributed to the attraction of a large number of participants in economic relations using cryptocurrency, both electronic platforms inside and going beyond them (Inozemtsev,). Some of the biggest players of the personal data market have launched their cryptocurrencies in the recent past. Facebook is a social network which is the world's largest operator of network user data; it released the Libra cryptocurrency in June 2019. Libra was renamed Diem in 2020. It was born for exchange into the Facebook system. The Telegram network and a number of others have followed this path. The emergence of a big quantity of cryptocurrencies, and their ability to perform the same functions as money and increase wealth due to price increases, contributed to the making of the cryptocurrency stock market. The digitalization of the economy and monetary relations has led to the transformation of regulatory measures on the part of Central Banks.

The national digital currency in a system of monetary policy can be implemented on the basis of well-known regulatory mechanisms. The management of the economy system can be carried out by changing the interest rate paid to the electronic balances of the Central Bank's national digital currency and regulating the total amount of this money.

It is important to define a number of parameters when configuring the use of a national digital currency. One of the key parameters is access to the national digital currency of economic agents. It can be publicly available—in other words, it can be used by anyone for any purpose—or access can be limited to a set of economic agents or for a certain range of purposes.

Monetary theory defines universal access as a fundamental characteristic of any national digital currency. It seems possible that Central Banks could issue a national digital currency that is only available to a subsector of the economy, such as "retail" for households and non-financial enterprises, or "wholesale", which can be used as a settlement asset in financial markets by firms, who currently do not have access to the reserves of the central bank. The ECB has decided to use the broader term "digital base money".

The second key parameter relates to whether the national digital currency is an interest-bearing asset. The national digital currency can be paid positive, zero, or even negative rates at different points in the economic cycle. The interest rate can be used to stabilize inflation and output as the main instrument of monetary policy, or to regulate the demand for a national digital currency.

A national digital currency's important parameter is the ability to participate in trading on an equal basis with the Central Bank's other obligations. Different types of Central Bank liabilities can be exchanged with each other 1:1 in most existing monetary frameworks. For example, one unit of Central Bank notes can be exchanged for one unit of reserves. A flexible exchange rate between cash and Central Bank electronic money can be used to simplify the negative interest rate on cash and overcome the effective floor. This system would mean that the economy would operate with two different specified currencies simultaneously with a controlled exchange rate. These two currencies have a significant risk to monetary stability at the same time poses.

A national digital currency's most important making parameter is the choice of technology. Cryptocurrencies (Bitcoin, Litecoin, or Ethereum) use distributed ledger technology based on cryptographic techniques.

Making a national digital currency can be based on technology that supports the existing real-time currency settlement systems of the Central Bank. This technology does not create cryptocurrency but the digital currency of the Central Bank. The optimal setting for each of these parameters will depend on the reason for the introduction of the national digital currency.

The role of digital currencies is great during a pandemic period, because it is a means of tying free liquidity to the market from measures to increase liquidity. The Bitcoin rate from mid-2020 to mid-2021 has grown from 10,000 USD to 60,000 USD and has fluctuations around the point of 50,000 USD.

Financial policy and reforms focus on three critical areas:

1. increasing the participation of retail customers in the capital market, where digital technology plays an important role,
2. improving the opportunities for access to the capital market for small and medium-sized enterprises,
3. the formation of an integrated market architecture for retail clients, small and medium-sized businesses, and large corporations.

Interest in the financial market during a pandemic is demonstrated by the growing difference between the return on risky assets and the return on safe assets. The risk premium is the most important factor behind this trend. The role of institutional investors is increasing, including insurance companies providing large capital operators as long-term investors due to the high volatility in the financial market.

Governments and institutional investors define long-term investment goals in line with the UN's sustainable development goals, such as innovation in the fight against climate change.

The main focus of financial support during the pandemic was directed at small and medium-sized enterprises, since it is more difficult for them to survive the blow of a lockdown compared to large corporations that have large financial reserves and the ability to reallocate resources between divisions.

Removing support mechanisms could increase the likelihood of market volatility similar to March 2020. In the face of such a risk, some states maintain a policy of maintaining liquidity in the market. In particular, the euro area adheres to this policy. "The Recovery and Resilience Facility

(RRF) will make €672.5 billion in grants and loans, financed by EU borrowing, available to support reforms and investments undertaken by Member States until 2026", according to the ECB's spring forecast (ECB, 2021).

For reforming the banking sector, the main direction was through the use of "too-big-to-fail" reform (TBTF).

The formation of the principles for the implementation of reforms began with the Basel III standards. The standards have made changes to the indicators:

- leverage ratio;
- Net Stable Funding Ratio (NSFR);
- supervisory framework for measuring;
- controlling large exposures (LEX).

The implementation of the reforms will take full effect in January 2023, but it was agreed in December 2017. These were standards for the capital of insurance companies, based on the risk assessment of large international insurance companies.

It is assumed that if it is impossible to provide liquidity by banks, government agencies will help them in some cases with compensation.

Principles on Loss-absorbing and Recapitalization were developed by international banking organizations of strategic importance as a part of the new rules. They are designated by the abbreviation "G-SIB"—from "global systemically important banks" for brevity. The new standard was developed in collaboration with the Basel Committee on Banking Supervision and at the request of the G20 members. It was an implementation of the Total Loss-Absorbing Capacity (TLAC) standard. The G-SIB rules meet the TLAC minimum external requirements for 2022.

Plans are being implemented to reorganize systemically important banks and the introduction of effective reorganization regimes for insurance companies within the framework of these rules.

Discussion

There is plainly a great difference between the implemented financial reforms of the current pandemic situation and the 2008 crisis. Central Bank financial reforms focus on the implications of such reforms. The

agreed indicators of the level of stability of the financial system are the main guidelines.

This can be seen in the policies of the G20 countries. The advanced economies have become more stable due to the separation of financial reforms aimed at the real sector of the economy and the financial system as a result of the reforms. The COVID-19 pandemic was a shock around the world in 2020 and 2021. Governments of all countries implemented administrative, direct, and prudential measures to contain the spread of the pandemic, and this led to a sudden sharp decline in economic activity. This has caused tension in the financial system. The presence of high capital and liquidity reserves in the banks that are part of the core of the financial system made it possible to continue lending to business entities in connection with the introduction of new stability rules. The big banks absorbed the macroeconomic shock, rather than amplified it. This supported the recovery of the advanced economies of the G20 countries.

The stock market was also under great stress. The value of all assets fell sharply on the second half of March 2020, after the announcement of the lockdown and the closure of borders. Demand for cash and assets with high liquidity increased sharply. The system banks were able to respond to this situation with financial resources.

It is necessary to coordinate all types of economic policies and bring financial reforms in line with development programs during such a situation.

The investment policy is an element of state economic policy and must be consistent with its other components. The basic requirements for the volume and structure of fixed assets investments should be formed in the process of developing industrial policy. It is necessary to determine which sectoral group companies and enterprises can become competitive in the domestic and foreign markets at the same time, which company can only operate within the country, or which one will not be able to become competitive in the foreseeable future with any terms. The revision of investment policy is associated not only with the restrictions associated with the pandemic, but also with the aggravated sanctions effects on the movement of capital. Forms of support for these sectors and industries should also be determined, including in the area of investment policy.

The European Union has adopted the InvestEU Program (2021–2027) with an additional investment of € 650 billion (EC, 2020).

Foreign economic policy should ensure the protection of those producers who are defined as competitive in specific conditions in industrial policy, primarily related to sanctions, customs duties, and quotas, as well as restrictions on logistics with lockdown's terms. Customs protection indicates that the relevant industry needs investment and tax incentives.

Social policy largely determines the volume of investments in the domestic demand sectors. Maintaining domestic demand like a direct grant, tax relief, and equity injections, and a direct payment to households, supports the huge markets of advanced countries and allows the bulk of the population to remain at an average level of security during such conditions as low income or forced unemployment during a global crisis. With a significant decrease in the incomes of the overwhelming majority of the population in the era of the pandemic, the domestic market is significantly narrowing, which affects investment in domestic demand sectors.

Support measures for households and firms ensured a continuous flow of credit that supported effective demand and provided financial stability.

Monetary policy complemented these measures to ensure adequate liquidity and favorable financing conditions, while prudential authorities have taken measures to facilitate supervision to keep the flow lending. Together, these measures helped to prevent a sharp credit crunch and a wave of corporate defaults, as well as to protect the profitability and balance sheets of banks.

Conclusion

The main condition for the transition of the post-COVID global economy to sustainable economic growth is the financial mechanism for stimulating economic activity. Depending on the stage of the pandemic that the country's economy is going through, different support mechanisms are required. The first stage is to stabilize markets and restore confidence in the financial system. The second and third stages are the reduction of losses incurred due to the recession in economic activity and the stabilization of the real economy.

The fourth stage is aimed at economic recovery.

Carrying out a systematic policy presupposes: (1) ensuring the accelerated growth of private and public investment; (2) the implementation of

a financial maneuver in favor of sectors capable of ensuring the competitiveness of the economy in the new economic conditions of the changed production and consumption of goods; (3) ensuring the attention of states in matters of financial support for sectors that do not have sufficient investment potential, but are promising from the point of view of new markets; (4) ensuring the innovative content of investments in the dramatically changed conditions of the pandemic.

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CHAPTER 14

U.S. Insurance Market in Response to COVID-19

Elena V. Nebolsina

Introduction

The COVID-19 pandemic has depressed economies worldwide, with the global growth contraction for 2020 being estimated at −3.5% (IMF, 2021). Continuous lockdowns and compulsory measures connected with social distancing taken by governments disrupted many types of businesses resulting in increased insurance claims.

Though the insurance market is shaped by various factors (Nebolsina, 2020), the pandemic's impact on the insurance market may be compared to that of a natural disaster (Aaronson et al., 2020; Ludvigson et al., 2020); however, contrary to natural catastrophes, the virus spread is not limited to relatively concentrated areas (Anderson, 1974).

Thus, pandemic-related losses exceed the limits of insurability. With quarantines protracted, as well as production and commercial facilities still

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shut in many countries, insurers are forced to ask their governments to intervene and provide for the missing coverage.

The protection gaps are typical of all insurance lines though business interruption (BI), and cyber insurers are most exposed to the policyholders' complaints. According to the Allianz Risk Barometer 2020 (which was conducted before the coronavirus outbreak), cyber and BI rank as the top two risks for companies and are increasingly interrelated. Eling and Schnell (2019) outline various attempts to define and categorize cyber risks according to the type of attack and source of the risk. Contrary to many other risk groups, cyber risks cause not only economic losses but also intangible losses, viz. reputation damage, customer turnover, and increased costs of customer acquisition (Xie et al., 2020). Contrary to property and casualty losses, BI are rather more complicated to be properly estimated (Mills & Jones, 2016), with the situation aggravating due to the COVID-19.

This paper is focused on the U.S. market for two obvious reasons. Firstly, the country is the international pioneer in writing life and non-life direct premiums, with the total volume amounting to 39.1% of global premiums in 2019 (Swiss Re, 2020). In addition, the U.S. tops the world rankings on the number of the confirmed COVID-19 cases (Esterwood & Saeed, 2020).

In this context, the objective of the study is to investigate major responsive measures of the U.S. insurance companies and regulators to the already incurred and potential BI and cyber damages.

The role insurance markets and governments can play in mitigating mortality and financial risks caused by pandemics is considered by the Special Issue of the Geneva Risk and Insurance Review, where the authors stress that BI insurance is a rather specific segment, as insurers were taken by surprise and any predictions are hard to be made due to the uncertainties of the existing risk coverage potential (Muermann & Rothschild, 2020). The Organisation for Economic Co-Operation and Development (OECD) has prepared an overview of several countries' initiatives on compensating BI insurance losses following the pandemic with support from governments and emphasizes that responding to these challenges requires sharing lessons and experience on the international level (OECD, 2020).

The initiatives on adjusting the BI and cyber insurance landscape to the pandemic-related needs are rapidly renewed; however, there are still no papers which consider the latest updates on both lines in the U.S.

In this respect, the present study complements previous literature by considering business and government initiatives aimed at mitigation of the pandemic-related BI and cyber risks and their prolonged effects, as well as by providing a forecast on the efficiency of public-private partnerships in order to foster a resilient insurance market in the U.S.

The findings suggest that the new reality calls for government intervention and the transformation of insurer policies in order to withstand the risk of future pandemics; however, the positive impact of federal funding is rather doubtful for the economy budget, which could shift regulators in favor of tightening insurance and security rules.

The paper is arranged as follows: The following section describes data and research methodology; Section "Results" reveals and discusses major results; the conclusions and suggestions are given in the final section.

Methodology

This problem-oriented study is based on the mixed method research (Johnson & Onwuegbuzie, 2004) with quantitative and qualitative research techniques and approaches combined.

The study is based on such scientific research methods as historical analysis, comparative analysis, synthesis, deduction, and induction.

The demand for BI insurance due to the COVID pandemic is revealed by tracking Google Trends data. Google search trends can be considered as a leading indicator of consumer interest and widely used for economic prediction (Aaronson et al., 2020; Choi & Varian, 2009, 2012; Forsythe et al., 2020; Vosen & Schmidt, 2011, 2012).

The major directions of the research are as follows: (1) revealing the trends of BI and cyber insurance claims in the U.S. (historical analysis, comparative analysis); (2) detecting shifts in major U.S. private insurance and public sector initiatives on maintaining the insurance market resilience due to the COVID-19-related protection gaps (historical analysis, synthesis, deduction); (3) providing the prospects of developing efficient public-private cooperation amid the challenge of a high level of loss accumulation and strained government funds (induction and prospective analysis).

The research data was obtained from open sources on the Internet, official websites of international organizations (the IMF, OECD, etc.), U.S. regulation authorities (Treasury Department, National Association of Insurance Commissioners (NAIC), New York Department of Financial

Services (NYDFS), etc.), international companies (Allianz, Chubb, Swiss Re, etc.), and laws and regulations of the U.S. The author has analyzed more than 50 theoretical research papers and empirical studies on the topic of interest, a part of which is included in the references. The whole list cannot be provided due to the chapter size limits.

Results

Businesses in the U.S. are monthly losing approximately USD 1 trillion as companies are disrupted due to the COVID-19 pandemic, with insurers collecting only USD 4.5 billion a month for all commercial property lines (Brewer, 2020). Insurers' USD 800 billion catastrophe fund is not enough to cover the costs of future pandemic claims (Hartwig & Gordon, 2020).

As illustrated by Fig. 14.1, the interest in BI insurance skyrocketed in March and April 2020, as reflected by the Google trends with a search query "Business Interruption Insurance," which may be explained by increased consumer demand.

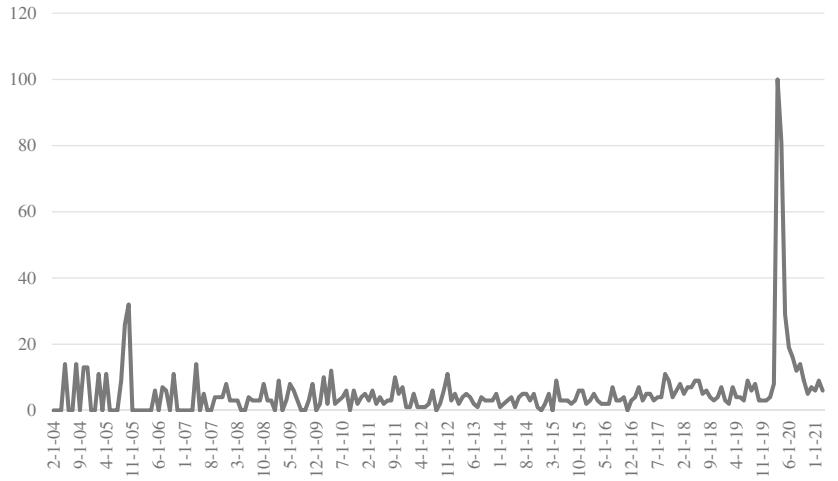

Fig. 14.1 Interest in Business Interruption Insurance in January 2004–February 2021 (*Source* Compiled by the author, based on Google Trends)

The COVID-19 outbreak reinforced the need to reconsider the wording of business interruption and to admit that business interruption caused by pandemics may not be an insurable risk due to its complex accumulations of risks and the threat of external moral hazard (Richter & Wilson, 2020).

As a rule, BI can assist in consequential losses that result from any damage caused by, for instance, a fire or a flood, and thus there should be proof of "direct physical loss or damage." The lockdowns due to the COVID-19 pandemic, however, were normally not followed by destruction of or damage to property, which means that the incurred losses did not have a physical aspect. Therefore, the temporary loss of property use failed to trigger cover for BI losses. Moreover, many insurance policies covering BI contain explicit virus exclusions. As a result, hundreds of BI insurance claims were rejected by insurance companies.

Despite the setbacks, businesses worldwide keep suing, demanding that the concept of "material damage" should be interpreted broadly and include the consequences of the COVID-19 pandemic; policyholders have already achieved significant success in this area both in the U.S. and Europe, including a victory before the English High Court in the UK Financial Conduct Authority's COVID-19 Business Interruption Test Case (Macinnes et al., 2020).

As of January 2021, the number of lawsuits commenced by policyholders in the U.S. seeking insurance coverage for COVID-19 losses almost approached 1,500 (Branthoover, 2021).

As private insurance coverage for economic losses caused by pandemics is limited (Hartwig et al., 2020), few companies are able to respond to the business interruption losses resulting from COVID-19 business closures unless governments intervene. In this respect, NAIC, 2020 issued a statement raising concerns with proposals to require retroactive coverage of BI claims.

As of January 2021, California, Louisiana, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, and South Carolina have introduced legislation that would retroactively expand coverage under existing BI insurance policies to cover COVID-19-related losses. Moreover, the Illinois state legislature has passed legislation that would require the Illinois Department of Insurance to establish a task force to study BI insurance needs (Sidley, 2021).

Insurance and risk management associations—both in the U.S. and Europe—spoke in support of developing a program to cover pandemic-related business interruption losses. Meanwhile, more than two dozen policyholders representing real estate, hospitality, retail sector, the film industry, and others have formed a coalition advocating for a public-private backstop for pandemic BI insurance (Wilkinson, 2020).

In response to their demand, on December 8, 2020, the Center for Insurance Policy and Research (CIPR) at the NAIC Fall National Meeting held a special session to discuss a potential pandemic BI federal insurance mechanism. The panelists considered the advantages of existing federal insurance programs (the Terrorism Risk Insurance Program (TRIP), the National Flood Insurance Program (NFIP), the Federal Crop Insurance Program), and the opportunities of the proven framework to facilitate the implementation of a future pandemic federal insurance program.

The participants also focused on the proposals for a pandemic insurance program under both the Pandemic Risk Insurance Act (PRIA), which was introduced in the U.S. House of Representatives in May 2020, and the Business Continuity Protection Program (BCPP), proposed by the American Property Casualty Insurance Association and National Association of Mutual Insurance Companies. The bill establishes the Pandemic Risk Reinsurance Program within the Department of the Treasury. This public-private federal program provides compensation to insurers if they incur losses related to pandemics and disease outbreaks. Unlike TRIA, PRIA would be a voluntary program, and insurers may participate in the program should they meet certain criteria; as with all the BI insurance policies, they must offer coverage for public health emergencies resulting from an outbreak of infectious disease or a pandemic declared on or after January 1, 2021, and certified by the Department of Health and Human Services.

Under the PRIA draft, a federal fund administered by the U.S. Treasury Department would cover up to 95% of the losses above the share of participating individual insurers, and the program is triggered once an industry loss threshold reaches USD 250 million with an overall annual cap of USD 750 billion in annual payouts (Dawson, 2020).

The BCPP, which has not yet been introduced as legislation, would be administered by the Federal Emergency Management Agency and would provide federal compensation for up to 80% of specific types of payroll, benefits, and other operating expenses after a federal declaration of a public health emergency. The program is expected to be modeled

after the NFIP, with the government and insurers administering the policies. The BCPP could be purchased on a voluntary basis, and assistance would be provided through state-regulated insurance entities. Prior to acquiring BCPP, businesses would need to certify that the proceeds of the compensation will be used to retain employees and pay necessary operating expenses, and that the business will implement all applicable federal guidance on health and safety measures during the health emergency. The coverage could be purchased by any company incorporated in the U.S. on a voluntary basis (Hatler et al., 2020).

Some type of partnership between the federal government and the private insurance industry is supported by a number of insurance companies and brokers. For instance, global insurance and reinsurance company Chubb Ltd. takes elements from both the PRIA and BCPP, but calls for the mobilization of much more capital from public and private markets, and distinguishes between large and small businesses. In July 2020, the company unveiled its proposal for a public-private pandemic coverage plan which would run for 20 years and consist of two layers (though the plan has not been introduced as legislation yet). The first layer would be a USD 250 billion pandemic coverage program for businesses with 500 employees or less. Private insurers would agree to collectively pay 6% of policyholders' pandemic-related losses in the first year, while the remainder will rest upon the government. The private insurers' share would gradually grow to 12% over the program's 20-year lifespan. The second layer would be funded solely by the government and would provide an estimated USD 500 billion in pandemic coverage for companies employing more than 500 people (Evans, 2020).

Like the PRIA and BCPP, the Chubb proposal would not be available for COVID-19 business interruptions. COVID-19 is excluded from the triggers for layer payouts with a proposed inception date of January 1, 2021.

As of February 2021, it still remains to be seen which insurance legislation and regulation initiatives will be approved by the corresponding authorities as the costs of any program on such a scale should be justified. For example, PRIA currently does not include a mechanism that would allow the federal government to recoup part of any reinsurance payouts from participating insurers by means of policies surcharges, which is a vital feature of TRIA.

Discussions

With the onset of the COVID-19 crisis, U.S. businesses were forced to rapidly expand their IT capabilities to accommodate working from home, which made them more exposed to cyberattacks. In the U.S. alone, cyberattacks on the electric grid have surged by 35% during the pandemic, with one U.S. utility that previously allowed only 9% of its power plants to operate remotely now allowing 80% (Martin & Freitas, 2020).

A well-crafted cyber insurance policy may play a critical role in mitigating the business risk of a cyberattack. In the post-COVID-19 scenario, the size of the U.S. cyber insurance market is predicted to grow from USD 3.15 billion in 2019 to over USD 20 billion by 2025, driven by the increasing number of security breaches and cyberattacks (Inozemtsev, 2021a, 2021b; Markets & Markets, 2020).

The market is hardening as a result of the uncontrolled expansion of global Internet platforms (Osipov, 2020), technology errors, omission losses over the past several years, and a more recent increase in the frequency and severity of ransomware attacks; underwriters are now far more stringent in risk selection for the purpose of portfolio optimization and maximizing their return on capital. The COVID-19 pandemic has brought many new buyers of cyber insurance than ever before, and current policyholders tend to consider expanding their programs limits.

However, many insurance companies are currently unable to provide adequate coverage of the emerging risks. Firstly, ransomware attacks (where hackers demand a cryptocurrency payment to provide decryption keys) and fraudulent transfer schemes (where hackers send forged emails to targeted employees to induce them to transfer funds to offshore accounts) fall outside of the standard insurance policy. Secondly, negligent network security practices are usually excluded from cyber insurance programs but are widely required when network IT resources are strained. Therefore, in the age of COVID-19, it is vital for insurers to consider certain potential modifications to the cyber insurance practice.

In their attempts to improve risk-modeling techniques, cyber risk insurers escalate their scrutiny of policyholders' security measures by requesting their business continuity plans and other proof of practicing good digital hygiene. Moreover, security and privacy laws at state, federal, and international levels impose bigger fines and penalties, and thus loom as an onerous burden both on policyholders and insurers.

In order to strengthen data security and privacy protection for the public, both sides of the political spectrum have introduced federal privacy legislation. A group of Republican Senators introduced the COVID-19 Consumer Data Protection Act (CCDPA), requiring companies under the jurisdiction of the Federal Trade Commission (FTC) to obtain affirmative express consent from individuals prior to collecting, processing, or transferring their personal health, geolocation, or proximity information for the purposes of tracing the spread of COVID-19. Senate Democrats introduced the similar Public Health Emergency Privacy Act (PHEPA), which has 2 major differences from the CCDPA: Firstly, the PHEPA is not limited to private entities and would also regulate some governmental use, collection, and disclosure of EHD; secondly, the PHEPA provides a private right of action for violations that constitute a concrete and particularized injury in fact to the individual (Gibson, 2021).

Ultimately, neither bill moved forward in the last Congress, nor if the situation remains unchanged in 2021, they will need to be reintroduced.

The NAIC Data Security Model Act, which is a cybersecurity breach law applicable to most insurance industry licensees, requires insurers and other entities licensed by a state department of insurance to develop, implement, and maintain an information security program based on its risk assessment, with a designated employee in charge of the information security program. The Act also mandates that insurers and other subjects to its provisions submit an annual certification of compliance with the law. The U.S. Treasury Department has recommended the prompt adoption of this model by states; as of February 2021, the Act has been implemented in eleven states, with several others (including New York) having adopted either older or similar laws or administrative guidance.

There was increasing regulatory attention to cybersecurity and privacy protection even before the COVID-19 outbreak. For example, the California Consumer Privacy Act (CCPA), which came into force on January 1, 2020, is considered to be the nation's toughest consumer privacy law. It seeks to give Californians more control over the personal information that businesses collect about them, and much like Europe's General Data Protection Regulation (GDPR), its effects will reach far beyond the borders of the state. CCPA gives consumers the right to limit the use and disclosure of a new category of "sensitive" personal information, including health, financial, and geolocation data.

It also allows consumers to correct inaccurate data about them and establishes the California Privacy Protection Agency, which will enforce the CCPA in lieu of the California attorney general.

On February 4, 2021, the New York Department of Financial Services (NYDFS) issued Circular Letter No. 2 announcing a Cyber Insurance Risk Framework (the Framework) that describes industry best practices for New York-regulated property/casualty insurers (Department of Financial Services, 2021). The Framework is the first official guidance on cyber insurance by a U.S. regulator. Despite the fact that circular letters do not have the force of law, they set forth the department's interpretation of the requirements of existing laws and regulations.

According to NYDFS, insurers should incorporate the following seven practices:

1. establish a formal cyber insurance risk strategy;
2. manage and eliminate exposure to silent cyber insurance risk (the risk that an insurer must cover loss from a traditional insurance policy that does not expressly mention cyber risks);
3. evaluate systemic risk, including critical third parties and catastrophic cyber events involving third parties;
4. rigorously measure insured risk;
5. educate policyholders and insurance producers;
6. obtain cybersecurity expertise by recruiting those with cybersecurity experience and following these employees' training guidelines;
7. require notice to law enforcement.

Though data breach litigation in the U.S. is a developing situation, insurers are becoming more proactive due to the more demanding regulatory landscape, alerting policyholders to new exposures and vulnerabilities in order to make them less exposed to cyberattacks.

Conclusions

The purpose of this article is to analyze the influence of the COVID-19 outbreak on BI and cyber insurance sectors and reveal the tools proposed by insurance market professionals and supervision authorities in order to provide a type of pandemic coverage for the future.

Firstly, it is revealed that the COVID-19 pandemic increased the severity of BI and cyber insurance losses, with the cumulative effect being manifested across all U.S. states. Google Trends reflect a jump in the frequency of BI insurance searches in spring 2020, which confirms higher consumer interest in this risk protection mechanism.

Next, by studying the most important approaches initiated by private insurers and legislators, it is confirmed that both BI and cyber losses resulting from the pandemic are not insurable by the private sector without significant government support. Facing the challenge of retroactive loss coverage pursuant to the policyholders' success in courts, and for fear of similar shocks in the future, insurers tend to lobby for participation in the state or federal government relief funds. As a result, several initiatives on public-private partnership have been introduced and further speculated, with still no final decision made. It is found that major suggestions in respect of BI insurance (if adopted) would be modeled after the TRIP and NFIP, while cyber insurance companies are forced to respond to the aggravated loss burden by strictly following tightened regulatory requirements on the security of their clients.

Finally, the conducted research allows concluding that the adoption of the pandemic-related loss allocation model is possible subject to the justified cost of the program. The experience of the existing tools proves that the federal-backed system is likely to be a net loss to the federal government and substantial political pressure is required for the proposals to progress further. There is no doubt that 2021 stands to be an active year for policymaking in the insurance sector, with a very high probability of tightening regulation on federal and state levels, especially in respect of cyber risks.

Overall, most insurers in the U.S. face the need to transform their business models in order to better adjust them to more sophisticated customer requirements and thus to capitalize on the consumer demand for innovation, digitalization, and new products. To lend support to the findings of the present study, in case of data availability, future research could focus on revealing further changes in insurers' policies in bringing more value to their customers' and regulators' approaches aimed at driving these changes in the industry.

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CHAPTER 15

New Technologies in the Financial Market After the End of the Pandemic: Extrapolation or Innovation?

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Introduction

How the financial market copes during crises of any ilk is a kind of litmus test for the viability of the existing economic system. It supports any interaction of economic actors and, in the event of an imbalance, is called upon to either stop it or propose new formats for ensuring the continuous development of the economy. The situation is aggravated by the fact that in extreme conditions the financial system accumulates risks, being, in fact, a single creditor of the economy, which requires the search for new resources and tools to start economic growth.

The current crisis is unprecedented both in form and in the resulting consequences of the disruption of economic ties. Therefore, it is objective

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to expect significant changes in the organization of the financial market, which can lead not so much to the reformatting of its technologies, but to a qualitative transformation of the content and functions of financial intermediation.

The purpose of this study was to identify the main trends in the post-pandemic renewal of financial business, which could be the basis for creating a digital financial economy (Inozemtsev, 2020).

The analysis of official documents, scientific articles, and business portals demonstrates a stable prevalence of FinTech tags in the financial topics, which is growing as the world adapts to the first shocks from the beginning of the pandemic.

The objectives of this study also included the stratification of digital financial instruments in terms of the dynamics of how the science and business fields attended to and developed in the pre-pandemic, pandemic, and post-pandemic periods (Inozemtsev, 2021).

Methodology

So as to build and determine the main trends in the post-COVID development of modern technologies in the financial market, the methods used in the article (based on the analysis of the information environment) are also widely used in scientific research to forecast various macroeconomic indicators: search queries, news articles, and user comments under news posts from social networks are used as input data (Ulyankin, 2020).

Russian and foreign scientists have devoted sufficient attention to the issues of research on the development of digital technologies in the financial market and the digital transformation of the economy: In such cases, the authors identify the main directions of research on the formation of digital infrastructure in the financial market in general (Osipov, 2020) and its segments in particular (Morozov & Adamchuk, 2020), consider the new financial technology market in Russia in the context of global trends, analyze the essence of the concept of financial technology, alongside its prerequisites, its scope, and the main directions of such applications in the financial sector, and also examine the role of new financial technologies in the development of the Russian economy (Semeko, 2020). The authors of scientific publications investigate the influence of digital technologies on national and global processes (Danilin, 2020) as well as the role of global platforms in stimulating digital transformation (Danilin & Mamedyarov, 2020). They also examine the digital transformation of the financial

industry as two components: the entry of technological companies into the financial services market (the FinTech revolution), and the digitalization of financial institutions; this provides a synergetic effect from the introduction of innovative business models (Kotlyarov, 2020) and highlights problems (Nebolsina, 2020) and areas of development in various sectors of the financial market in the post-COVID period (Adamchuk & Lee, 2020).

Results

Digitalization of the Financial Market

New Sectoral Technologies

In each sector of the financial market across the analyzed period, both outsiders and new dominants of digital provision were observed.

The most technologically advanced (in terms of real-life practice) is the money sector, which demonstrates acceleration along three independent trends:

- scaling of online settlements between economic actors;
- preparation of projects for central bank digital currency (CBDC);
- growth in the capitalization of cryptographic decentralized currencies themselves.

By the beginning of 2021, the broad issues of FinTech had become the focus of business news based on the results of tag-analysis. Digital money has led financial innovations and has been the subject of additional attention in this study. It should be noted that the increase in texts mentioning decentralized digital money, with all the heterogeneity of expert positions, accompanied the trend of unprecedented growth in the capitalization of all leading cryptocurrencies.

The plans for the release of the Central Bank Digital Currency (CBDC) received great attention both in the documents of the monetary authorities and in the discussion of the scientific or business communities. However, unlike cryptocurrencies, the CBDC still for the most part remains at the level of project discussion or pilot monitoring.

As follows from the analysis of the main digital tags of the banking sector, which is the leader in the total number of digital solutions, they are far ahead in the development of other technologies:

- creation of banking ecosystems, which at the same time seek to absorb FinTech startups;
- mobile banking;
- remote customer identification (KYC), biometric technologies;
- Open API, synchronized universal interface for clients, development of embedded finance elements.

The decline in interest during the pandemic affected the microfinance sector and the sharing economy, which is understandable given the imposed isolation organizational measures. In some way, they can be compensated by the emergence and growth of a new direction of the financial sharing economy—crowdlending or other lending platforms that provide services not only for equity financing but also for joint ownership of any property to generate income.

The stock market experienced the greatest volatility during the pandemic, yet in the second half of the year not only compensated for the fall, but also managed to increase the inflow of investments. It is important to note that stock indices of FinTech companies showed significant gains compared to the indices of leading general corporations (Ponamorenko, 2020). For example, the most representative S&P 500 (SPX) index for 2020 rose 16.1%, with FinTech giants accounting for most of the growth.[1] At the same time, the KBW Nasdaq Financial Technology (KFTX) Index, which measures 49 public FinTech companies, rose 36.7%, with an advance of 2.3 times.[2] KFTX brings together companies with capitalization above $500 million, such as Visa, MasterCard, PayPal, and large FinTech startups. An even faster growth in 2020 was demonstrated by another popular Matrix FinTech Index, which estimates the dynamics of capitalization of the 25 largest public FinTech companies as +97% (Jolis et al., 2021).

However, the digitalization of the capital market is inferior to similar trends in the monetary and banking sectors. The largest share were:

- robo-advising;

[1] Calculated by: https://ru.investing.com/indices/us-spx-500-advanced-chart/ (Access date 30 March 2021).

[2] Calculated by: https://ru.investing.com/indices/kbw-nasdaq-financial-technology/ (Access date 30 March 2021).

– digital financial assets (DFA).

It should be noted that the DFA received wide discussion in Russia thanks to the adoption in July 2020 of the Federal Law "On digital financial assets, digital currency and on amendments to certain legislative acts of the Russian Federation" N 259-FL.[3] The technologies of digitalization of assets themselves, associated with "crowdfunding" or "crowdinvesting," have not yet successfully penetrated the stock market.

The insurance market looks the least technologically secure so far. It uses all modern digital technologies in organizing sales, business processes, and accounting, but it is not an incubator for creating basic digital tools, unlike the monetary or banking markets. It is no coincidence that insurance did not fall within the clusters of the most mentioned tags in the financial problematic and thus did not constitute part of the framework of the methodology of this study in. The insurance sector was generally neutral toward developing technological innovations during the pandemic. At the same time, the year of isolation gave a quick impetus to the development of remote insurance services, primarily telemedicine.

Forms of Digitalization of the Financial Market

Extrapolation and innovation in the digitalization of the financial market take many forms. Extrapolation trends are seen through the extensive expansion of the application of new products and technologies in various forms. Innovations concern a wide variety of aspects of the financial market's functioning. There are three areas of innovation: technological, product, and organizational.

Technological innovations relate to the technologies of the digital financial market; in principle, they are the same for all its segments. These are online contracts, artificial intelligence, big data, and machine learning technologies. In different branches of finance, their application has its own characteristics, proceeding from the content of urgent tasks. For example, in the banking sector in 2021, experts name five main

[3] Russian Federal Law "On Digital Financial Assets, Digital Currency and on Amendments to Certain Legislative Acts of the Russian Federation" dated July 31, 2020 N 259-FZ (last edition). http://www.consultant.ru/document/cons_doc_LAW_358753/ (Access date 08 April 2021).

trends in technological development: cybersecurity; payments; Artificial Intelligence; customer journey profiling; and digital mortgage.[4]

From the client's point of view, the innovative aspect of digital technologies consists of the gradual complication of a simple online contract by introducing new elements into it that qualitatively change its content. If a simple online contract is based on the interaction between two parties—the bank and the client—now a third active element appears in it—Artificial Intelligence, which is directly involved in the conclusion and maintenance of the contract, including the possibility of external control over it. Since 2019, AI technologies have been widely demanded by Russian banks and are becoming one of the main directions of their technological development (Kirakasyants, 2021).

Organizational innovations include new forms of business organization in the financial sphere based on the integration of previously independent branches of financial activity. The first such form was ecosystems, which are digital platforms that connect producers of various financial services and their consumers. The creators of financial ecosystems were originally banks, which play a leading role in the functioning of the financial market. Currently, the initiative is increasingly being intercepted by global digital platforms, crushing banks, and posing a real threat to their independent existence. It is no coincidence that Sberbank is positioning itself not as a bank but as a universal technology company that in the future will compete with such giants as Google, Amazon, and Alibaba.

The most promising form for Russian banking ecosystems is considered to be a marketplace intended for retail sale of a wide range of financial products. The regulator helps to promote this form. In December 2017, the Bank of Russia initiated the Marketplace commercial project, which is close to completion. In 2020, the law of the Russian Federation "On the execution of financial transactions using a financial platform" was adopted, which opened up new opportunities for the platform form of business and revived competition between financial institutions. This is due to the fact that the terms of competing offers are in the public domain and consumers have a choice.

The development of banking digital platforms is going in two directions: financial marketplaces, and ecosystems of a universal type, with the inclusion of non-financial assets. Both of these forms carry many problems

[4] Top-5 technologies in banks: experts named the main trends of 2021: Frank RG [Electronic resource]. https://frankrg.com/38577/ (Access date 28 March 2021).

from the point of view of organizational and legal status and state regulation. Based on the Russian experience, the platform business model is formed by the leading bank as a multi-level holding structure based on a system of participation in capital. This holding includes a digital platform as an infrastructure support for the banking ecosystem.

The digital platform is superior in nature and potential to any industry organization. It strives to expand and include more and more new businesses. According to lawyers, digital technological platforms are a new organizational and legal form of economic activity, which has not yet received a final legal definition. The owners and operators of such digital corporations can be subjects of various organizational and legal forms. Moreover, the system of their interaction often takes on a transnational character and is still outside the sphere of special legal regulation (Kartskhia, 2019).

The presented analysis of the financial and technological aspects of the financial market determines the significant factor differentiation of its innovative development. The dialectic of this process is manifested in the sequential formation of an objective information environment and enables assessing the specifics of innovative and/or technological development. The information environment is represented by arrays of unstructured natural information, which simultaneously reflects the current state of the financial market and acts as a driver of decision-making by its subjects. Thus, through the quantification and structuring of natural information arrays that multidimensionally describe financial markets, it will be possible to produce mathematically significant and reliable descriptions of the specifics of innovative and/or technological development.

The most innovative content component in the information environment, from the point of view of mathematical interpretation, could be the exponential nature such dynamics take when increasing over time. This thesis is most effectively described by the Gartner model—the "Gartner Hype cycle." This model describes the process of technological development by the function of a fifth-degree polynomial, where each change in direction characterizes the corresponding stage of technology development. The most significant stage is the first one—"Technological trigger"—since it is this that determines the innovative nature of the technology. This stage is described by an exponential growth curve in the presence of technology in the information field, which is inevitably accompanied by a research process. Consequently, the identified stable content components of the information environment of the financial market—as

seen in the Gartner model—can be interpreted as characteristics of innovative and/or technological development; thus, the process of describing such developments in the financial market is based on the identification of the components of the information environment of the financial market, found in the Gartner cycle from a dynamic point of view, and primarily by the function that describes its first stage.

$$\frac{\sum_{i=1}^{n}\left(a_{\exp} * e^{b_{\exp} * t_i} - \overline{f_t}\right)^2}{\sum_{i=1}^{n}\left(f_{t_i} - \overline{f_t}\right)^2} \geq \frac{\sum_{i=1}^{n}\left((a_{\text{lin}} + b_{\text{lin}} * t_i) - \overline{f_t}\right)^2}{\sum_{i=1}^{n}\left(f_{t_i} - \overline{f_t}\right)^2}$$

1. $\overline{f_t}$—average frequency of token t mentioning.
2. f_{t_i}—frequency of token t mentioning in period i.
3. t_i—number of the period i.
4. $a_{\exp}$—free term of the exponential regression equation.
5. $b_{\exp}$—regression coefficient of exponential regression equation.
6. a_{lin}—free term of the linear regression equation.
7. b_{lin}—regression coefficient of linear regression equation.

The concentrators of relevant information are digital academic resources, which primarily aggregate scientific research information. The process of technological development is inevitably based on the results of preliminary scientific developments regarding innovations. ResearchGate is one of the most widespread and universal resources for aggregating scientific research results. This resource essentially performs the functions of a social environment in the academic community and allows users to freely post both the research reports themselves (articles, monographs, etc.) and information about these reports (titles, annotations, presentation materials, etc.). The posted information has meta-characteristics, in particular the time of posting, conditional topics, and so on. Quantification of this information can be made on the basis of a primary division of the content extracted thereof into tokens, followed by the vectorization of these tokens in accordance with the frequency of mentioning for a certain period. For the purpose of identifying tokens that directly characterize the innovation topic, it is necessary to determine the degree to which the properties of the function describing the dynamics of the quantifier of the frequency of each token's mention correspond to the properties of the function describing the first stage of the Gartner cycle. This correspondence can be determined by a comparative assessment of the frequency

approximation quality of each token's mention over time by an exponential function and a linear function. In the event that the volume of the described variance of how frequently a token is mentioned by the time parameter is higher when the values are approximated by an exponential function, this token (as well as the topic it defines) can be characterized as innovative. This property can be described by the following inequality:

$$K_{t.t._i} = \frac{T.T. \cap N.T._i}{|N.T._i|}$$

1. $K_{t.t._i}$—coefficient of innovative technological financial topics presence in the news background of the financial market during the period i.
2. $T.T.$—array of tokens describing innovative technology finance topics.
3. $N.T._i$—array of tokens describing the news background of the financial market during the period i.

It is proposed that an array of tokens be formed, based on the processing of titles and abstracts of articles presented on ResearchGate under the thematic tag "Financial Markets." ResearchGate is technically capable of extracting the last 10,000 titles and annotations, which in the case of the Financial Markets topic covers the time period from November 2013 to March 2021. The generated dataframe can be considered sufficient for a statistical study. However, the array of tokens formed based on the results of this quantification procedure is not exclusive in terms of describing the technological development of financial markets, but describes the entire set of topical innovative research topics. Thus, within the framework of the dedicated array of tokens, it is necessary to single out a sub-array of tokens that characterize precisely the innovative technological development of financial markets. The most effective tool for identifying content-thematic components of the information background, based on processing the vectorized frequency array of tokens, is clustering. As a clustering algorithm, it is proposed to use the k-means algorithm, which allows dividing an array of tokens into a given number of clusters. To determine the optimal number of clusters, it is proposed to use the silhouette estimate. According to the results of clustering, each of the identified clusters is analyzed from a meaningful point of view, and clusters are identified that reflect exclusively technological topics. Based

on the results of this stage, the final array of tokens is formed, which forms the "Bag of words" model.

As part of the next stage of the described methodology, it is necessary to quantify the level to which the corresponding technological topic (as described by the formed array of tokens in the information environment of the financial market) is present. The presence of technological topics can influence the behavior of financial market participants, since, from the awareness of technological transformations, participants revise their strategies for their behavior in the market, taking into account the integration of these technologies and the risks associated with this. Significant dominants within the framework of this information environment are the news background, which is a collection of news describing the state of the external and internal environment of the financial market, and an expert background, represented by a collection of opinions of experts in the field of financial markets. However, the expert background has a much more specific audience, while the news background is conditionally uniform. Thus, for the purposes of this study, it is most expedient to analyze the presence of an innovative technological component in the content of the news background of financial markets. For these purposes, it is also proposed to use time-spaced news headlines dedicated to financial markets. The aggregate of these news headlines can be retrieved for a specific date on a given topic using "Google News" library tools. The formed array is also subject to primary tokenization. Thus, to assess the presence of innovative technological topics in this background during a given period, it is necessary to determine the intersection of two sets: (1) an array of tokens describing innovative technological financial topics and (2) an array of tokens describing the news background of the financial market in a given period.

The characteristics of the relationship between the dynamics of market indicators and the parameter under study are of analytical significance; market indicators can be used as indicators of the value and/or profitability of target shares, from the point of view of the researcher, enterprises, and global indicators reflecting the state of the financial market. Within the framework of this study, the following were identified as relevant indicators:

- S&P 500—a stock index which includes 505 selected publicly traded companies with the largest capitalization;

- NASDAQ Composite—a stock index composed of ordinary shares and similar financial instruments of all companies traded on the NASDAQ stock exchange;
- Price of the EUR/USD pair;
- Dow Jones Industrial Average—price index of 30 blue chips, which, as a rule, are leaders in their industry;
- Bitcoin USD—the price of bitcoin—cryptocurrencies with the highest level of capitalization;
- CMC Crypto 200 Index—an index covering the top 200 digital assets by market capitalization (over 90% of the global crypto market);
- CBOE Volatility Index—an indicator of market volatility expectations;
- FTSE 100—an index of the British Stock Exchange, based on the stock prices of 100 companies with the largest capitalization.

To study the relationship between the presence of innovative technological topics in the financial news background and the selected indicators, it is effective to use the methodology of regression analysis, which makes it possible to determine the following indicators of the characteristics of the relationship:

- Regression coefficient as an indicator of how strong the influence of the presence of innovative technological topics in the news background on a specific financial indicator.
- Coefficient of determination as an indicator of the volume of the financial market described by the parameter of the presence of variance.
- P-level an indicator of the significance of the analyzed connection.
- The above methodology can be algorithmized. A graphical visualization of this algorithm is shown in Fig. 15.1. The automation of the implementation process of the presented research algorithm is possible using Python 3 programming language.

Discussions

Based on the results of the implementation of this algorithm, within the framework of the primary stage, 9,634 pairs of titles and abstracts of

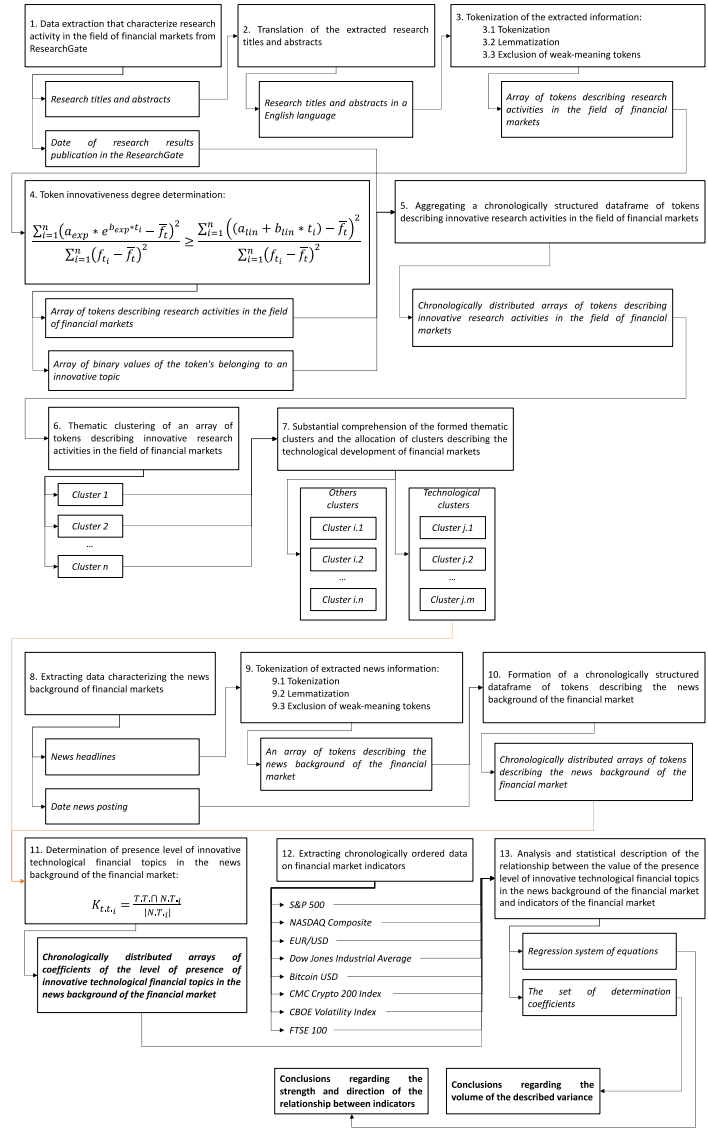

Fig. 15.1 Research algorithm

research in the field of financial markets were extracted, covering the time period from November 2013 to March 2021, divided by month (90 periods). According to the results of the initial tokenization, 2,281 tokens were allocated. The subsequent comparison of the quality of the approximation made it possible, on the basis of this array, to single out 1,991 tokens, the growth dynamics of which corresponds to the properties of the first stage of the Gartner cycle and therefore which can be designated as characterizing the innovation theme. Subject clustering of the formed array of tokens made it possible to establish that the most effective number of thematic clusters is 10. These clusters can be divided into two basic groups—technological and non-technological. The analysis of the content of each of the clusters made it possible to form mental maps, each of which describes a unique innovative direction of research in the field of financial markets, namely:

- Cluster 1—the transformation of financial markets in the wake of the COVID-19 pandemic ("epidemic," "coronavirus," "virus," "unemployment," "stable"). This cluster is the most dynamically developing due to objective reasons.
- Cluster 2—the impact of the international political environment on financial markets. This cluster is one of the most dynamically stable ("Brexit," "uncertain," "community," "UK").
- Cluster 5—the impact of agriculture on global financial markets ("agricultural," "rural," "farmer," "taxation"). The increase in interest in this topic is largely due to an increase in interest in the resource provision of the third world countries, due to the development of the concept of sustainable development.
- Cluster 6—the impact of the global oil and gas industry on the global financial markets ("carbon," "CO2," "gas," "fuel").
- Cluster 7—the concentration of global financial markets and their consequences for society ("merger," "dividend," "jones," "shareholder"). This cluster is primarily represented by research in the field of assessing globalization.
- Cluster 8—the impact of the development of the countries of Asia and the Middle East on the global financial markets ("Thailand," "Asian," "Eastern," "regional"). This cluster is also one of the most dynamically developing.
- Cluster 9—the financial condition of developed countries in the post-crisis era and their impact on world financial markets ("federal,"

"capitalism," "broad," "broad"). This cluster was largely modeled by Cluster 1, and at the moment they are largely contiguous.
- Cluster 10—predictive modeling of the behavior of financial market entities ("benchmark," "forex," "IPO," "dividend"). This cluster unites research, the results of which are, first of all, mathematical models.

The influence of these thematic clusters on the development of financial markets is undoubtedly, however, within the framework of this study—it is precisely the clusters of technological topics that need to be considered. Within the framework of "clusterization," 2 *technological* clusters were identified:

- Cluster 3—innovative technologies for organizing financial activities ("internet," "interbank," "crowdfunding," "FinTech"). This cluster brings together research in the field of "FinTech."
- Cluster 4—cryptographic technologies in general and the impact of crypto volutes on global financial markets ("bitcoin," "cryptocurrency," "blockchain," "cryptocurrencies"). This cluster separately unites exclusively research in the field of cryptocurrency development.

Thus, within the framework of assessing the coefficient of the presence of innovative technological financial topics in the news background of the financial market, only 2 highlighted technological thematic clusters are used. The Google News library of financial market news items has also been tokenized.

As part of checking each of the 8 possible regression equations, it was identified that 7 of them are degenerate, as indicated by the unacceptable values of the p-level indicators for exogenous variables. The only confirmed statistically significant relationship with exogenous variables is the indicator of market volatility expectation (CBOE Volatility Index). This relationship is described by the following regression equation:

$$\begin{aligned}\text{CBOE Volatility Index}_i = &23.3 + 104.1 * K_{t.t._i}(\text{Cluster3}) \\ &- 168.7 * K_{t.t._i}(\text{Cluster4})\end{aligned}$$

The coefficient of determination of this equation is 0.039, and thus the change in the indicator of market volatility expectation by only 3.9%

is described by the change in the coefficients of the presence of innovative technological financial topics (represented by thematic clusters 3 and 4) in the news background of the financial market. This value is rather insignificant, but it is necessary to take into account the local specifics of these factors. At the same time, these clusters have a differentiated effect on the market volatility expectation indicator—the presence of Cluster 3 increases the volatility expectation indicator, while the presence of Cluster 4 decreases it. This property may indicate the specifics of the perception of these topics by market entities—news about the development of crypto-absolute technologies reduces the expectation of market volatility, while news about new financial technologies increases it.

Conclusion

Evaluation of financial technologies as tools of the economy shows that there are two trends in their development:

1. broad FinTech—digitalization of servicing the financial flows of the economy,
2. limited FinTech—digitalization of the financial market itself, i.e., financial instruments built on the basis of IT solutions for the formation of financial assets in new digital formats.

The first trend is represented by the extrapolation of technologies, when there is an increase in the number of digital technologies of the financial market, which makes it possible to ensure the availability, convenience, and speed of basic financial instruments.

The second trend, which characterizes the transition of the amount of FinTech to a new quality, is developing on the basis of aggregated financial services and platform solutions, which was given impetus by financial marketplaces. In the future, this trend will lead to a transition from platforms as financial consultants to platforms as designers and provide a comprehensive financial solution to any economic issues.

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CHAPTER 16

European Investments Opportunities After COVID-19

Natalia A. Nevskaya

Introduction

2020 was the year of the accelerated transition to new economic relations due to the pandemic and lockdown. The transformation of international economic relations was caused by the objective dynamics of the cyclical development of the economy, as well as trade wars, mutual sanctions, and epidemiological problems (Novoselova, 2020). The competition in many industry markets for investment has intensified in the context of a fall in foreign direct investment to 42% from the previous year's level. European industry has an established structure that reflects the demand in the domestic and international markets. The Eurozone is characterized by a fall in investment in the negative area. The transition to a new technological order entails the need to transform the organization of business processes within European companies and production chains within industries and clusters, the formation of new markets, and the direction of successful investment opportunities. The global economy is

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undergoing a period of major structural changes. The article examines the possible application of investments through the novelty of labor and capital markets, changes in the structure of global value chains, and the reduction of transaction costs through the introduction of new technologies. Taking into account the foundations and political-economic patterns of transformations in modern conditions, will allow countries to acquire competitive investment advantages at a new stage of economic development.

Methodology

The economic changes caused by the COVID-19 pandemic have affected many areas and are reflected in modern publications reflecting the investment potential of traditional European industries. The researchers' works reflect the main trends of economic development in technologies and the social system related to climate.

Ninni (2020) explores the influences played by asymmetries between European and Chinese incentive policies in renewable energy sources (RES), considering Chinese investments in the EU. Deeney (2021) demonstrates the decision support tool with an application to evaluating the R&D investment potential in CO recycling technology, where an energy commodity is produced.

This study by Youssef (2021) investigates the time-varying VAR (TVP-VAR) model of the dynamics between the index funds and the effect of economic policy uncertainty; this was built based on all 8 countries where COVID-19 was most widespread (China, Italy, France, Germany, Spain, Russia, the US, and the UK) over a 5-year period.

How ICT affects economic growth in the euro area during the economic crisis was studied by Laitsou et al. (2020); "ICT capital is a factor of growing importance, during the economic crisis, which contributes positively to the economic growth of the Eurozone". The Russian authors presented in this paper study the fundamental foundations of transformations in the economy. S. Glazyev (2020) studied noonomics as the core of the formation of a new technological and world economic order; Lenchuk (2019) considers new trends in the formation of the global economic space in the context of the Fourth Industrial Revolution; Osipov (2021) discussed the digitalization of the state.

The work uses the political economy and world-system approaches to assess shiftable market transformations and industrial leadership.

Results

Investment flows in European industry depend on the principles of investment plan, planning indicator, and the goals of the institutional investors.

The main direction of transformation in investment is set through the documents of national and supranational regulatory organizations (Defau, 2020). The transformation of European industry is being carried out in line with the UN Sustainable Development Goals. Prospects for large investments in the future will have those European industrial enterprises, the goals and principles of which will correlate with "The 17 United Nations Sustainable Development Goals", which "give us a global plan for a sustainable future, both economically, environmentally and not least socially". In particular, the following goals are associated with the development of industry:

Goal 7: Affordable and Clean Energy.
Goal 11: Sustainable Cities and Communities.
Goal 12: Responsible Consumption and Production.
Goal 13: Climate Action.
Goal 15: Life on Land.

State policy documents also have a serious regulatory impact on investment processes in European industry. With the onset of the systemic crisis of capitalism in 2007–2009, liberal market states changed their attitude to the principles of the free market and developed documents regulating state intervention in market relations through new development strategies. In 2020, the EU updated the main body of documents on their industrial development. At the beginning of the year, these included:

A New Industrial Strategy for Europe. Brussels, 10.03.2020.
An SME Strategy for a sustainable and digital Europe. Brussels, 10.03.2020.
Identifying and addressing barriers to the Single Market. Brussels, 10.03.2020.
Shaping Europe's digital future. Brussels, 19.02.2020.
A European strategy for data. Brussels, 19.02.2020.

The main economic goals of these documents are the formation of protection for European manufacturers and the expansion of sales markets

through new technologies and standards. The main methods for achieving these goals are digitalization and climate neutrality.

Due to the low rates of investment activity in Europe, in 2020 the European Commission adopted a number of programs aimed at increasing investment activity in the region. Global foreign direct investment fell by 42% in 2020 according to the UNCTAD report. European investment activity indicators are in negative zone.

The InvestEU Programme (2021–2027) was approved in the EU. The Investment Plan and the InvestEU Programme will form to boost investment, innovation, and job creation in Europe and thus to mobilize.

In the documents of state and supranational regulation of investment activities, there are now the main guidelines for investing in European industry. In the structure of European industry, there are traditional export sectors that are attractive for investment under the influence of market competitive forces.

The largest investment opportunity in the traditional European industry is the automotive industry and its largest related industries: the battery industry and the creation of gas stations.

The main areas of investment will be associated with electrification and a change in the production of components towards an increase in the volume of sensors, the development of industrial software, and the further use of artificial intelligence in the automation of vehicle control. An important direction is to minimize the production of vehicles with internal combustion engines.

An important area of investment is the transformation of the automotive industry and the development of industrial software. Expanding the market with the aim of making a profit at all stages of the production process—from product development to after-sales service—is the basis for attracting investments, because through the mechanism of digitalization and standardization, control over the sales market is realized with an increased return on the rate of return on investment.

A related branch of the automotive industry—the production of batteries for the electrification of a wide range of products—opens up great opportunities for investment in European industry (Deeney, 2021).

1. Electrification is based on the concept of Battery Electric Vehicles (BEV). Japanese and European auto makers are currently in the lead, with Korean and other electronics manufacturers tapping into them.

In addition to reducing the risk of fire, solid electrolytes allow the anode to be made from metallic lithium, rather than from graphite, which is widely used today. Because lithium metal can hold more electrons than graphite, solid-state batteries can hold 50–60% more energy in the same volume. Sulfide-based solid electrolytes can also significantly shorten charging times.

Despite the long-term outlook, solid-state batteries have some limitations. Today they are expensive to manufacture because the manufacturing process is relatively new and very complex. Assuming most of the obstacles are removed within the next 5–10 years, solid-state batteries could revolutionize the way electric vehicles, smartphone storage, and other consumer electronics are powered.

2. Fuel Cell Electric Vehicles *(FCEV)* work on the basis of a gas in a tank, the constituents of which are usually hydrogen and oxygen, which, as a result of their chemical reaction, produce a current. Environmental aspects are important. Hydrogen cells produce the cleanest emissions: pure water.

However, fuel cell electric vehicles (FCEVs) are unlikely to become the mainstream choice for residential use for many years. Their advantages usually manifest themselves in the operation of the fleet, especially when long ranges are required (usually north of 150 km per day) and high payloads. For example, truck batteries have the disadvantage that they can easily weigh tons and take up a lot of space.

The EU pays great attention to the production of batteries. In addition to focusing on the environmental friendliness of the use of this type of technology in the automotive industry, in accordance with the goals oriented towards sustainable development, the use of this technology will make it possible to abandon the purchase of a certain volume of oil and petroleum products necessary for the operation of internal combustion engines. Thus, the EU will reduce import dependence and reduce economic and geopolitical risks while minimizing the volume of supplies of these products from Russia.

There is no extended network of stations at this stage. This is a separate area of application for investments. Due to the high pressure required to handle hydrogen, the safety requirements and fueling costs are higher than at petrol stations. The higher pressure also means that the

tank (carbon fiber) and car pipes are currently more expensive to build, especially with small volumes.

European manufacturers can become leaders in the production of new types of batteries. The EU supports battery manufacturers as they are an important part of the manufacturing process in the automotive industry. Therefore, there is a goal to minimize the dependence of automotive production on the supply of batteries from the territories of competing countries.

The second big investment opportunity in Europe's traditional export industry is the medical industry. The most important export branch of European industry is the production of medical equipment and technologies. The demand for transformations is formed not only by the laws of scientific and technological progress, but also by the challenges associated with the pandemic. The main directions of transformation in this industry are associated with a change in the dynamics of capital investments against the background of the pandemic, the spread of telemedicine, and the development of neurotechnologies.

Medical technology (Medtech) is one of the areas in which Europe and some other countries can already claim to be the world leaders (Bogoviz et al., 2019; Osipov & Skryl, 2021; Skryl et al., 2018). European Medtech is mainly represented by small and medium-sized enterprises.

The pandemic has multiplied attention to promising European medical technologies and gives investment opportunities.

1. Production of equipment to protect patients with COVID-19

With the transition to permanent hospitals and routine operations, new ways must be found to prevent infection in patients exposed to COVID-19. Key measures to do this include distributing patients to minimize contact, screening for the SARS-CoV-2 virus, and increasing the supply of personal protective equipment.

2. Digitalization in medicine

Telemedicine is not yet widespread, but it is in great demand. Lockdown has increased interest in this area of the medicine business, which will require investment flows in software and hardware medical technology (Laitsou et al., 2020).

A new line of devices with a greater emphasis on remote monitoring will be required. However, physicians may require less equipment and fewer supplies to operate offline, which may have negative implications for volumes in some manufacturing sectors of the economy. Changes in the practical field of medical care should shift the interest and application of investments from the real field of production of medical protective equipment to the development of software and hard technologies for remote access to the patient.

3. Neural interfaces are brain-to-computer interfaces (BCIs). Current scientific research focuses on both non-invasive and invasive technologies. Neural interfaces provide access to the brain for people with neurological disorders, such as paralysis, and enhance the natural function of the human brain through direct connection to a computer. Several technologies exist today that can help paralysis and stroke survivors "type with their minds" and control external machines. Neural interfaces take this interaction to the next level.

Commercialized applications will have a long-term impact on industries such as healthcare (where surgeons can receive real-time feedback while on the job) as well as education, gaming, and market research (where participation can be measured in real-time).

Years of research have led to therapies such as cochlear implants for hearing loss and retinal implants to restore vision. Recent advances in artificial intelligence and new technological developments in chronic neural recording devices have made it possible to consciously control robotic limb prostheses used by people with paralysis. These developments are pushing the industry toward a turning point for commercialization.

Despite the enormous potential, neural interfaces face many limitations. They are mostly limited to low bandwidth interfaces. Despite the progress made with regard to surgery and implantation of devices, their durability is an issue.

The third traditional export industry is consumer goods manufacturing: investing in the global consumer brands.

The European industry is represented on the global market by well-known brand names in a variety of industries, from luxury goods to proven food suppliers. The development of this industry is closely related to e-commerce.

Entrepreneurs managing or supporting Europe's leading consumer brands can benefit from the quality, reliability, and safety that are the hallmarks of these brands. Nevertheless, to survive in a post-pandemic world, they will need to switch to e-commerce. A distinctive feature of the European consumer goods industry is the establishment of production and consumption standards at a high level of quality. In particular, the brands included in a global luxury groups—LVMH, Kering, Richmonde—belong to the European industry with a high potential for investment attractiveness. These companies are focused on traditional forms of sales, but the pandemic has made adjustments in the relationship with consumers and intensified trade through the Internet. These companies use both their own and external Internet sites; for example Farfetch, Matchesfashion, Net-a-Porter. The pandemic has raised interest in home delivery to a new level.

Since the European industry is an active participant in international trade in the sale of final goods and intermediate products, investment opportunities open up also in the classical areas of the development and production of new technological products. Such innovations take place within the framework of the possibility of connecting production equipment, the use of industrial software, and an analysis of data in the production process (Osipov & Roncevic, 2021). The Industrial Internet of Things will be at the core of this revolution, connecting machines with 5G networks.

Discussion

In contrast to the traditional export branches of European industry, new technological production in Europe may raise doubts about investment attractiveness, since Europe is losing its leadership in the production of a new technological order. The leaders of the new technological order are the United States and China (Dmitriev, 2019). The pandemic and lockdown contributed to the aggravation of the competition.

The technological leaders are the countries of the "core" in terms of global systems analysis. (Glazyev, 2020). The United States, China, and Europe are striving to win the technology race. The United States had a head start based on the economic achievements of the twentieth century, but China is catching up and even taking the lead in some areas (Fokin & Kuchuk, 2019). Since neither side is retreating, it seems that a

bipolar technological world is emerging, in which the rest of the world is a "periphery".

Each of the countries has its own "preferences" in the ways of achieving leadership.

- China is using industrial policy to develop its own industry and move up the value chain;
- The United States is paying more attention to the development of a competitive market in order to allow the private sector to develop using appropriate technologies;
- Europe is leading the way in setting standards in a number of areas such as data privacy and climate change.

The interaction of the leading economies on a global scale lies in the ability of the United States and China to develop technology, and of the European Union to develop global standards for the application of technologies. Climate or data protection regulations are highly dependent on the position of Europe. Europe's leadership in standardization is supported by the size and importance of the European consumer market for major manufacturers of industrial goods (USA and China), as well as the willingness of other countries (especially in Asia) to accept European leadership, traditionally focusing on European quality (Lenchuk, 2019).

Industrial policy is shaped by national governments and focuses on cutting-edge technologies, including cybersecurity, enabling technology, 3D printing, and social and workplace innovation in the EU.

As the EU is an alliance of different countries, harmonization of the legal framework is key. It is no coincidence that the Industry 4.0 initiative came from Germany, after which this concept has found widespread adoption. The European Battery Alliance is considered very important for the automotive industry. With just 20% of SMEs considered digital, transforming manufacturing sectors that were once a traditional strength with a high degree of automation and robotics is seen as another strategic challenge. Sustainable, low carbon, circular plastic technology is another pillar of the EU's technology economy (Wang, 2020).

While the US is leading the tech race, China is rapidly closing the gap. In the past few years, China's patent activity has skyrocketed, and is now ranked second behind the United States.

Conclusion

Since 2020, the pandemic has fueled the development of European traditional export industries for the introduction of new technologies. The European automotive industry and its related industries are a group of industries that dynamically reflect new trends in the digitalization of production and the consumption of finished products. According to some estimates, it is in this industry that a large economic transformation is expected, which will entail a decrease in employment and the release of a large share of labor resources (due to their replacement with technologies). It will become one of the most attractive areas for investments.

COVID-19 has contributed to the development of the medical industry. The investment opportunities of the medical industry will be manifested not only in Medtech but also in the classical production of medical devices.

International financial capital, state, and supranational authorities in Europe are pursuing an active policy to create future markets and form the foundations of the competitiveness of national European manufacturers. The existing structure of production and established consumer preferences are used. One of the main competitive advantages of a European manufacturer is the ability to set high production and consumption standards.

The main leaders in international industrial production are the United States, China, and Europe. Each leader has their own priority development areas. China is using industrial policy to develop its own industry and move up the value chain. The United States is focusing more on developing a competitive market to enable the private sector to grow. Europe is a leader in setting standards in a number of areas such as privacy and climate change. These places are attractive for investment.

The formation of new standards in the automotive industry will entail a change in the structure of export supplies of raw materials for internal combustion engines, which will affect the volume of exports from Russia to Europe.

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CHAPTER 17

Analysis and Suggestions on Financial Crisis Management Behavior During COVID-19 Pandemic

Guanghua Chen and Jiang Li

Introduction

It has been revealed repeatedly that disastrous events often led to rising enthusiasm for crisis management research and legislation. As we saw after the "9. 11" terrorist attacks, the 2003 SARS pandemic and the 2004 Indian Ocean tsunami, and other similar events, these emergent situations have made waves across the globe on discussion and researches on crisis management, from which the national crisis management legislation was proposed and introduced. The thoughts of crisis management have emerged in China as early as the "Spring and Autumn Period" (770BC–476BC). For example, the famous ancient historical record "Zuo Zhuan" (Zuo's Commentary) has the argument of "thinking of danger in times of peace, being prepared for potential crisis, being well-prepared and then

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no danger". The great philosopher in China's Ming Dynasty issued the "Flood Relief Card" to serve as a guide to disaster relief (Liu, 2020).

Modern crisis management theories began to emerge in 1960s. Different from the previous paradigm of crisis management that only revolved around natural disasters, the modern theories of crisis management, affected by the trend of reflection on the World War II and the Cold War, have gradually extended into the new-emerging field of national security. Until recent years, the realm of crisis management has covered extensive aspects including natural disasters, armed conflicts, counter-terrorism, public health safety, mass incidents, and safety incidents in production and construction. Early researches on crisis management focused on the causes of crises, the distinction of crisis situations, and the social and economic impact of crises. For example, Habermas defines the concept of social crisis, and his views show a certain degree of ideological favor. Habermas doesn't elaborate on natural crises, but analyzes other forms of crisis such as cultural conflict crises and administrative management crises from a sociological perspective (Habermas, 2009). Rosenthal et al. (2014), employing empirical research methods, analyze different forms of crises, including terrorism, natural disasters, public health incidents, etc.

Methodology

Based on systemic researches on the impact of crises, Lewis Coser (1989) believes that social conflicts do not always bring negative effects. Rather, Social crises may serve as an opportunity to reduce conflict of interests through proper management, and as a result, promote social unity and harmony. As the understanding of crisis continues to deepen, the focus of crisis researches has gradually turned to early warning of crisis, crisis handling and other management measures. The "4R" model of crisis management proposed by Robert Heath (2001) covers reduction of crisis management, readiness for crisis warning, response and recovery. Besides, Paul Slovic (2007) proposes a theoretical model of crisis decision-making as well as its analytic methods, which can help improve the efficiency and quality of crisis decision-making by enterprises and governments. Akin Byrne et al. (2010) argue that decision-makers with regard to crisis relief need to improve their decision-making ability under social pressure, and the power shall be distributed in a way that combining internal decentralization and external centralization.

Crisis management was in the focus of Kouzmin (2008), McConnell (2011), Saunders and Allen (2010), Pearson and Mitroff (1993), Gilpin and Murphy (2008), Subbarao (2020), Wong and Yongnian (2003), Wright et al. (2020), Rapoport (1962), Ahmed (2006), Brecher and James (1988), Regester and Larkin (2005), Nakano (2017), Shrivastava and Statler (2012), Grewal and Tansuhaj (2001), Thompson (2004), Rehman (1998), Oyama (2010), Knight (2001), and Shin (2018).

Before 2003, the academia in China did not attach much importance to crisis management researches. And most of the researches took the form of introducing foreign crisis management theories, and their main focus was crisis management issues from the perspective of international relations. After the 2003 SARS pandemic, China experienced consecutively many natural and social crises, such as the 2008 Southern Snow Disaster and the Great Wenchuan Earthquake in 2008. Motivated by major crises during this period, researches on crisis management began to be flourishing, and the scope of research at that time covered a variety of issues such as the organization of crisis management, governmental behavior concerning crisis, and legal governance of crisis situation, etc. The modern studies of crisis management is developing toward a more professional direction, with a trend of continuous expansion in research fields and diversification of more detailed research content, involving multiple disciplines such as medicine, management, law, and information technology, etc.

Results

Compared with crisis management in other discipline, the management of financial crisis has shown both similarities and differences. When establishing and improving legal governance, we should fully consider and make relevant regulatory measures conform to the characteristics of financial crisis management. The characteristics of crisis management in the financial industry are mainly manifested in the following aspects:

Firstly, in the context of economic globalization, the inherent tension between crises' regional derivative mechanism and their global nature remains. With the development of economic integration and the further deepening of "Reform and Opening up", it is foreseeable that the interdependence of financial markets will become stronger. In the time of global COVID-19 pandemic (hereinafter referred to as the Pandemic), the global supply chain and financial market bear the brunt of social crises

caused by the fears and effects of the virus. However, crisis preserves its regionality to some extent. Therefore, a country needs to manage its financial industry by employing flexible measures according to the economic status under the Pandemic, while also consider comprehensively the overall situation and the development of the international financial market.

On the one hand, management of financial crisis and its involving measures need to consider the impact of changes in the international capital market so as to avoid secondary financial risks caused thereafter. On the other hand, under the adverse impacts of the Pandemic, the real economy in the global chain which has attained an ever-higher level of global integration is deeply affected, and thus the downward trend of export or import business produce more financial supports with more precision to tide over the difficulties. In addition, sound crisis management measures in the financial industry, especially the development of financial technology or digital economy, can promote the transformation and upgrading of the traditional economy, and thus play an important role in enhancing the stability of capital market.

Secondly, the management of financial crisis is subordinate to the overall governance of social crisis under the Pandemic. Financial crisis management has to cooperate with crisis handling measures that are pointed directly to reduce their adverse impacts, and to obey the overall crisis handling arrangements. For example, under the early stage of the Pandemic, financial sector is expected to provide preferential supports to medical industry which has close relations with the supply of masks and protective clothing that are in urgent need to fight the virus. In addition, the accumulation of capital within a short period of time will certainly help stimulate the rapid development of related industries, but at the same time awareness should be made to prevent overcapacity and waste of resources.

Third, financial crisis management is characterized by its protracted cycle and long-term nature. For example, the road traffic system can quickly recover from traffic control under emergency, and the usual traffic operation mode begins to function. Under such circumstances, financial response measures may continue to exist for a long time after the epidemic has been put under control. Therefore, the policy choice of financial crisis management should consider comprehensively the possible impacts on the capital market and real economy in different stages of the emergent

situations, namely, the application of financial supports in coping with the crisis shall be made cautiously and with long-term plan.

Fourth, in terms of tools or methods, there are no essential differences between the response measures in times of financial crisis and that under the usual condition. Unlike other industries that require institution of separate measures in crisis, the main financial measures in tackling crisis are also applicable to normal financial supervision and regulation. For example, in a crisis situation, hospitals, public security, fire protection, social security, and other industries will usually adopt special emergent measures to deal with the crisis, which will be alternated or removed when the emergency condition disappears. The financial industry, however, presents a different view. For example, in order to facilitate small and medium-sized enterprises to raise funds, methods such as providing more liquidity through the open-market operations of the central bank may be adopted. In fact, such financial adjustment methods are also used in the daily operation of the financial regulation. Therefore, a reasonable conclusion is that the practical effect of financial crisis management is closely related to the development level of the capital market and the ability of financial market supervision. Thus, different from the need of emergent preparedness outside of daily operation with respect to crisis condition, the focus of the improvement of financial crisis management shall be on strengthening the regulation of daily capital markets and the improvement of financial supervision capabilities.

Discussions

It can be inferred from the above analysis of the characteristics of financial crisis management that, *inter alia*, the financial crisis management is both closely related and different from the overall social crisis management system. Especially, the financial industry needs to develop its own crisis management system and methods on the basis of overall coordination, with the purpose of achieving better crisis management results in more professional way. Based on the above-mentioned characteristics, the establishment of legal system for crisis management in the financial industry shall follow the following basic principles:

1. **The principle of openness and transparency.** "Sunshine is the best antiseptic". Openness and transparency should be the core principle of conduct governing financial regulation and operation under both

the usual and emergent conditions. During the epidemic period, one of the basic questions concerning crisis governance is how to provide financial support in the most efficient way under the premise that there is no obvious increase in the overall resources supply. In addition to scientific policy adjustment and proactive judgment, the legislation should also put more emphasis on the prevention of financial defrauds which reduce crisis relief resources, and some strict financial regulatory measures shall be taken legally to keep financial stability and capability. The core of financial regulation lies in information regulation (Zhang, 2019). For example, the diversification of the capital markets and the abundance of financing tools represent the level of financial development, and the construction of multiple layer capital markets, and the use of diversified financing tools must solve the essential problems of investor protection and prevention of systemic financial risks. The key of the solution is the acquisition of regulatory information. It can be seen that the ability and degree of information acquisition is the central element of the development of the financial industry. In the normal supervision and financial crisis management, information supervision is equally important.

2. **The principle of rationalization.** Crisis management in the financial industry must be both legal and reasonable. As the essential part of the overall social crisis management, the financial industry, belonging to a knowledge-intensive industry, has its own unique operating logic. And the practitioners in financial industry need to acquire *ex ante* specialized knowledge and have abundant practical experiences in this field to deeply understand the operating logic, upon which they can further engage in financial supervision, regulation, operation, and other relevant activities. Crisis management often prioritizes the value of efficiency and therefore, concentrated power allocation is usually required. It can be observed that the degree of public control over the financial industry is proportional to the severity and urgency of the crisis. For ordinary situations of emergency, independent management of the financial industry should be adhered so as to minimize the negative impact of crisis management.
3. **The principle of the unity of responsibility, right, and effect**. This principle means that the subjects involved in financial crisis management should achieve an organic unity in terms of the following elements including power allocation, obligation, and its

concurrent responsibility, benefit distribution, behavioral efficiency, and effectiveness (Xu, 2010). Emergencies are largely unpredictable to the effect that any anticipated legal arrangements or operational rules are hard to capture all the aspects of the crisis in advance. For this reason, the general legislative authorization is particularly important. In addition, in order to improve efficiency in crisis management, public power should be appropriately centralized to a certain degree permitted by the law according to the urgency of emergencies.

Therefore, in the state of crisis management, in order to avoid behaviors *ultra vires*, unauthorized power using, and power rent-seeking, it shall insist on the unity of responsibility and power. The distribution of benefits is mainly adjusted by the market mechanism in the usual state, and the legal relations formed by financial subjects can be generally put into reasonable allocation under the adjustment of the "invisible hands". However, under the emergent situations, the financial market shall not prioritize the pursuit of interests, and therefore the market mechanism may not continue to play an effective regulatory role. Only by scientifically and rationally configuring the subjects' responsibilities and rights in financial industry, crisis management can be provided with positive incentives. Efficiency and effectiveness are the goals that all behaviors in crisis management should pursue. In the financial crisis management, scientific and reasonable allocation of power and responsibility is the necessary basis for improving the efficiency of crisis management and as the result, achieving the goal of social recovery at last.

4. **Respect the principles of economic laws and business habits**. Economic laws and business habits are rooted in all economic activities and they remain largely stable *vis-a-vis* the alteration of social conditions. Crisis management activities in the financial industry should be carried out on the basis of full understanding and respect for economic nature and business habits, and violation of economic laws and business habits may result in inefficiency and even causing the risk of secondary economic disasters.

The above-mentioned basic principles of crisis management in the financial industry are interrelated. For example, the principle of openness and transparency is a necessary condition for achieving a reasonable allocation of responsibilities, rights, and practical results. Respect for economic

laws and business habits will inevitably require crisis management behavior to comply with the principle of rationalization. Therefore, it is essential for a comprehensive consideration of the above principles when constructing crisis management system in the financial sector, and conducting crisis management governance in a legal, efficient, and scientific way.

Conclusions

First of all, it is with great significance to establish an efficient communication and coordination mechanism between different financial supervisory authorities as well as between supervisory authorities and the regulated objects. Efforts should be made to build and improve the coordination mechanism between the financial supervision department and other government authorities in charge of crisis management, and the coordination mechanism between the central and local supervision department should be enhanced. At the same time, it is necessary to strengthen the communication between the supervisory bodies and those subjects under the supervision, especially the communication between the "first-line" supervisory agency in countering the Pandemic and the enterprises serving the fight against the virus. Financial supervision departments and financial institutions should go deep into enterprises, increase investigation and research efforts, ensure the limited resources are used on the cutting edge areas, and finally promote more precise and scientific decision-making by crisis management agencies.

Second, in order to improve the crisis management capabilities of regulatory agencies in the financial field, a service-oriented and rules-based regulatory framework should be established. The "paternalistic" supervision that exercises management by direct command, by putting the authorities' own will in the first place, is easy to cause lazy governance, which has been fully reflected in the behavior of crisis management. The service-oriented and rules-based supervision requires on the one hand, crisis management methods to be reflective of market demand, on the other hand, it should focus on advocacy norms with less or even zero use of mandatory orders. Also, indirect adjustment should be upheld as the mainstay and direct intervention as the supplementary means. During the Pandemic, the financial supervision department was able to actively guide various crisis management entities to fight the virus in accordance with the condition of the crisis and the purported objectives, and therefore

has provided a useful demonstration for further promoting crisis management in the financial industry. At the same time, the phenomenon of some financial regulatory agencies acting *ultra vires* occurred from time to time, and more attentions should be paid to scientifically and rationally carrying out crisis management activities under the legal framework.

Thirdly, as elaborated above, there are no essential differences in financial crisis management methods and tools between normal operations and emergent supervision. As a corollary, crisis management and usual condition management have a proactive, mutual-enhancing interactive relationship. The financial industry's crisis response efforts should be put more attention in the peacetime capability build-up. For example, building a multi-level capital market and providing a wealth of financing tools will play a huge role in alleviating corporate financing difficulties in times of crisis. If the financing channels are poor-constructed, it will be extremely hard for the government to temporarily create suitable financing tools to help companies to tide over the crisis. Another example is, in order to achieve the purpose of helping small and medium-sized enterprises to get sufficient financial support during the Pandemic, the central bank used open-market operations, among others, to provide more liquidity. Such financial adjustment methods are often used in the daily operations of the financial industry. Therefore, the effectiveness of crisis management in the financial industry is closely related to the developing degree of the capital market as well as the ability and efficiency of financial supervision. Contrary to the improvement of crisis management in other industries, the financial sector requires the authorities to strengthen crisis-coping capability through daily function and gradual accumulation of financial supervision experiences.

Lastly, we should seize the opportunity presented by the crisis to encourage the development of financial technology and regulatory technology. In line with the concept of building service-oriented financial supervision, to explore the newly emerging innovative financial transaction model, financial supervision should employ a more diverse and open mind, and provide a good supervisory environment for financial innovation. At the same time, financial supervision should serve to encourage the development of supervisory technology in response to financial innovation. For example, in the field of information supervision, the use of innovative supervision methods, such as "big data", "cloud computing", and AI, can effectively improve the efficiency and quality of supervision information acquisition.

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CHAPTER 18

Financial Crisis 2020: Problems and Elements of Forecasting

Elena E. Matveeva

Introduction

One of the urgent problems of the whole financial market at present is the situation of the financial crisis of 2020, caused by the pandemic financial crisis, the consequences of which a large number of experts are trying to determine. According to the majority of them, the global financial crisis will slowly spread and spread over 2–3 years, while others forecast the possibility of transition to a new financial system in the world.

The global financial market is now undergoing significant changes, as is the spread of COVID-19.

As the Secretary General of the Organization for Economic Cooperation and Development (OECD) J.A. Gurria says, "losses connected with the pandemic coronavirus infection COVID-19 as of January 1, 2020, exceed the losses from the financial crisis of 2008 and the September terrorist attacks of 2001". Despite the fact that in early 2021 the global

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recession (decrease of the production decline rate or slowdown of negative factors of economic growth) began, the economic growth is still either zero or negative in different countries. Thus, in general, the global growth will not only remain at a low level, but will recover for a long time (Aslam et al., 2021; Itani et al., 2020).

Globalization of the world economy should be grateful for digitalization; and the last one accelerated precisely because of the pandemic. Digitalization of financial market was in the focus of researches of Bobkov (2020), Shashkova et al. (2020), Inozemtsev (2021), Yukhno and Osipov (2021), and Osipov et al. (2021).

Methodology

Statistical methods are used to address the problem situation, modeling economic processes to introduce and attenuate preventive measures. The field of modeling is also the most appropriate calculations in the context of financial analytics, where in this study we can talk about, for example, the further spread of the disease.

In order to achieve the goal of the study, large amounts of global statistical data on COVID-19 were used, including data showing the main demographic trends in different countries 2019–2020. In order to assess the impact of the pandemic on oil-dependent countries, statistical information was also analyzed, showing the dynamics of world oil prices, the main indices showing the real state of the world stock markets. These data were subsequently used to determine the impact of COVID-19 on global financial markets. In addition, data from the World Customs Organization was also used to analyze the impact of coronavirus infection on world trade.

Under the global financial crisis should be understood the disruption of the financial and credit systems of a number of countries, which is a consequence of the international monetary system (Santos-Arteaga et al., 2020).

In general, financial crises cover various problems of the global financial system. Monetary capital is considered to be the center of financial crises, and the sphere of manifestation—the relevant credit institutions, as well as public finances.

The following characteristic features of financial crises are distinguished (Santos-Arteaga et al., 2020):

1. severe inflation;
2. an increase in the level of unemployment;
3. stagnant wages;
4. an increase in credit-financed investments;
5. prolonged volatility on the stock markets.

At the same time, we can also identify the main causes of financial crises:

1. an increase in the key rate of the Central Bank;
2. significant movements of monetary volumes;
3. individual behavior of investors;
4. low demand for food products.
5. interest rates due to changes in monetary policy are low, due to which additional growth of money supply cannot provide additional investment incentives;
6. production capacity increases the demand for foodstuffs.

Naturally, of current interest to us is the global financial crisis of 2020 triggered by the coronavirus pandemic and, more precisely, the possible measures to overcome it.

Discussions

At present, many countries in Europe are closed to reduce the spread of the coronavirus—an attempt to stop the financial chaos that is now present. Undoubtedly, the main leaders of the European Union point out that there are appropriate mechanisms at their disposal that can connect the member states of the European Union and help develop a certain flow of goods and services.

The COVID-19 coronavirus pandemic led to a decline in the financial performance of most countries. The closure of China's borders in 2020 had a corresponding effect on the drop in demand for oil, which eventually led to the breakdown of the OPEC deal to reduce oil production, further leading to a drop in oil prices. For example, as of March 6, 2020, the price of a futures contract for Brent crude oil (MOEX, USD per barrel) was just over $45. On March 10, the price dropped to $37.77, and already on March 27 it was $25.89. Analyzing Chinese customs data,

exports for 2020 decreased by 17.0% compared to 2019 and amounted to $292.4 billion. Meanwhile, also exports to the U.S. fell to 27.7% in January and February to $43 billion, leading to a 12.5% deterioration in December. China's global trade balance for the first quarter of 2021 fell to $8.1 billion. In early February 2021, the People's Bank of China announced that it would provide banks with 300 billion yuan in cheap loans to lend to businesses triggered by the pandemic. Falling oil prices are considered the main channel through which COVID-19 affects major oil-producing countries. Of course, there are a number of other factors, but still COVID-19 is the most important of them, since the pandemic has reduced demand and limited the Chinese economy in the first place. Since China accounts for about 14% of the world's demand for oil and, accordingly, more than 75% of the increase in demand for oil (Kwon et al., 2020).

The Republic of China has become the global center of the supply chain in recent years, and certain disruptions in the financial economy will have a negative impact on the economies of other countries as well. As a result of the COVID-19 pandemic, of course, the actual closure of China's borders led to a sharp decline in demand for oil. The movement of people internationally was also suspended. Airports and borders, factories and other industrial facilities were closed. In the end, such factors led to a worsening of the oil crisis. First of all, oil-dependent countries such as Russia had to adjust the budget, because initially the planning was carried out taking into account the higher level of oil prices. This situation is also reflected in the balance of payments accounts (Rashid & McGrath, 2020).

Countries such as Nigeria, for example, began to turn to foreign trade loans to fill their current account deficits. Because the pandemic is associated with the need for a large amount of investment, primarily in the health care system, which requires funds, equipment, and personnel to develop. In addition, the energy crisis during the pandemic saw the market decline to almost 1973 levels. As a result, the economies of oil-dependent countries were threatened by a decline in foreign exchange, which accounted for the volume of oil.

As a consequence, the full implementation of budget expenditures has become increasingly difficult. It is believed that the financial crisis is most dangerous for oil-dependent countries with small foreign exchange reserves, such as Nigeria.

Thus, a large number of European countries during the pandemic are forced to resort to external borrowing in order to cover their budget

deficits. At the international level the main global stock indexes started to decline noticeably provoked by the beginning of the COVID-19 pandemic. These losses were enormous and amounted to trillions of dollars.

Stock markets around the world demonstrated enormous volatility never seen before. The result was a cumulative loss of about 12.35% of the value from January to May 2020, or more than $9 trillion since the pandemic began. It is projected that by the end of 2020–2021, the decline in world trade will be 20–32%, as the pandemic COVID-19 causes disharmony of normal economic activity throughout the world.

Naturally, according to experts of the World Customs Organization, the decline has already exceeded the decline in trade caused by the global financial crisis of 2008–2009.

Estimates of the projected global trade recovery in 2022 are uncertain, and the outcome depends more on the occurrence of coronavirus outbreaks as well as the effectiveness of national responses.

Looking at global trade trends, we can say that there was a slowdown in 2019—before the pandemic began—as trade tensions began to rise, thereby slowing economic growth. In 2019, global merchandise trade declined slightly by 0.1%, after rising 2.9% in 2018. Consequently, the dollar value of global merchandise exports in 2019 fell by 3% to $18.89 trillion (Ji et al., 2020).

Other governments have also begun to adopt measures to support people and businesses. For example, on March 26, the U.S. Senate voted unanimously to approve an emergency aid package to the U.S. economy related to the effects of the coronavirus epidemic. Such aid would provide a certain amount of money to the U.S. economy in the amount of two trillion dollars. For example, individuals with annual incomes up to $75,000 received $1,200 each, and families with children received an additional $500 for each child. Those who lost their jobs because of closures due to the coronavirus temporarily increased their unemployment benefits. And individuals who had their wages cut were assigned special payments. There is also support for small businesses—367 billion dollars will be given to micro-business loans. An additional $130 billion was given to possible medical needs of eligible institutions. The remaining funds go to support businesses that have lost their customer base due to the spread of the COVID-19 coronavirus infection (Ji et al., 2020).

Italy, in turn, provided 25 billion euros worth of support to the economy. This so-called emergency decree provided €3.5 billion needed

to help health care institutions and €10 billion to support doctors and their families. The decree also increases parental leave, offers families help with babysitting costs and prohibits any layoffs after February 23, 2020.

The main Bank of Canada has reduced interest rates to support economic activity and keep inflation low and stable. For example, the Bank of Canada's overnight lending rate is 1 p.p. at the end of 2020 and beginning of 2021, while its deposit rate is 0.5 p.p. (Jacobs, 2020).

The Bank of England, following a similar example, went to reduce the rate to 0.1%.

The European Central Bank began buying bonds as part of an emergency program of 750 billion euros. Taken together, this amounted to 7.3% of the EU's GDP volume. Naturally, this program is temporary in nature and will operate only until the end of the phase of the coronavirus crisis. In addition, about 3 trillion euros of liquidity at a rate of -0.75% has been allocated as part of the refinancing. European banking supervisors have allocated more than 120 billion euros of additional bank capital from their reserves, which will also significantly support the sufficient lending capacity of Eurozone banks.

The UK government has formed a revamped Coronavirus Business Interrupt Loan model. This model allows every active business with a turnover of less than £45 million to obtain a loan with a government guarantee of up to £5 million. Interest payments and any fees from organizations that the lender pays will be covered by the government for up to 1 year. In addition, the government provides lenders with a guarantee of more than 80% on each line of credit to give lenders the added stability of being able to provide financing to small and medium-sized businesses (Gupta et al., 2020).

In the Russian Federation in the context of the pandemic coronavirus infection and a sharp decline in oil prices the Bank of Russia decided to implement a set of measures that can support the ability of the financial sector to provide critical economic resources that protect the interests of those affected by the pandemic and the availability of payments to the public, as well as to adapt the financial sector to the action of restrictive measures to combat the epidemic (Gallego et al., 2020). The main measure implemented by the Bank of Russia—granting credit institutions a special right until September 30, 2020 not to change the provisions on loans to borrowers, i.e. individuals in case of a sharp deterioration of their financial condition and/or debt service quality in the presence of official confirmation of the presence of coronavirus infection in such a borrower.

The Bank of Russia further expanded the loan refinancing program for small and medium-sized enterprises (SMEs). In addition to this instrument, related to the limitation of interest rates on loans to borrowers, a new instrument is introduced with a refinancing limit of 500 billion rubles to maintain the volume of lending to SMEs. Under each of these instruments, starting from March 23, 2020 the interest rate of the Bank of Russia is set at 4%.

The Bank of Russia also reduced the values of premiums to risk ratios on mortgage loans and loans for financing under the agreement on shared participation in construction, provided from April 1, 2020.

The peculiarity of the current crisis in Russia is that at its beginning the financial system of the country and its main component—the banking system—were in a good condition, which was characterized by low inflation in general, a large volume of profit in the banking system, good indices of stability and liquidity in most financial and credit institutions. This time the clients of the banking system, representing practically all spheres and segments of the domestic business, faced difficulties. The main problem now is the stoppage of work by a significant number of business entities, while maintaining the current level of costs (rent payments, wages, payments on loans, etc.). This inevitably leads to a decrease in working capital in the business, especially in its small and medium segments (Arestis et al., 2021).

It is worth noting that the Russian Federation has become the only country in which a new tax has been introduced as part of economic measures to combat COVID-19. Income from bank deposits, i.e. interest accruals, will be subject to personal income tax (13%) if the deposit itself exceeds 1 million rubles. This will also apply to investments in securities, income from which is not currently subject to income tax.

Conclusion on the outbreak of the coronavirus pandemic has formed a certain imbalance in the global economy, disruption of supply chains by suspending Chinese production in China. With the further spread of coronavirus around the world, especially in the United States, where the largest number of cases and deaths of the disease have been recorded. The coronavirus pandemic has begun to cause a rather serious decline in oil prices, which can be compared to the biggest tragedy since the 1991 Gulf War. All this jeopardizes the economic activity of oil-dependent countries.

A number of quarantine measures imposed by countries to smooth out and contain the coronavirus pandemic, such as quarantine, self-isolation regime, restrictive measures on international and local travel and trade,

etc., continue to have a negative impact on the entire global economic situation at present.

The impact of the pandemic on countries' economies is most likely to be the smaller the impact of the harsh policy environment that is currently in place to reduce the spread of the coronavirus. As a result of the spread of the coronavirus pandemic, all global stock markets have revealed their biggest and sharpest decline since the global financial crisis in 2008.

It is worth saying that it will take some time before financial analysts estimate the economic losses from COVID-19, make predictions for the resolution of the crisis situation and later for future generations, based on the invention of a vaccine against this virus and saving all mankind from the pandemic (Abdelsalam & Abdel-Latif, 2020).

It can now be said that the coronavirus pandemic has had a negative impact on all sectors of the economy, primarily health, tourism, trade, industry and the global (world) economy as a whole. The financial banking mechanism is trying to somehow reduce the negative effects of this situation. Central banks of different countries have joined and coordinated their efforts. Now, because of COVID-19, most countries periodically (at the height of the "waves") introduce quarantine measures, businesses suffer losses and are in bankruptcy, many are forced to stop their activities. In the United States, the Federal Reserve System has stopped forecasting the situation on a quarterly basis, as the market situation is very uncertain and financial analysts are not ready with a high degree of accuracy to determine exactly how many people are sick and what the duration of closure of certain events will be (Bodnár et al., 2021).

Thus, we can talk only about the first results of the crisis so far, primarily about economic and financial losses at the global level.

Results

We would like to hope that the pandemic and all restrictions associated with it will ever end; now it is difficult to talk about the economic consequences of organizations that have completely exhausted all their reserves, used up their working capital and quite possibly started selling their fixed assets. The activities of such enterprises, primarily socially important ones, indicate that they will no longer be able to return to their usual work, i.e. it is likely that after the removal of all restrictive measures we will see a large number of bankrupt enterprises and a significant jump in inflation

and unemployment. The current economic crisis and, in particular, the financial crisis will begin to manifest itself fully immediately after the end of the pandemic, having a significant impact in the banking sector, especially on the large customers of banks, but which will later have a dramatic effect on the serious problems in the entire national and global banking system (Palma-Ruiz et al., 2020).

The main danger for the global financial system is the growth of non-payments, primarily on issued loans, also tax payments and other budget revenues will sharply decrease, turnovers in trade (primarily in non-food products) will significantly fall, it will happen against the background of worsening low prices for raw materials and energy resources and a sharp decline in the ruble exchange rate.

The only possible way to reduce the growth of overdue credit debts is the introduction of the so-called credit vacations for physical and legal bank clients. Besides, another possible anti-crisis measure would be the introduction of the mechanism of interest-free loans or loans at a significantly reduced interest rate to replenish working capital, especially for small and medium-sized businesses, which are more affected by the restrictions of the coronavirus pandemic.

The Russian banking system, so far slightly affected by this financial crisis and coronavirus infection, now has the ability and opportunity to execute such measures. Since the credit vacations have already been announced, the very mechanism of issuing loans on favorable terms aimed at increasing working capital is becoming a very popular measure and is beginning to rapidly gain momentum, but reaching the limit here can be expected only after all quarantine measures are canceled.

Of course, many financial possibilities of the national banking system are of restrictive character, and it will not be able to function for a long time after the introduction of the special regime of credit vacations and interest-free credits.

In such conditions banks can initially lose their liquidity, and further many enterprises will become unprofitable because of low perspective of these measures, thus joining the rest of the national business (Akram et al., 2020).

The activities of the Central Bank, which has already begun to comprehend the process of almost completely interest-free lending to the national banking system in order to support its liquidity and solvency, can mitigate the crisis situation a little. Similar measures were taken in 2008, although

not all banks received such loans, primarily the largest of them, with the help of which, there is a re-lending of smaller banks.

Considering these measures of the Central Bank in the medium term, we can predict an increase in inflation, which generally becomes inevitable in the post-COVID period.

As a result of the cumulative summation of all the above factors, we can plan that the entire national banking system in 2021 will see a drop in turnover, a significant decline in financial results, huge problems related to liquidity and the loss of a huge number of customers and client base.

As a result, most banks will most likely have their licenses revoked, and the entire system will experience a rise in unemployment of about 20–30%. After the full end of the crisis situation (most likely in the next 2022), the recovery process of Russia's GDP volume will continue for some time, but the modern financial system will be a mitigating factor that guides and corrects the global economic development (Mahenthiran et al., 2020).

In such circumstances, it is necessary to forecast the financial performance of global trade in the world in terms of two different scenarios (Cristian & García, 2020):

1. the extremely optimistic scenario, which describes a sharp decline in trade, followed by a recovery phase at the end of 2021;
2. the most pessimistic scenario, which expects a longer initial decline and, correspondingly, a longer-lasting (until 2025) and still incomplete economic recovery.

Based on the optimistic scenario, the economic recovery will be very rapid, to bring the volume of trade closer to its initial stage, while the pessimistic scenario aims at only a partial recovery.

For example, after the previous financial crisis in 2008–2009, the global economy has come to a certain previous state, with the main role aimed at restoring global finances and global trade, the behavioral aspect of producers and consumers, in addition to their attitude to the pandemic will be important (He & Choi, 2020).

For example, if organizations and consumers view a pandemic as only a time-limited, one-time shock, then spending in investment activities on durable consumer goods may resume at close to previous levels after a decline in economic indicators occurs.

On the other hand, if pandemic outbreaks occur periodically and the process drags on, then household and institutional spending are likely to fall very much as well.

If we control the pandemic process, the volume of world trade will grow again, on this basis, economic growth in most regions could be fixed at about 21% by the end of 2021, considering the optimistic scenario, and at 24% by the end of 2025, considering the pessimistic forecast. In this case, the level of uncertainty is very high, and a possible situation where both for 2021, and for 2025, the results may be very different from the projected figures (Gabbi et al., 2020).

Conclusions

It is necessary to highlight the existence of three main channels through which a coronavirus pandemic can affect global finance: demand, supply and confidence.

The restrictive measures that had to be taken in accordance to prevent the spread of the coronavirus, mainly related to travel restrictions, the closure of international borders, the suspension of public enterprises and service companies, led to the disruption of the global supply chain (Jucá & Fishlow, 2021). The decline in demand is inevitably associated with the self-isolation of the population, a succession of layoffs, restrictions on movement, school closures and a sharp decline in the tourism and entertainment sector. Such measures create an unfavorable atmosphere of risky situations of uncertainty, adversely affecting the process of consumer and producer confidence. As a result, consumers have either postponed or reduced their consumption of goods and services. In turn, producers in the same way began to postpone or reduce the volume of production and investment, or refuse new investments (El-Hodiri et al., 2020).

Overall, the analysis of the impact of the coronavirus pandemic on the global economy helps to draw certain conclusions.

Firstly, coronavirus spreading in most countries has great consequences for the economy as a whole, as well as for individual countries and the world as a whole. Secondly, activities related to the adoption of public policies in different countries aimed at mitigating the economic costs of containing the pandemic may have some negative consequences in both the long and short term.

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CHAPTER 19

FinTech in the Post-COVID Period

Natalia G. Adamchuk

Introduction

The COVID-19 pandemic has become a turning point that is changing the world we are used to, creating unique challenges that many business leaders have never faced before. At the same time, the COVID-19 pandemic has become an additional trigger for the emergence of new factors in the development of the digital economy, a catalyst for new technological solutions in the management of economic processes.

COVID turned out to be a positive factor in the development of FinTech, as economic actors were forced to use information technologies to carry out financial transactions due to the lockdown and remote access. This is one of the positive aspects of COVID's onset, as digital technologies had been slow to enter the financial sector in the past. The need for remote access to financial services has become a factor in the development of FinTech. Social nets were also on the rise, as the lack of physical contact between people was made up for by communication through social networks. The representatives of the financial business also took advantage of this (Adamchuk, 2019).

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Every change that will be made to overcome the COVID-19 crisis will also affect operating models by changing strategic decisions in the field of digital financial technologies management in supply and value chains, while changing the regime from the business response to the regime of the inclusion of a new reality. Taking advantage of financial innovation offered by digital financial technologies (FinTech) in the areas of processes, technology, management, human resources, understanding needs, service delivery, and data will ensure the inclusion of the national economy in global value chains.

The relevance of the research topic is determined by the need to study the role of FinTech, which provided a solid foundation for business opportunities during the COVID-19 pandemic, offering digital support for practical plans in the global economy and in the financial market.

The active development of FinTech began in the 90s, when dotcom was widely developed. The e-business that developed in 2008 after the financial crisis and the decline in consumer confidence in traditional forms of providing financial services predetermined the further development of technological innovations at a rapid pace. Although, as noted by Gareth Gardiner (2016), back in 1972, the American banker Abraham Leon Bettinger proposed the acronym "FinTech" as "an abbreviation for financial technology, combining banking practices with management methods and computers" (Bettinger, 1972); but even in 2017, the possibility of a unified approach to the definition of the concept of "new financial technologies" was spoken of rather as an activity that poses a threat. However, the emergence of FinTech in the "gray zone" has led to the need to come to terms with their existence. Also, the adoption of the Bali Fintech Agenda (BFA) at the IMF and World Bank sessions in Indonesia means that this phenomenon cannot be ignored. The BFA did not precisely define the term "FinTech", but noted that it "can be broadly defined as those advances in technology that have the potential to transform the provision of financial services, spurring the development of new business models, applications, processes, and products" (IMF, 2018).

There are various interpretations of the term "FinTech". According to Mantas Katinas, Managing Director of Invest Lithuania, FinTech is the activities of small companies using technology (Thomson Reuters, 2021). On the other hand, according to Svetlana Pertseva, "FinTech is a dynamically developing segment at the intersection of the financial services and technology. In it, tech startups and new market entrants are applying innovative approaches to products and services currently provided by the

traditional financial services sector" (Pertseva, 2017); a similar opinion is shared by Manoj Kashyap (Manoj Kashyap et al., 2016). The Merriam-Webster Dictionary (2021) offers 21 formulations for this term. Thus, to this day, in modern practice, one final definition of the term "FinTech" does not exist, which creates serious difficulties for the regulators of the financial market, although the analysis of the dynamics of the development of the financial technology market is being carried out.

In 2018, the global financial technology market was valued at $127.66 trillion and is expected to reach $309.98 billion with an average annual growth rate of 24.8% until 2022 (PRNewswire, 2019). According to the UNESCO Institute of Statistics (UIS), in 2018, China invested 2% of GDP in this industry, and the United States invested 2.7% of GDP (UIS, 2020). Although, according to an analysis of pandemic crisis impact on investing for financial technological companies conducted by the consulting company "CB Insights", in the current period it may be the lowest compared to 2017 (CB Insights, 2020), this is (according to the author of the study) not related with a decrease in interest in technology, but is a consequence of the stagnation of the economy due to the pandemic. According to Kevin Bolen from KPMG (2020), as market volatility increases alongside the pursuit of technically sounding financial decision-making, the value of FinTech will grow. Whatever the case, investment policy has been an important part of a response to the pandemic; in the current crisis situation, as noted by the head of the BBVA venture investment department Gustavo Vinacua, many start-ups will have to reconsider their strategies, focusing on more profitable projects (BBVA, 2020).

The contradictions arising in this way determined the purpose of this study—to analyze the prospects for the development of FinTech as an industry in the post-COVID world. To achieve this goal, it is important to define what is meant by "FinTech"; to identify the advantages that allow new technologies to dynamically conquer the financial market; to identify the sectors of the financial market in which FinTech can be most developed; and to identify opportunities for the development of FinTech in the post-COVID world.

Methodology

For this study of the functioning and development prospects of FinTech in the post-COVID world, the methodological basis was general scientific methods, including a set of techniques such as synthesis, induction, deduction, analysis, and systematization, the method of interpreting new economic concepts and concepts.

The methodology for analyzing the most relevant judgments about the nature, purpose, and main content of the problem studied was based on the generalization and systematization of scientific information about FinTech.

For analyzing the need to accelerate the spread of new digital financial technologies in the context of the COVID-19 pandemic, an abstract-logical method research was used to identify the causes of this trend.

The methodology for analyzing the consequences of COVID-19 on the development of FinTech in the post-COVID world was an analysis of the works of scientists, publications in scientific periodicals, empirical studies, official materials of financial organizations, statistical data, and analytical reviews, in order to further identify the most perspective areas for developing problematic within the framework of the declared topic.

The methodology for the formation of the article provides system-structural tools that made it possible to formulate the purpose of the article, tasks, and conclusions.

Results

The analysis of opinions regarding the interpretation of the definition of the term "FinTech" showed that different reasonings are associated with the use of different criteria relating the ongoing processes to the FinTech industry. In some cases, financial services provided through financial platforms are used as criteria: payments, monetary transaction, personal finance, loans, insurance, or capital management (Blaney, 2020); other criteria are technology segmentation: API, AI, blockchain, distributed computing, etc. (Research and Markets, 2020).

For a long time, FinTech was associated only with the banking sector. Certain issues of the development of digital technologies, in particular the digitalization of banks, are given attention in the works of such scientists as Abbasov et al. (2019), Babkin et al. (2017), Maslennikov et al. (2017), Miroshnichenko et al. (2017), Skinner (2013), King

(2010), Ponamorenko (2020), Bobkov (2020), Shashkova et al. (2020), Inozemtsev (2021), Osipov (2021), and Yukhno and Osipov (2021), among others. In this context, the concept of Neobanks appeared—a digital bank that offers financial services only via the Internet and does not have physical branches (Urban Dictionary, 2014). It follows that the term "FinTech" touches on many different areas of the financial market, suggesting that all existing judgments are united by the common idea that "FinTech" is a new technology industry that helps to manage financial assets. In this regard, the author of the study agrees with the wording of the Financial Stability Board (FSB), which defines FinTech as a "technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services" (FSB, 2019).

In his research, the author will adhere to this interpretation. The COVID-19 pandemic has led to significant supply chain disruptions as a result of quarantine requirements and other restrictions such as social distance, transportation and logistics, and prioritizing technology. Recovering from the shock of such severe constraints, the digital integration of "traditional" retailers and distributors in the supply chain has shown the ability to ensure continued interactions between them. Even then, though, before the beginning of the pandemic, the Bali Fintech Agenda highlighted the significant socioeconomic potential of FinTech to provide access to financial services where it is low (IMF, 2018). During the pandemic, this was confirmed. Technology has allowed bankers and insurers to do business with previously unavailable clients in some parts of the world; for example, mobile phones have become the main device for banking operations in Africa and other developing countries, which is a kind of wireless money transfer. In 2017, according to Statista, digital payments were $2.5 trillion, in 2020 they were $4.4 trillion, and they are expected to exceed $6 trillion by 2022 (Statista, 2 April 2021). The total volume of payments of the leading mobile payment platform PayPal at the end of 2020 amounted to about $277 billion, which is 39% more than in the previous year (Statista, 11 February 2021). The growth in this sector is driving the development of the global FinTech market, affecting e-commerce, which in return, contributes to the growth of transactions.

Increasing consumer interest in receiving personalized responses in real time allows for more efficient budget management, as evidenced by the COVID-19 pandemic. The use of robo-advising, financial planning

programs and applications, social trading, algorithmic exchange trading, and targeted savings services accelerated the development of on-demand products. The use of technology in combination with alternative forms of raising capital—peer-to-peer financing/insurance (P2P) provides access to financial assets that were previously not available. According to Statista, digital financing will account for $1,000 billion by 2025 (Statista, 31 January 2015).

There is no doubt that the asset management industry is making significant progress, driven by the adoption of BigData and AI models to validate and monitor investments and risks. If earlier these tools were concentrated in the hands of certain structures and hedge funds, then as data became more accessible to organizations and investors, it simultaneously became much more effective to apply current FinTech-based models in interaction with clients. The development of digital financial services is becoming even more relevant in the face of the pandemic.

Conclusion

By demonstrating resilience in critical conditions and the ability to stabilize economic processes, the FinTech industry has become a kind of public good. During the economic storm created by COVID-19, technology has provided new opportunities in the form of digital financial services to accelerate and expand financial inclusion amid social distancing and containment measures. The involvement of robo-consultants has expanded the capabilities of the B2B, B2C, B2G, and C2C segments, influencing the implementation of digital tools and digital payment systems in the supply chain. The pandemic not only accelerated the development of FinTech, but also became an adsorbent of innovation, fundamentally changing the landscape of the financial market. Traditional business models have passed the agility test, demonstrating the need to optimize them. Given a range of factors—including digital opportunities, the impact on global supply chains, and new norms of customer engagement to effectively respond to major shocks in the future—this pandemic has demonstrated FinTech's success in challenging current sectorial thinking and considering opportunities for new or modified services across multiple sectors.

Depending on the financial services sector, the emphasis on customer satisfaction, deeper consumer knowledge through data analytics, cybersecurity, or platform building will be different. Regardless of this, though,

the consequence of the development of FinTech will be the emergence of new business models. Integration of digital and mobile FinTech with traditional companies allows the latter to become more flexible in providing their products, as well as helping both players to identify bottlenecks in relationships, building effective partnerships.

In recent years, technologies that make money handling easier have been one of the most promising areas for investment. But this, as well as the lack of an official term "FinTech", can provoke the situation of the "dotcom bubble". FinTechs are fragmented and contradictory, and the existing barriers to entry for innovative companies into the financial market—associated with the uncertainty of the requirements of regulators on the principles of their work in the area of regulatory compliance—can lead to a slowdown in the promotion of innovative opportunities for consumers.

Nevertheless, despite the likely difficulties in promoting FinTech, an analysis of emerging trends in the financial market in a pandemic has shown that in the post-COVID world they will not only not disappear, but will become a habitual way of life for consumers. The beginning of the modernization of technologies, as a way in managing the economy by providing personalized solutions to specific problems with individual pricing, as well as in increasing customer participation in renewing contacts with financial institutions, is creating new market rules for doing business. In this regard, we are entering a period of gradual changes in the international environment and new economic regimes, characterized by a widespread economy of resources: human, financial, energy. The digitalization of finance can significantly change the current functioning of the global financial system, which will create a number of opportunities to improve its efficiency. However, heightened competition may also have an impact on the stability of the financial system, due to the desire of traditional operators to maintain their profitability. FinTech is becoming the strategic foundation of a business development culture.

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CHAPTER 20

Changes in Demand in the Insurance Market in the Post-COVID Period

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Introduction

Forecasts for the indicators of insurance sales and financial results were the most pessimistic, given the market decline that began in 2019, due primarily to a decrease in interest in life insurance (Bank of the Russia, 2021). Nevertheless, Russian insurers ended the first half of the year with a positive financial result, and the results of the year make it possible to consider the state and structure of the market as quite stable.

Insurers' first reactions to the rapidly evolving pandemic were changes in the supply of personal insurance products. Risks associated with coronavirus infection appeared in the composition of boxed products (including coronavirus risks), offers for insurance against risks associated with infections, by types of health insurance, accident insurance, life insurance.

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The first responses in the spring of 2020 to the new risks associated with coronavirus were the additions of insurers to accident insurance policies, health insurance policies. Thus, the Russian insurance organization SOGAZ launched a collective insurance program in May 2020, which includes the risks of death from coronavirus (SOGAZ JSC, 2021) with a standard insured amount of 1 million rubles.

The wave of inclusion of new risks in insurance policies led to a response from the insurance supervision. The intervention of the insurance supervision was required in connection with the refusal of insurers to pay insurance payments for the COVID19 risks, which, simultaneously with the inclusion in insurance coverage in special insurance products and the accident and health insurance programs, fell under the exclusion from payments in connection with the epidemic as force majeure. The regulator interpreted such products as consumer risks associated with refusals and delayed payments and demanded to avoid mutually exclusive provisions in insurance rules and delayed payments.

Simultaneously with the protection of the rights of insurers to receive insurance services of proper quality, the All-Russian Union of Insurers (Bank of Russia, 2020), insurance supervision reacted to the pandemic and toward supporting insurance organizations: already in March 2020, the insurers' association appealed to the Chairman of the Government of the Russian Federation, the State Duma, the Ministry of Finance, the Bank of Russia with a package proposal on the possibility of facilitating document flow using digital technologies, reducing the requirements for technical inspection, and a possible postponement of tightening regulatory requirements. Basically, all the proposals were taken into account. If in the spring of 2020 there were discussions about the ethics of the formation of insurance products against coronavirus, then an increase in demand for insurance against COVID-19 by an average of 60% in the second wave in the fall transferred insurance products for citizens to the category of regular (Vedomosti, November 2020).

The secondary development of the volumes, structure and quality of the insurance market in relation to the economic situation (in most aspects, with the exception of preventive measures), the state of corporate and private policyholders allows participants and the regulator to assess the necessary changes in the offer of insurance products, to reorient the set of forms and types of insurance in accordance with the needs, effective demand, market situation of consumers. The cyclical nature of the market, the seasonality in relation to certain insurance products, the traditional

conclusion and prolongation of insurance contracts in accordance with the astronomical year gave insurers an almost one-year time margin to respond to changes in the risk situation in connection with the pandemic in relation to their consumers.

Methodology

The reasons for the changing demand for insurance products are different for corporate and private policyholders. If for citizens and corporate insurers, in order to supplement social packages, collective insurance of personnel, this is a request to include risks of disability, disability, death from coronavirus in insurance policies, then for property and liability insurance of legal entities, compulsory forms of insurance of enterprises, a change in demand in the first place can be due to a decrease in solvency, a decrease in the output of finished products, a change in relations with suppliers and contractors as a result of the worsening economic situation. Another manifestation was the massive purchases of insurance policies and the wave of insurance payments associated not only with actuarial errors, but also with cases of insurance fraud.

The availability of insurance products also has a significant impact on demand. In Russia, even before the pandemic, the insurance market was extremely heterogeneous geographically, characterized by high concentration, the absence of insurers in certain regions, the washing out of regional insurance organizations in recent years and the lack of motivation to create networks and representative offices, similar, for example, to Rosgosstrakh.

According to the Bank of Russia, the number of insurance entities at the beginning of 2020 amounted to 255 units, per 1 million adults in 2019, it was 2.19 on average in Russia (1.49 per 100 thousand sq. Km of area); at the same time, there are 177 constituent entities in the Central Federal District, and not a single one in the North Caucasian Federal District. Accordingly, the number of separate subdivisions of insurers is 2,197 in Russia, 19 subdivisions per 1 million people of the adult population and 13 per 100 thousand square km of area (Financial inclusion indicators, 2019).

In part, these negative factors were offset by the digitalization of the processes for concluding insurance contracts and claims settlement; at the same time, numerous surveys (about 160 listeners were interviewed) conducted with regional participants in educational programs, both by

insurers and by insurance supervisory authorities, indicate the importance for policyholders of the physical presence of representatives of insurance organizations in the territory of the subjects.

Compulsory forms of insurance and imputed types of insurance turned out to be affected by the pandemic, mainly in the direction of technical support under existing contracts and contracts that must be implemented by virtue of the law. To help policyholders, for example, some inspection procedures have been simplified. The withdrawal from the market of a part of small and medium-sized businesses and, as a result, the liquidation of insurance objects had a significant impact on the insurance demand for compulsory and imputed insurance; decrease in the economic activity of large economic agents.

The quality and development of the insurance market, which makes it possible to respond to new challenges and offer demanded insurance products, is largely determined by the financial condition of market participants, insurance capital and assets, along with the goal-setting of management and owners, and the regulatory framework.

The formation of new insurance products in accordance with changes in the needs of policyholders depend on the financial condition of insurance organizations, the budget that can be used to create a product. Working Change in Demand on the Insurance Market in the Post-COVID Period (Tsvetkova et al., 2019). A comparison was made of large Russian insurance companies with medium and small intermediaries (the former are much more financially stable) (Tsvetkova et al., 2019) and proved a significant advantage of the former. The factors of sustainable supply are presented in the work Methodology of assessing risks to sustainable supply chain of an insurance company (Tsvetkova et al., 2019). Comprehensive analysis of indicators of regional insurance markets involves identifying key indicators of sustainable development and taking into account regional specifics in the formation of insurance products (Tsyganov & Kirillova, 2019).

The impact of the pandemic on the development of the economy and insurance has been considered by many authors (Mesquita de Carvalho et al., 2021; Shevchuk et al., 2020). These are the economic factors of the market, the issues of changing insurance strategies, adapting consumer behavior to the conditions of a pandemic, and responding to it by economic agents.

Results

After the first inclusion of the risks associated with COVID-19, the next stage in the response of insurance organizations to the new situation was complex insurance products in countering the consequences of the coronavirus (Table 20.1).

The hypothesis of the study is the significance of new pandemic risks affecting the demand for insurance products. If this hypothesis is accepted as correct, it is necessary to determine the changes in the demand for insurance products during the 2020 pandemic, which will determine directions of development of insurance products.

It can be assumed that changes in demand during a pandemic depend on three global changes in risks, economy, effective demand of economic agents (insurers and policyholders) and the need for changes in insurance regulation. In reality, these changes are manifested in the following:

- a set of new risks associated with the impact of coronavirus on human health and life;
- a set of new risks associated with the impact of coronavirus on the economic life of enterprises, businesses, corporations, territories, countries;
- new risks of interaction between insurers and policyholders;
- the need to change the regulation of the insurance market by supervisory authorities, associations of insurers;
- decrease in the solvency of corporate and private policyholders;
- changes in the financial condition of insurers and the possibility of offering them new insurance products (Fig. 20.1).

The demand for insurance products is determined by many factors:

- risk situation (country, regional) (Kirillova, 2013a; Tsyganov, 2017);
- the state of the economy of the country, region (Kirillova 2013b);
- availability of insurance products; digitalization and positive/negative insurance experience;
- development of compulsory forms of insurance;
- availability of imputed insurance;
- the solvency of the population and enterprises;
- others.

Table 20.1 Some new insurance products of the Russian market for coronavirus risks

Insurance organization	*Ingosstrakh life*	*Renaissance insurance*	*Alphastrakhovanie*
Insurance product	Program Stop Coronavirus (Ingosstrakh, 2021)	Antivirus program (Renaissance Insurance, 2021)	Coronavirus insurance COVID-19 (Alfastrakhovanie, 2021)
Main risks/conditions	Lump-sum payment of up to 40,000 rubles in case of temporary disability (incapacity for work for a period of more than 14 days); one-time payment of up to 110,000 rubles in case of hospitalization for more than 7 days; payment of up to 2,500,000 rubles in case of death due to newly diagnosed coronavirus infection (COVID-19)	Newly diagnosed diseases: • coronavirus infection COVID-2019; malaria, anthrax, West Nile fever, tularemia, Dengue fever, Ebola fever Sick leave payments due to illness, including COVID 19—up to 60,000 rubles Payment in case of death as a result of illness up to 1,000,000 rubles	Reimbursement for infectious diseases—from 2 to 5% of the sum insured. Death due to infectious disease—100% of the sum insured
Tariff rate/insurance premium; term; age	Insurance premium 6300 rub.—11,000 p Term 3–6 months Age 3–60 years old Consulting on compulsory medical insurance	Insurance premium 3000 rub Sum insured 500,000 rubles Unlimited number of online consultations of doctors of various profiles around the world, excluding war zones Term 1 year, temporary deductible 7 days Age 3–64 years	Sum insured RUB 1,000,000 Age 7–70 Term 1 year, temporary deductible 10 days

Source Created by author on the basis of official websites of insurance companies

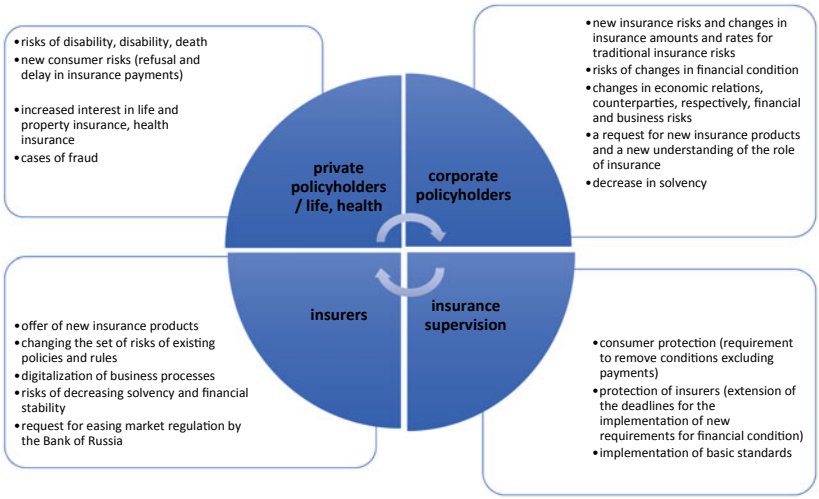

Fig. 20.1 Changes in the insurance market during a pandemic (*Source* Designed by author)

Let's consider the main factors of insurance demand. The risk situation tends to worsen: since 1970, according to the Sigma agency, damages from natural and man-made disasters have grown from $ 2–5 billion in the 70s to $ 75–100 billion in the 2010s (Osipov, 2010; Sigma, 2021). Sigma survey predicts a 3% decline in global premium collection for all types of insurance due to the pandemic (Sharma, 2020; Sigma, 2020).

Economies are struggling to recover from the shock events of 2020; all sectors, except industry and agriculture, showed a decline in 2020 (Ministry of Economic Development of the Russian Federation, 2021; Ra Expert, 2021). Overwhelming number of enterprises in the corporate sector emerge from the pandemic with over-indebtedness, according to IMF research (IMF, 2021a). The IMF's findings indicate a softening of financial conditions to support economies in 2020 during a pandemic. The fund's forecasts for GDP growth are now more optimistic: global growth of 6% in 2021 and 4.4% in 2022 (IMF, 2021b). At the same time, the way out of the crisis is expected to be extremely uneven for developed and developing countries. In Russia, the IMF predicts a 3.1% decline in GDP in 2020 and 3.3% growth in 2021 and 2022 (IMF, 2021b).

The Russian insurance market grew by 4.1% in 2020, despite the pandemic (Bank of the Russian Federation, 2021). Some decline in insurance premiums, which is the most difficult for the population and enterprises due to quarantine measures in the 2nd quarter of 2020, leveled off in the fall and in subsequent periods. In 2020, the Russian insurance sector showed the maximum return on assets among financial markets of 30%, which is largely due to an increase in the share of investment income in insurers' profits. In 2021, according to expert estimates, growth is expected from 13 to 25% (Ra Expert, 2021). The structure of a collection of insurance premiums has changed (See Table 20.2).

The increase in the share of life insurance is largely determined by preferential mortgage lending programs (Tsyganov & Yazykov, 2017), launched in Russia in 2020.

Discussions

So, the demand for insurance products has changed during the pandemic and the main factors behind its change were a total change in the quality and consequences of risks for individuals and legal entities.

With a sharp change in the risk situation, the understanding of the role of insurance on the part of the insured changed, and the support of the insurance market participants from the insurance supervisory authorities increased and became faster and more adequate. Along with the change in the risk situation, the main factors in the change in demand for insurance products are the effective demand of policyholders and the availability of insurance service providers.

An important positive result of the pandemic and quarantine measures was the sharp digitalization of the processes of concluding contracts and receiving insurance payments (Kirillova & Dorozhkin, 2019; Pukala, 2016), the expansion of the use of telemedicine (online consultations, telemedicine offices, etc.) in personal insurance.

Other areas of development of insurance products were also rethought. So insurers plan to abandon insurance of tour operators (financial guarantees are planned to be terminated from 2022)—this is not the first decision to refuse insurance in the tourism industry—the crisis in tourism in 2014 has already raised the problem of loss-making in tourism insurance for the insurance market. This raises the question of the relationship between the responsibility of insurers for their own financial results, the development of the company and personnel and compliance with social

Table 20.2 Structure of the Russian insurance market by insurance premiums[d]

Insurance type	*Insurance premium*							
	Russian Federation, billion rubles		*SOGAZ JSC mln. r. (market share, %)*		*AlfaStrakhovanie JSC mln. r. (market share, %)*		*SPAR "Ingosstrakh" mln. r. (market share, %)*	
	2020	*2019*	*2020*	*2019*	*2020*	*2019*	*2020*	*2019*
Total, trln	1.51	1.48	298,838.1 (18.7%)	194,334.5 (13.1%)	118,449.6 (7.4%)	108,352.59 (7.3%)	116,027.3 (7.3%)	103,273.5 (7.0%)
Life	430.6	409.3	75,880.53[a] (17.6)	45,617.9	84,287.52[b] (19.6)	55,494.1	5037.52 (1.17)[c]	7165.7
OSAGO	230.3	213.9	10,522.99 (4.8)	11,243.3	32,356.65 (14.7)	30,750.9	24,332.58 (11.0)	27,950.3
KASKO	157.7	106.9	11,159.9	9884.4	No data	19,868.99	29,583.3	533.7
Personal property	71.7		4024.97	1925.6	54.6	10,078.2	4242.5	3504.9
Corporate property	114	103.3	60,883	53,428.4	939.6	9948.0	16,040.6	12,894.0
Voluntary health	147.6	180.8	64,352.89 (36.3)	60,242.1	17,857.46 (10.1)	15,357.4	9619.95 (5.4)	10,891.1
Accidents and illnesses	143.3	187.4	96,381.54 (47.5)	25,940.6	7539.64 (3.7)	6072.1	4122.41 (2.0)	3219.4

[a] LLC "SOGAZ-LIFE"
[b] LLC "AlfaStrakhovanie-Life"
[c] LLC IC Ingosstrakh-Life
[d] As an example, we selected three insurance companies with the maximum sum of the insurance premiums in 2020
Source Calculated by author according to bases of Expert Ra (2019, 2020), Bank of Russia (2019, 2020)

norms, the response to the social needs of society and the need for a more or less fair distribution of the burden with the budget, citizens and economic agents.

An important response to the changing needs of policyholders was the proactive change in traditional insurance products and the formation of new insurance programs to counter the consequences of the risks of a pandemic.

Conclusions

Objective shock changes in the risk situation for economic agents of all forms, individuals and organizations in the aggregate impact had a positive impact on the supply of insurance products. New insurance products related to the risks of a pandemic were not only a response to the increased interest in insurance and understanding of its role, and an increase in insurance literacy (Belousova et al., 2019), but were and continue to be initiated by the insurance community.

The negative expectations of the insurance community did not come true and the financial results of the insurance market showed the best profitability among the financial markets. At the same time, a more prompt actuarial response to changes in the risk situation and, as a consequence, the proposal of a new and changed traditional insurance product is also necessary. Thus, the participants of the Russian insurance market justified their intended purpose, showing also an investment result that made a more significant contribution to profit than before the pandemic.

The positive response of the regulator to the request of the insurance community in postponing the strengthening of the regulatory impact on the market turned out to be justified.

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CHAPTER 21

The Modernization of a Company's Internal Control System During the Pandemic

Artem I. Krivtsov and Tatiana M. Tarasova

Introduction

During the pandemic, the global economy underwent a true durability test, resulting in some supply chains being interrupted; the Russian economy, however, demonstrated the best resilience—contrary to a number of estimates and predictions—thanks to previously developed digital economy transition programs. However, the period still saw a drop in GDP and disposable income, which may be explained through interruptions of supply chain, bankruptcies, and the forced closure of businesses that relied on direct human interaction. Governments of many

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countries provided financial support for the industries most affected by the pandemic by putting in place a complex system of state support which included preferential loans, tax holidays, or more lenient business regulations. All companies were forced to adapt their operations to new restrictions and challenges, to reprogram their data systems, to update their websites and apps, or to digitalize some of their operations. All of this requires that the current control system be especially flexible and mobile, capable of ensuring and controlling the uninterrupted work of all of the company's processes under these new circumstances.

As a process, the internal control system (ICS) has a rather wide definition scope. Usually, a company's internal control falls under the responsibilities of management or of other authorized personnel; the purpose of internal control is to collect the required information regarding the rationality and profitability of a company's business activity and to ensure that all statements and documents are in compliance with the regulations and legislation. Generally speaking, a company's internal control is designed to ensure that its financial statements are in compliance with its own criteria and regulations, as well as with those that are in force across the company's country of incorporation (legislation). In order to function efficiently and cost-effectively, the ICS needs to be regularly updated and assessed, its indicators need to be regularly compared, and calculation results must be thoroughly analyzed along with the general assessment of its work. The ICS' digital nature is an important distinction of the system which became even more relevant during the pandemic.

The ICS currently in place in JSC "Russian Railways" is also defined by the community of the objects and subjects. The objects of internal control are the business processes and the financial and commercial activities of various subdivisions; the list of subjects is determined by JSC "Russian Railways"'s corporate structure. JSC "Russian Railways" makes constant improvements to its internal control and audit systems. Not only does this constitute an innovational approach, but this also contributes to cutting costs, reducing profit losses, and raising the efficiency of the company's economic processes as a whole.

In the quest to organize and implement internal control, to analyze debt volumes, it must be determined whether the payment terms specified in the contracts meet the company's monetary needs (rational debt management). It must also be determined whether the company requires additional funds, with its financial solvency in mind.

In terms of theory and methodology, the research was founded on control, audit, and accounting legislation, along with the works of various experts, among which the following works are of note: Abu-Maiala (2017), Al-Bawab (2015), Ammar (2015), Andreeva et al. (2018), Arens et al. (2014), Ayager et al. (2014), Badawi (2011), Chen and Shi (2012), Dahdouh and Al-Qadi (2012), Kabuye et al. (2019), Hackett and Mobley (1976), Harvey (2008), Husseini and Al-Sai'ri (2017), Juma (2009), Leng and Zhang (2014), Lozon (2016), and Rija and Rubino (2018).

Methodology

Currently, JSC "Russian Railways" is actively utilizing and improving its ICS, whereby the following points must be addressed:

1. Improved organization and methodology for internal audit and control;
2. Extended usage of the process approach to management and efficient internal audit and control;
3. Internal audit standards applied in practice;
4. Automated internal audit and control systems so as to exclude all physical contact among personnel in case of new infection outbreaks;
5. An improved corporate control mechanism over financial and commercial activities of JSC "Russian Railways" subsidiaries and affiliates;
6. A fully developed anti-corruption compliance system along with implemented abuse prevention programs and procedures.

The efficiency of a coordinated ICS is fully dependent on humans and on how fine-tuned an internal control system functions within a single company. The system is based on management being open to new technology, to changes, and to corrections, as well as on management's capacity to not only follow new trends but also to take into account past mistakes as well. It must be acknowledged that the internal control is a flexible system subject to different variables that influence its development and unimpeded functioning. The system requires regular updates. Many companies have recently decided to implement their own ICS. JSC "Russian Railways" has an active ICS that, without a doubt, plays a key role in internal financial audit.

It is imperative to highlight the theoretical and methodological features of modern ICS systems, especially during the pandemic, as transportation of goods has experienced a decline; despite this, it could not have ceased completely, since railway transport fulfills an important infrastructural role regardless of there being a global pandemic. Notably enough, these systems have a direct impact on economic indicators and are not in contradiction to JSC "Russian Railways"'s development strategies. The control procedure service provider is the general service center (regional). In this area, the authors have constructed a table of control procedures with consideration for accounts receivable and accounts payable (see Table 21.1).

Thus, one may conclude that control procedures in JSC "Russian Railways" are built systemically and are designed to store rather large volumes of information. Moreover, they implement a clear sequence of actions, which is especially imperative when employees are forced to work remotely during the pandemic. Notably, the list of control procedures also contains an important element of organizing control over the accounting document flow.

The authors have constructed a model of ICS informational and analytical coverage, presented in Fig. 21.1.

The model presented in Fig. 21.1 is designed to structure the management process by transforming current large-scale processes into clear goals not only for each department, but for each employee as well. In this case, IT serves as a basis for the constant monitoring of current changes so as to increase awareness levels among accountants (or among young professionals, which is also undoubtedly of vital importance), as well as a necessary basis for internal control. This speaks volumes of IT's impact on accountants' routine activities, as well as on ICS as a whole.

"Security access control" (SAC for short) and "Statement on Auditing Standards 55/78" (SAS 55/78) were analyzed during this study. These instruments, much like the COBIT Standard, are practical and must thus be analyzed and scrutinized before their implementation. It is also reasonable to make sure that internal auditors study these instruments carefully in order to learn more about their work and in order to introduce prospects for improving the ICS currently in place at JSC "Russian Railways". Automated accounting and control may become the main tool to reduce financial and time costs allocated to control procedures. The number of identical operations, nomenclature volumes, liability and lack of qualified employees: all of these factors require significant labor costs.

Table 21.1 Control procedures with consideration for accounts receivable and accounts payable

Risk	*Name of control measure*	*Control procedure*	*Monitoring report (transaction) in IS*
1	2	3	4
Errors in commercial activity accounts	Entry of source documents on the books	Examination of: 1. Comprehensiveness of source documents: certified copy of contract with appendices, certificates of delivery, bills, etc 2. Whether source documents contain all the appropriate reference details: contractors' phone numbers, bank accounts, cost centers, input items, supply order number 3. Whether certificates of rendered services correspond to the contract (subject matter, amount, price) 4. Whether input items correspond to the structure of account No. 32 Should any inconsistencies be discovered, the documents are returned as per the register	Note made on source document indicating successful examination or note made on register of returned documents
Errors in applying tax deductions, tax authority's rejection of tax rebate, errors in calculating payable tax, tax deficiencies, accrual of penalties			Note made on invoice or on register of returned documents
Misrepresentation of commercial activities in accounting books, incorrect payment date (basis date), incorrect expenses, revenues, accounts receivable/payable which leads to misrepresentations in books on account and tax books	Examination of indicators listed by JSC "Russian Railways" in EK ASUFR (ERP systems—EK ASUFR: financial, material and technical resources management system)	Check contract's internal use number to ensure that requisites are in order Should any disparities be discovered, the documents are returned to JSC "Russian Railways" subdivision as per the register To implement special procedures for contracts unusual in terms of nature, volumes, or conclusion frequency (e.g., lease contracts, trust deeds, agency contracts etc.)	Note made on source document indicating successful examination, letter to JSC "Russian Railways" subdivision, note made on register of returned documents

(continued)

Table 21.1 (continued)

Risk	*Name of control measure*	*Control procedure*	*Monitoring report (transaction) in IS*
Incorrect posting of expenses, revenues, accounts receivable/payable leading to misrepresented settlements with contractors	Internal commercial payments	Examination of account requisites and/or contractor, receipt memos, turnover balance sheets. Examination of dishonored receipt memos. A report is drafted containing the list of all dishonored receipt memos	Note on documents indicating examination/acceptance of memo
Incorrect posting of settlements with suppliers (contractors), purchasers (employers) leading to misrepresentations	Clearing open items on the books	1. Check open items per contractors 2. Look through item's document text to determine whether paid advances correspond to accounts receivable/accounts payable 3. Examine cleared items to check whether contracts, accounting books, departments, payment dates	Correct posting of settlements with contractors on books of account
Incorrect posting of settlements with contractors, grievances brought before JSC "Russian Railways" subdivision	Reconciliation reports listed in EK ASUFR	Drafting of balance turnover sheet, comparing data from reconciliation report and data from balance turnover sheet	Reconciliation report, correct posing of settlements with contractors on books of account
Incorrect accounts receivable/payable match-marking leading to misrepresentative postings of settlements with contractors	Match-marking of accounts receivable/payable	Check whether letter to JSC "Russian Railways" subdivision was posted concerning violations discovered during last year's match-marking Control over match-marking orders, orders establishing match-marking commissions, orders including accountants into MMC Head of department to oversee that all match-marking documents are drafted in order including the match-marking report, report reference	Match-marking reports

Risk	*Name of control measure*	*Control procedure*	*Monitoring report (transaction) in IS*
Non-compliance with control deadlines for debts written off as off-balance debts	Match-marking of accounts receivable/ payable	Examine whether accounts receivable were correctly written off as off-balance accounts Ask the employer for confirmation that all means of debt collection were exhausted prior to expiration of the five-year term	Letter to employer, correct posting of settlements with contractors on books of account

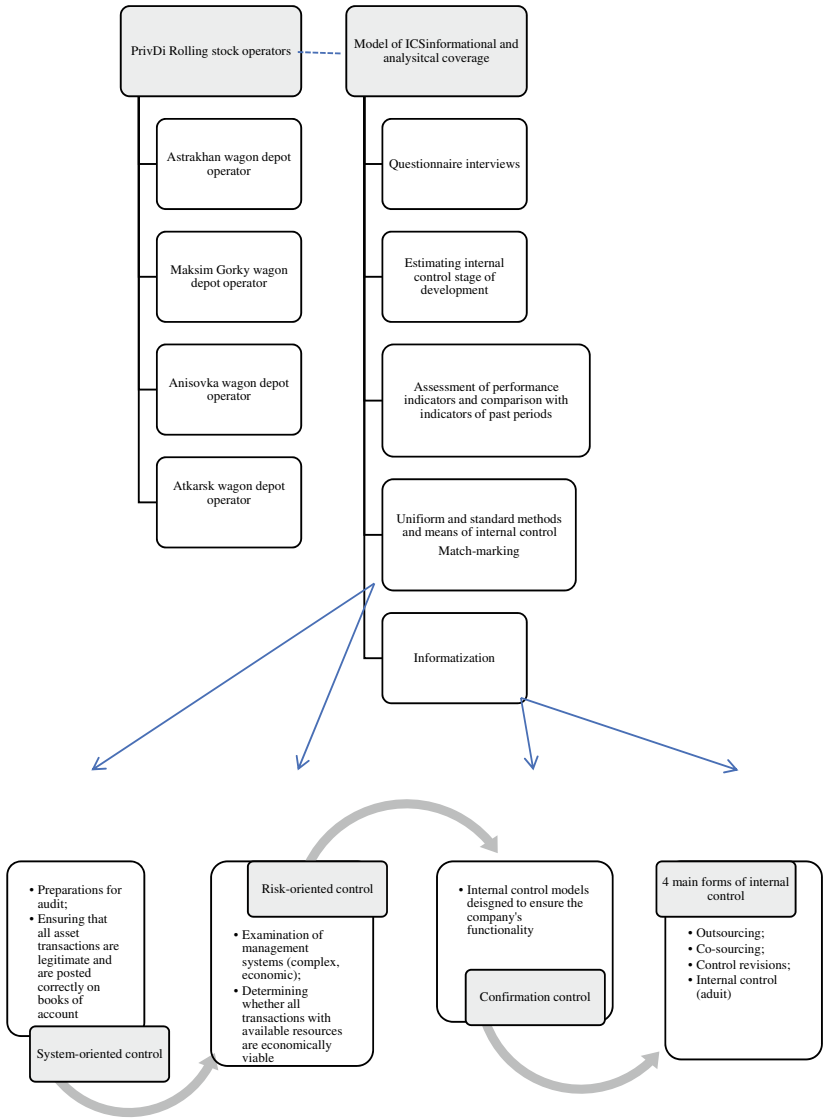

Fig. 21.1 Model of ICS informational and analytical coverage (*Source* Designed by the authors)

Saving time allows experts to dedicate more time to intellectual work and to focus on the issue that actually require "human" attention and expertise. Introduction of IT also improves digital literacy among employees of JSC "Russian Railways". Notably enough, automatization requires additional control over restricted access to software parameters and to the network as a whole.

The JSC "Russian Railways" Environmental strategy up to 2017 and with "prospects until 2030" puts environmental safety and people's health at the forefront of JSC "Russian Railways"'s goals. It is this document that binds the company to value its employees' health (as well as the people's health as a whole) above all, which is especially important during the pandemic. For this purpose, the company undertakes to improve its environmental impacts by 2025, compared to 2018: to reduce harmful emissions into the atmosphere produced by stationary sources, to decrease greenhouse gas emissions, and to reduce the usage of water resources. During the pandemic, staff were transferred to online work.

Due to the increased role of the circular economy, this study focuses on the use, storage, and recycling (disposal) of paper, as the transition to an electronic document flow means properly recycling many paper-based documents; this issue is now especially pressing for JSC "Russian Railways". In fact, the link between the circular economy and the post-COVID economic recovery may not seem that obvious at first, though there is a tangible link. Firstly, raw material extraction and the production of consumer goods therefrom expends a lot of production capacity and human labor resources, which is rather difficult to achieve during the pandemic. On the other hand, environmental pollution, coupled with the raging pandemic, may lead to an economic collapse.

We would like to emphasize that this is not about organized scrap paper disposal and not about using bad paper as a draft; this is about abandoning paper in favor of an electronic medium to the extent that is possible under current circumstances in JSC "Russian Railways". For instance, type one errors may be corrected digitally. It is informatization that will ensure additional control over inspectors' reports in the long run, which will serve to prevent type one errors and to minimize type two errors.

Additionally developed tools have been designed to supplement the existing ICS systems at the PrivDI railway service in more detail.

JSC "Russian Railways" financial regulations are outlined in the JSC "Russian Railways" accounting policy (as amended by JSC "Russian

Railways" orders of 29.12.2017 No. 132, of 29.12.2017 No. 133). The accounting policy is drafted by the JSC "Russian Railways" chief accounting officer and is subjected for approval to JSC "Russian Railways" CEO.

JSC "Russian Railways" accounting policy is the customary aggregate of accounting methods: primary observation, price changes, current grouping, and the summary of commercial activity factors.

The aim of the accounting policy is to disclose the organization and methods of accounting that have been selected for the purposes of drafting JSC "Russian Railways"'s accounting (financial) statements. The accounting (financial) statement for the financial year presented for approval at the JSC "Russian Railways" shareholder meeting is accompanied by an audit report.

According to Sec. 1.7. of the accounting policy, internal control over commercial activities, accounting, and preparation of financial statements is governed by the JSC "Russian Railways" holdings ICS statement approved by JSC "Russian Railways" decree of January 23, 2015, No. 131p.

In analyzing the methods and improvements to ICS reliability assessment in PrivDI railway service companies, one may notice that this method was implemented at the Atkarsk wagon depot. Currently this ICS live monitoring is conducted once per quarter in order to receive feedback and control the indicators.

The Anisovka operating depot is significantly behind in terms of indicators and currently has a borderline ICS quality risk assessment indicator of 13%. This is why the monitoring was conducted a second time at the Anisovka operating depot; not only digit-based results were analyzed, but also the responses themselves; the lowest-scoring indicators were identified and taken under control. Thus, so as to not increase ICS quality risk assessment at the Anisovka operating depot, this assessment method will be used more and more frequently until all ICS reliability indicators align.

In order to improve and to implement a uniform approach to drafting statements on the performance of control procedures and to consolidate internal control in the area of financial, tax accounting, and statement drafts, practical software was developed and launched back in 2017, designed to document and to consolidate the results of control procedures. Tests of the software were conducted from June 1, 2018, to June 31, 2018, on the Zheldoruchet testing site for all subdivisions and directorates. This scheme consisted of a liability matrix, with control procedure

templates for drafting control procedure checklists so as to document them digitally.

From July 1 to July 31, 2018, the second digital documenting and consolidation stage was conducted. By applying the practical software, no need arose to reproduce control procedures on a paper medium; checklists are printed and signed only if truly necessary. We consider this method the most rational ICS informatization method for JSC "Russian Railways".

Results

2018 saw the birth of JSC "Russian Railways"'s global electronic document flow project in the following areas: accounting of settlements with contractors, resources, and fixed assets accounting (JSC "Russian Railways" Directive of March 27 2018 No. 623/p "On introducing legally significant electronic document flow with contractors").

Introduction of said procedures is directed at the JSC "Russian Railways" tax monitoring system that has been in place since January 1, 2019. Legally significant electronic document flow (LSEDF) consists of transferring scanned documents into the uniform storage ES ASUD (automatic document management system). The project is designed to implement the goals outlined in the Russian Digital Economy Roadmap and to create an electronic railway as part thereof. Its aim is to convert documents into an electronic form which accompany the execution of contracts for purchase of goods or services by JSC "Russian Railways" subdivisions and by their partner-contractors. EDF greatly increases the speed and transparency of the document flow, which allows it to reduce the expenses required for paper mediums and to cut delivery costs. The key element of EDF is the electronic document signed by electronic signature. Legally significant documents, including books on account, are by statute required to be signed by "enhanced encrypted electronic signature" which may only be approved by an EDF operator accredited with the Federal revenue service.

In order to fill out LSEDF, one needs access to letters from contractors and their consent. Afterward a transition schedule is created, and amending agreements are drafted. If a contractor utilizes the services of another operator, roaming communication would have to be adopted. Technical difficulties also arise in software transactions. JSC "Russian Railways" uses the uniform automated financial resources management

system, which is easily accessed by the EDF operator system. JSC "Russian Railways" subsidiaries also use this program. The majority of contractors, however, use other systems. Time is often needed to resolve software compatibility issues and to improve communication between contractors' and the EDF operator's software.

The authors' outline of electronic document flow with contractors is presented in Fig. 21.2.

Introducing EDF does not merely signify a change in technology; a new production culture is in fact emerging. It is necessary to learn to work with certain values and principles in mind that are not premised on the usual stamps and signatures and that exclude personal interaction so as to instantly locate the required document and to identify its status.

The implementation, improvement, and maintenance of an EDF system is designed to fulfill the following tasks:

- The creation of a single database;
- Accelerated document approval;
- Control over contract validity periods;

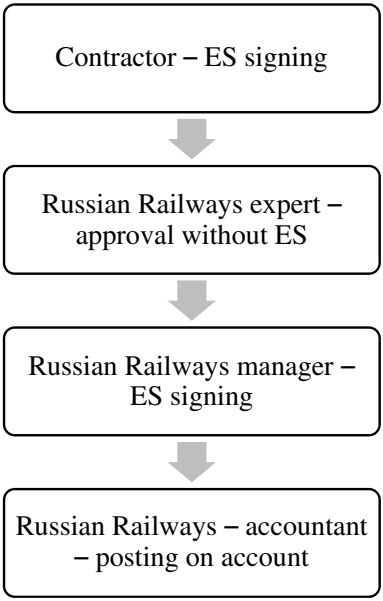

Fig. 21.2 Order of document flow with contractors (*Source* Created by the authors)

– Accelerated process of filing statements with the authorities;
– Transition from hard copies.

The analysis of control procedures showcased that all forms of control procedures are expansive and are not fit for daily entries. For the purposes of accounting routine, JSC "Russian Railways" accountants use SAP R/3, a software which is reasonable for control procedure reports.

We suggest that the work be divided into two stages:

At the first stage, an accountant may print the improved control procedure form from the program in order to check all entries, ongoing tasks, and performance.

The second stage would be the inspection of all source documents in conjunction with the entries. At the end of the inspection, the accountant signs the form.

Thus, we will be making further progress toward automatic accounting and a complete transition to electronic document flow. We analyzed the fax message "Mistakes made by accountants in filling in control procedure checklists in March 2019" which contained an analysis of control procedure checklists filled in by accountants. The main concerns relate to accountants not exercising due diligence when checking for violations from past periods, which led to bloated receivables (in accordance with full salary payouts due for the first half of the month as per the working timetable). Also, it is possible to undertake these tasks incorrectly: for example, when inspecting 5 three-page source documents, a total of 15 control procedures may be indicated (i.e., per number of pages) which is not how this process ought to be conducted and would not be correct; another error was the employer receiving a letter with detailed descriptions of the reasons identified in 2018 for not fixing errors, violations, and discrepancies, and that the debt was not to be held due to lack of personal claims for receivable salary payments, although no further attempts to correct the mistake were made for the remainder of the period. There are also those mistakes that relate to determining the nature of the mistake itself and the reasons for its occurrence; for example, if an "incorrect source document form" mistake was identified, the issue may be solved by returning the documents to the employer per the register, with the "reason" bracket being filled as follows: "4.4: incorrect, erroneous actions, accountant's negligence" (2 mistakes).

In addition, there are also those typical errors identified in separate rows which may lead to misrepresentations of the actual number of

mistakes entered into the "Violations list"; e.g., upon analyzing hard copy source documents, the accountant may identify the "source document incorrectly formatted by the competent experts in serviced subdivisions" error per single register of accepting document package, with the addition of 32 travel forms as a measure taken to fix identified errors; 26 FRU-12 forms were forwarded to the employer per single register. That being said, the "number of control procedures" bracket in the checklist contains 32 positions, whereas the "number of incorrectly conducted control procedures" lists 26; therefore the "number of errors" bracket also lists 26, which led to a 26-fold increase in the number of errors.

EDF is currently in use with contracted counterparties; however, there may also be "one-off" contractors whereby JSC "Russian Railways" does not employ the EDF system. Thus, as of today, work is done both with EDF and without EDF. EDF should be the goal so as to minimize tax risks and tax liability.

The high standards of ICS and audit are currently the goal in Russia. International practices show that the general trend in ICS and audit development is the introduction of innovations and new revision methods. The word "innovations" already invokes images of the future in which the large part of complex and monotonous work is performed by an automated system. Most ideas, however, are still yet to be implemented, whereas the impact of previously introduced changes is only now taking effect. For example, we have only recently become able to assess the effects, advantages, and disadvantages of including a "key audit points" paragraph into audit reports.

The key point of an examination is to justify the increased transparency of audit for the authorities and for investors. The Association of Chartered Certified Accountant (ACCA, a global expert organization uniting financial, management, accounting, and audit exerts from all around the world) has recently published a study on introducing the new standard in nine countries. The study was based on 560 individual audit and ICS reports. A similar accounting quality assessment received support in a number of other countries.

As stated above, the key audit points are designed to provide the company management and investors with useful information on commercial activity and on the state of financial affairs in the company. In the report published by the ACCA, however, additional points were discovered that serve to make key audit points a truly innovational concept.

First of all, disclosure of information as per key audit points allows the focus to be on particular discussion topics between auditors and economic entities. This, in turn, provides a fresh take on corporate governance.

The second point is the auditor's time resources. Due to the increased focus on the contents of an audit report, auditors are to direct their attention to those parts of the examination that are deemed to contain the most risk. There is a certain time management advantage: reduced work time in low-risk areas so as to focus on key aspects of the audit.

Conclusions

In constructing a single large electronic database, it may be necessary to divide it into several elements:

1. Software for functional models such as activity planning and resource management, monitoring and performance of examinations, checking for violations, drafting of statements, and activity analysis;
2. Software for the "Administration" module: most of all, this means organizing data security, timely posting of data and changes to the legislation and other changes to the ICS system, authorization, and journalizing the process;
3. Storage of books;
4. The communication and notification element.

As such, the study proposes a number of improvements to the ICS currently in place so as to increase performance efficiency at the PrivDI wagon service, while at the same time reducing the level of employees' personal involvement in the operations; this, in turn, becomes a sort of insurance against a potential next-generation pandemic. These measures help to conserve the available resources as well as to speed up and improve the ICS. The introduction of ICS is not just a change of technology; a whole new production culture is emerging. It is necessary to learn how to work in value orientations that do not imply the usual signatures and seals, according to principles that exclude personal interaction, allowing users to instantly find the desired document and determine its status.

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CHAPTER 22

Legal Regulation of Crypto-Asset Markets in the EU in the Post-COVID Period

Maxim I. Inozemtsev

Introduction

An increasing number of European states are entering the competition in the digital technology market adapting their legislation to new digital entities or creating fundamentally new regulation. This competition took place against the backdrop of the coronavirus pandemic. It was during the period of the greatest activity of COVID-19 that the state authorities took several steps to intensify developing and implementing new legislation aimed at digitalizing the financial market. The pandemic, which harmed the global economy, forced financial market participants to look for alternative investment channels, including crypto-assets. The pandemic has also affected the payment sector, which gave a boost to the projects aimed at creating central bank digital currencies (CBDC) (Bank of Russia, 2020; ECB, 2020; The Digital Dollar Foundation, 2020).

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At the same time, non-EU states are traditionally leading in the pace of legalizing crypto-business (Switzerland, Liechtenstein, Great Britain). At the same time, the European Union has made a qualitative leap in creating a single legal field for the circulation of crypto-assets over the past three years. There have been the following stages:

1. March 2018—The European Commission approved the FinTech *Action Plan* (European Commission, 2018);
2. January 2020—ESMA and EVA have published *Reports* with Recommendations for the European Commission regarding Potential Regulation of the Crypto-Asset Market (EBA, 2019; ESMA, 2019);
3. September 2020—The European Commission, after extensive public consultation and clarification, adopted the *Digital Finance Package* (European Commission, 2020a).

In this regard, the issues of competition between the EU legal order and European states outside the EU (Switzerland, Liechtenstein, Great Britain), as well as integrating advanced regulation of the crypto market of some EU countries (Malta, Germany) into the created unified legal field for the crypto-assets to circulate in the EU, are of research interest.

Methodology

This study examines the evolution of legal regulation in the field of crypto-assets circulation by studying the European experience in resolving problematic aspects, both within the European Union and in the competing European jurisdictions (Switzerland, Liechtenstein). The author reviewed the legislation of these jurisdictions as a whole and analyzed individual provisions, as well as compared legislative approaches in different legal systems to come to conclusions about the possibility and ways to create a basis for borrowing European experience for developing the Russian civil doctrine and civil legislation. An important feature of developing new financial legislation that contributes to digitalizing this market is that it was developed during the pandemic, and entered into force in the post-COVID period of new norms.

Results

Let us trace the evolution of the European Union's initiatives in the field of legal regulation of the crypto-assets circulation. The *Fintech Action Plan* of the European Commission points out the following problems: new financial services do not always fully fall within the existing EU regulatory framework; existing national regulations in EU countries are incompatible with each other. In this regard, the main task is to assess the applicability of the current EU regulatory framework concerning ICOs and, more broadly, the turnover of crypto-assets. At the same time, the Commission advocates a reasonable balance between measures to minimize the risks posed by crypto-assets and to use their high potential for developing the EU economy. This is especially true for blockchain technology.

Published in January 2019, ESMA and EBA indicated the following: we need technology-neutral regulation of crypto-assets; most of the crypto-assets are not regulated by the current EU legislation on financial services or there are gaps and shortcomings there; different EU countries classify crypto-assets as financial instruments in different ways, which creates problems for controlling and regulating this sector; a pan-European approach to regulating crypto-assets is preferred in the long term.

As a result, the Digital Finance Package adopted by the European Commission on September 24, 2020, included:

- a new Digital Finance Strategy for the EU financial sector;
- an updated Strategy for Secure Retail Payments;
- legislative proposals on the pilot mode of applying market infrastructures based on distributed registry technology;
- legislative proposals on digital operational sustainability;
- legislative proposals to clarify or amend certain EU financial services regulations;
- legislative proposals to regulate crypto-asset markets (MiCA Regulation).

The Digital Finance Strategy states that digital finance has helped individuals and businesses to cope with the unprecedented situation which emerged during the COVID-19 pandemic. For example, remote identification enabled consumers to open bank accounts and use other financial

services remotely, the share of contactless payments in stores increased, and FinTech solutions helped to expand and accelerate access to credit activities (including the loans provided by states in response to the pandemic crisis). The Strategy emphasizes that Europe should fully use this experience when implementing its strategy for recovery from the pandemic, which will also contribute to the overall EU economy's digital transformation (European Commission, 2021).

The *MiCA Regulations* (abbr. markets in crypto-assets) (European Commission, 2020b) is one of the documents designed to implement the priorities specified in the Digital Finance Strategy.

By establishing common rules for the crypto-assets circulation in the EU, the Regulation claims to replace the existing national rules. The regulation applies to the crypto-assets that are not covered by the current EU legislation on financial services and electronic money, as well as to the issuers of crypto-assets and crypto-asset service providers (CASP).

The MiCA Regulation introduces 28 definitions related to crypto-assets, among which the most important are the definitions of "crypto-assets" and their three varieties.

By "crypto-assets", the Regulation means "a digital representation of the value or rights that can be transferred and stored electronically, using distributed ledger technology or similar technology".

The draft Regulation identifies the following *types of tokens*:

1. A utility token is a type of crypto-asset that is designed to provide digital access to a product or service through distributed ledger technology and is accepted only by the issuer of this token.
2. An asset-referenced token (ART) is a type of crypto asset that is designed to maintain a stable value by being linked to the value of several fiat currencies, one or more commodities, one or more crypto-assets, or a combination of such assets.
3. An electronic money token (EMT) is a type of crypto-asset which is mainly used as a medium of exchange. These tokens maintain a stable value, being tied to the value of the fiat currency.

It is important to note that the "investment-type tokens" highlighted in the ESMA and EBA reports (as an analog of security tokens) are not covered by the Regulation, but are introduced into the perimeter of the MiFIDII regulation. The proposed amendment to Article 4 (1),

paragraph 15, of Directive 2014/65/EU is as follows: a "financial instrument" means the instrument specified in section C of Annex I, *including the ones issued using the distributed ledger technology*.

An important aspect, according to the Regulation, will be whether the EBA qualifies a regulated stablecoin as "significant", based on the specific requirements specified in the Regulation. Besides, the MiCA Regulation offers an "individual" structure for regulating "significant" stablecoin issuers by imposing stricter requirements on them.

The Regulation introduces a new category of intermediaries in the financial market—*crypto-assets service providers* (CASP), which means any person whose occupation or activity is to provide one or more services related to crypto-assets to third parties on a professional basis.

The issuer of crypto-assets (except for the stablecoins regulated by the MiCA Regulation) can make a public offer of crypto-assets in the EU or apply for admitting such crypto-assets to trading on a specialized platform only if it:

- is established as a legal entity;
- has prepared a draft crypto-asset white paper;
- has notified the national competent authority about this document;
- complies with other requirements set out in the Regulations.

It is obvious that the creation of a single regulatory framework for regulating crypto-assets in the EU was catalyzed not only by Malta but primarily by Germany, which decided not to wait for a "pan-European response" to regulate the crypto market but create its legislation.

Thus, the German Government released a blockchain strategy (Federal Ministry for Economic Affairs & Energy, 2019) that demonstrated the country's commitment to supporting digital technologies even before the COVID-19 pandemic, on September 18, 2019. The Strategy stated that increasing knowledge in the field of blockchain technology could contribute to the digital sovereignty of Germany and Europe. At the same time, it was noted that only a single European digital market would allow Germany to realize its ambitious plans to be the world's leading digital economy. Thus, Europe was preparing for introducing blockchain technology and digital sovereignty even before the pandemic.

Electronic securities (Elektronische Wertpapiere) created in the blockchain are considered as one of the priorities of digitalizing the

German market. As a first step, the legal framework for *electronic bonds* (elektronische Schuldverschreibungen) should be formed.

As a follow-up to these provisions, the German Ministry of Finance and the German Ministry of Justice and Consumer Protection have published a document for consultation entitled "Key issues of the document on regulating the circulation of electronic securities and crypto-tokens. Allowing digital innovation, ensuring investor protection" (Federal Ministry of Finance, 2019). The document aims to regulate assets that are not covered by the concept of "financial instrument", formulated in MiFID II.

The document outlines a conceptual fork in expanding the current legislation on electronic securities or creating a new regulatory regime, namely:

1. Recognize the ownership of electronic securities by applying a legal fiction, implying that all the conditions for the *property rights* protection are applied automatically, especially in the event of bankruptcy.
2. Follow the example of the Swiss law on undocumented securities *(Bucheffektengesetz)* and recognize the new *sui generis right* for electronic securities.

German lawmakers choose the first option, and the legal regulation of electronic securities was brought under the Federal Debt Management Act.

As required by this federal law, electronic securities will be created through an entry in the *Register*. The Register will guarantee the authenticity and integrity of electronic securities and everyone will be granted free access to it via the Internet. The Register will be maintained by a (central) government agency or an agency that is supervised by the Government.

At the same time, they say that keeping the securities register on the blockchain raises questions if it is compatible with European legislation. Depending on whether a open or private blockchain is used, there are doubts as to whether the transactions performed can be classified as carried out through a central securities depository, as required by the European regulation on central securities depositories.

Despite the fact that 2020 was spent in lockdown mode, these provisions were embodied in the *Draft Law on Electronic Securities* (Entwurf eines Gesetzes zur Einführung von elektronischen Wertpapieren) (Bundesministerium der Justiz und für Verbraucherschutz, 2020), approved by the German Cabinet on December 16, 2020. The bill provides not only for issuing electronic bonds on the blockchain but also for electronic shares of investment funds.

At the same time, the Bundestag (where the bill was submitted) deputies' attention was caught not only by the shortcomings of the document itself but also the problems of its compatibility with the draft MiCA Regulations.

As the main drawback of the bill, the deputies call the fact that it does not provide for introducing electronic shares and thus significantly reduces the possibility of digitizing securities trading. The German Bundestag also calls on the Federal Government to submit to the Bundestag a revised bill that: will include all types of securities; will focus on the proportionality of regulatory requirements, taking into account the role of small startups in digitalizing the financial market; will not go beyond the MiCA Regulations when it comes to the requirements for admitting the participants to the market, but will allow Germany to continue to claim the role of an attractive jurisdiction for developing the blockchain technology (Deutscher Bundestag, 2021). Thus, the lockdown and the decline in business activity in the financial markets did not prevent the authorities from moving toward digitalizing the financial market. We suppose that it rather intensified this movement.

At the same time, Switzerland (Inozemtsev, 2020) is not going to give up its position as the leading crypto jurisdiction in Europe, which has had a fairly developed regulation in the field of ICO and blockchain (Federal Council, 2018, 2019; FINMA, 2018, 2019a, 2019b) since 2018. Following Liechtenstein (Landesverwaltung furstentum Leichtenstein, 2019) and Malta (LegIżlazzjoni Malt, 2018a, 2018b, 2018c), which regulate the crypto market at the legislative level, Switzerland adopted the *Federal Law on the Adaptation of Federal Legislation to the Development of Distributed Electronic Register* technology (Bundesgesetz zur Anpassung des Bundesrechts an Entwicklungen der Technik verteilter elektronischer Register) on September 25, 2020 (Vorlage der Redaktionskommission für die Schlussabstimmung, 2020). Certain provisions of the Law, which is also called the "Law on Blockchain", entered into force on February 1, 2021. Let us pay attention to the fact that it is during the

pandemic that these regulatory documents, which entered into force in the post-epidemic period, were created.

According to Article 1 of the Law, shares can act as immobilized securities, the rights to which are recognized as real (Wertrechte) or as mediated securities accounted for by an account entry (Bucheffekten).

As already mentioned, the Swiss Law "On Financial Instruments accounted for by an Account Entry" of October 3, 2008, (Bucheffektengesetz) (Bundesversammlung der Schweizerischen Eidgenossenschaft, 2021) describes the substance of mediated securities as property value sui generis.

The Blockchain Law introduces non-documentary securities based on DLT (DLT-Effekten) and creates a new type of license for DLT-based trading platforms (DLT-Handelssysteme). The Law introduces relevant amendments to the laws on bankruptcy, private international law, financial services, financial market infrastructures, AML/CFT, etc.

Discussions

The COVID-19 pandemic was one of the factors that catalyzed the development of laws to regulate the crypto-asset market. One of the important aspects of the problem is the EU's ambitious plan to create a single legal field for the circulation of crypto-assets, which has already provoked a conflict with the developed national legal order.

For example, the draft MiCA Regulation is already being criticized in European countries, especially in Germany. In particular, the following shortcomings of the Regulation are noted:

1. According to the Regulation's requirements, many blockchain applications will be classified as "financial instruments", although they, in fact, have nothing to do with financial services, which can make the blockchain unprofitable for the real economy.
2. The Regulation charges business with considerable costs to enter the market; since most fintech companies are small start-ups, they can encounter the insurmountable walls of red tape (Deutscher Bundestag, 2021).
3. The concept of "service tokens" explicitly covers non-financial asset types, such as DLT-based mobility vouchers. Currently, vouchers such as flying miles or eBay vouchers are not subject to EU financial regulation. Therefore, to ensure a technology-neutral policy

approach, they should also not fall within the scope of the MiCA Regulation just because they are based on DLT.

4. The regulation is not synchronized with the development of decentralized finance (DeFi) and the issuance of decentralized tokens. The release of crypto-assets in the EU requires, among other things, publishing a white paper, notifying the supervisory authority and creating a legal entity in the EU. DeFi token projects, such as Uniswap, Compound, or Maker, clearly cannot meet these standards.
5. The MiCA regulation creates almost insurmountable problems for stablecoins. For example, the issuers of electronic money tokens (EMT) have to be authorized as credit or electronic money institutions. Besides, most of the stablecoins on the market (Tether, USDC, Dai, etc.) currently fall under the category of "significant", which means, according to the Regulations, the need to meet higher requirements for their funds (Hansen, 2021).

Conclusions

The European Commission emphasizes that the Digital Finance Package supports the EU's desire for a post-COVID economic recovery through its digital transformation. Digital finance should fuel European innovation, create opportunities for developing better financial products for consumers, as well as open up new channels for financing EU enterprises, including small and medium-sized enterprises.

At the same time, the European Union tends to formulate a "unitary response" regarding the legal framework for regulating crypto-assets, primarily to avoid regulatory arbitration and protect the investors' rights. Such a response will only partially focus on the fundamentally new regulation leaving room for adapting the current legal framework to the new asset class.

We have the right to expect close communication between the EU institutions and national regulators during 2021 to finalize the Regulation and bringing it into line with the interests of developed crypto-jurisdictions within the EU. Besides, the European legislators should keep in mind the regulatory initiatives of the US crypto market (Inozemtsev, 2021).

The European experience, as well as the leading national jurisdictions in Europe in the field of regulating crypto-assets, can serve as

an important theoretical and empirical basis for changing the model of crypto-assets legal regulation in Russia and the EAEU, and the civil approaches of Germany and Switzerland to introducing crypto-assets into civil circulation should be given a critical insight within the framework of the domestic civil doctrine.

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CHAPTER 23

System of Legal Means of Ensuring the Financial Security of the Russian Federation at Post-COVID Period

Elena N. Kondrat

Introduction

Security in the general sense is understood as the state of protection of various objects from external and internal threats. In this case, security arises as a result of the activities of the subjects providing it. With regard to this study, financial security should be defined as the security of the financial system from various destructive influences.

In this regard, it is highly relevant to study financial security as a legal category, since the achievement of such security is possible only with the help of appropriate legal means that form its basis and, as a result, ensure the stability of other state and social mechanisms (Bogoviz et al., 2020a, 2020b). Such a study is of particular importance in the modern conditions of the fight against coronavirus, as well as in the post-COVID period of the functioning of the state and development of society.

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Financial security as a legal category implies that it is required to establish its certain relationship with the law as a set of regulations governing certain relations. Issues related to legal means of ensuring security, including those that should operate in the post-COVID period, are inextricably linked to issues of a more general plan, since financial security is, although one of the most important, but still part of economic security. In turn, economic security forms the basis of the stability of the state and society, ensures the well-being of all citizens. This is of particular relevance in modern conditions, since the financial systems of different states not only interact with each other, but also influence each other in a certain way, and not always in a positive way. Thus, the importance of ensuring financial security today is due to the extreme importance of finance for the economic development of the state. Based on this, we conducted a study of the concept of legal means of ensuring financial security as a system of legal regulations with their characteristic properties. Thus, the external and internal boundaries of the prescriptions have been determined, the statuses of the subjects they concern have been investigated, as well as the ways of the impact of legal means on the relations arising in the financial sphere in order to ensure their stability.

In order to characterize the system of legal means of ensuring financial security, it is required to establish the true meaning of the category of ensuring financial security, the content of which is made up of a combination of a number of elements. At the same time, the peculiarity of financial security as an object of legal regulation lies in the peculiarity of the absence of a single normatively defined structure that makes up its content.

Methodology

The main aspects related to the development of the author's concept of legal means of financial security of the Russian Federation, as well as the establishment of a system of these funds, were considered using a number of methods. These include such as the general scientific system method, logical methods—analysis and synthesis. The use of the systemic method made it possible to consider legal means as a single complex phenomenon, as well as to identify their features in relation to financial security.

The problems of digitalization of the economy and law have been widely considered by scientists: Gutbrod (2020), Inozemtsev (2021),

Sidorenko and von Arx (2020), Osipov (2020, 2021a, 2021b), Shashkova et al. (2020).

Such private scientific methods as historical-legal and formal-legal, provided an opportunity to trace the development of legal means of ensuring the financial security of the Russian Federation, as well as to work out the optimal combination of these means within their common system. As a result of an integrated approach, the conclusion was substantiated that it is necessary to develop a regulatory and legal framework for ensuring financial security, including the norms that are included in regulatory legal acts of various levels. The prospects for the modernization of norms in the post-COVID period of the functioning of the state and the development of society are outlined.

Results

In the generally accepted sense of the word, a means is defined as a technique, a method of action to achieve something. With regard to the problems under study, a legal remedy should be assessed as a set of legally significant actions that are carried out by the relevant subjects within the law and ensure the achievement of socially significant goals (Puginsky, 1984).

In this regard, we can highlight the most characteristic features inherent in the phenomenon of "legal means":

1. such means revolve around the legal matter, as a result of which they are intended solely for solving legal problems;
2. there is a specific circle of subjects who are authorized or authorized to use legal means in their activities, thereby implementing them;
3. depending on the specific goals and objectives, it is possible to use only those legal means that are intended for their solution, as a result of which they are directly determined by legal regulation;
4. legal means, as a rule, involves the use of measures of state coercion, which indicates their imperious nature;
5. the use of legal means entails legal consequences that make it possible to judge their positivity and effectiveness in terms of optimizing legal regulation.

The foregoing makes it possible to define legal means as specific tools, techniques and ways through which the subject of law, using the principle of legality, streamlines certain social relations and thereby achieves the goals of legal regulation.

Undoubtedly, an important issue is also the definition in general of the legal nature and its functions in the course of ensuring financial security. It is important to note that it was during the pandemic that fraudsters specializing in cybercrimes in the financial sector became more active, therefore the urgency of solving financial security problems has sharply increased for all countries of the world. It seems that legal means allow: (1) to highlight which of them are legal and which are not; (2) to study the mechanism of legal regulation from a different point of view, in particular to study the set of legal instruments that regulate public relations; (3) analyze and summarize a certain range of acts in order to propose effective ways of their regulation. In this regard, based on the subject of the study, it is necessary to determine the role of legal means in the course of ensuring financial security from the point of view of methodology. Obviously, this issue is complex due to the versatility of the concept of legal means. As a rule, the term "legal means" is most often used from the perspective of ensuring national security, where financial security is an integral component (Alimov, 2017; Fedotova, 2015; Filippova, 2011; Sattarova, 2017; Shemonaeva, 2015).

At the same time, in theory and law enforcement practice, there are many problems associated with the use of legal means in the course of ensuring financial security. As noted by some scholars, this is due to the lack of a unified approach to understanding this essential legal element, as a result of which it is impossible to fully optimize the mechanism of legal regulation (Malko, 1999). In the course of ensuring financial security, the entire complex of means should be used, and not only the financial and legal means themselves. This should include both administrative and legal means, and criminal law means, as well as a number of other sectoral means. This is determined by the fact that only the entire arsenal of legal means will reliably ensure financial security. In the legal literature on this matter, it is said that organizational and legal means help to create management and functioning systems in the field of financial security, and actually financial ones solve the issue of covering the costs associated with the activities of the relevant state bodies, technical means serve to equip such bodies with the necessary infrastructure, for example for the implementation of useful and effective information exchange. Unlike all

designated means, legal means have a special purpose, since they have the necessary regulatory impact on those persons whose proper behavior is associated with a safe state of the financial sector (Kucherov et al., 2020).

It should be noted that legal means while ensuring financial security allow achieving socially significant results of regulation of financial, economic, state-political and some other relations (Povetkina, 2018). Through the use of legal means, it seems possible to implement various functions of law (for example, regulatory, protective, educational, etc.), as well as achieve goals, objectives, establish legal liability measures and identify various risks and threats that may negatively affect the overall financial security system. It is obvious that the efficiency and productivity of activities related to ensuring financial security depends entirely on the correct chosen legal means or their combination, and this will also reduce the occurrence of adverse consequences. At the same time, financial legal means (for example, financial control) play a preventive role, since they hinder the development of various threats and challenges to financial security.

This statement allows us to conclude that legal means are inherent in both general social functions, which include economic, political, cultural, educational, and specialized functions: regulatory and protective. In our opinion, the specificity of the post-COVID period of the functioning of the state and the development of society will be the use of such legal means, taking into account the transition to digital technologies, as well as the creation of legal norms operating in a changed socio-economic environment.

In the scientific literature, the mechanism for ensuring financial security is defined as a system of regulatory and legal means, as well as the presence of institutional structures that ensure their implementation, which prevents threats to financial security and reduces their impact (Shishko, 2006). Therefore, it can be assumed that the security mechanism, i.e. ensuring the state of security of financial flows is carried out on the basis of:

1. the legal framework for regulating relations related to ensuring financial security;
2. the terms of reference of officials of public authorities who are obliged to ensure law and order in the field of public finance;
3. activities carried out by authorized entities aimed at protecting (protecting) the financial interests of the state.

By the system of means of ensuring financial security, we mean a set of legal norms that determine financial and legal regulation, the creation of conditions and the powers of security entities in the field of public finance. Legal support of financial security includes a set of certain means and methods aimed at protecting the financial interests of the state. In the course of ensuring financial security, the entire complex of means should be used, and not only the financial and legal means themselves. This should include both administrative and legal means, and criminal law means, as well as a number of other sectoral means. This is determined by the fact that only the entire arsenal of legal means will reliably ensure financial security.

At the same time, it should be pointed out that ensuring financial security is achieved by observing financial discipline by all participants, one way or another related to the movement of financial flows, the functioning of the financial system (Sattarova, 2009). Most financial lawyers view strict adherence to financial discipline as a manifestation of the principle of legitimacy in public finance (Rovinsky, 1960). However, one can hardly agree with the statement that only the implementation of the protective function of financial law is associated with the action of the named principle. This principle is inherent in law in general. However, the legality is ensured in the field of public finance, the movement of financial flows mainly with the help of protective equipment. The protective function of financial law is a manifestation of its ability to protect the most important interests of society as a whole and its individual members, due to its social purpose and the direction of legal impact on public relations in the field of public finance, as well as displace phenomena that are alien to the corresponding financial system. Consequently, the result of the protective function of financial law is such a state of public finances, which is characterized by accurate and timely fulfillment by the participants of financial legal relations of their duties.

As it is known, the main purpose of using financial legal means is to strengthen the rule of law. Legality is one of the key legal categories. Meanwhile, its definition causes serious controversy among scientists. Some authors interpret the concept of legality too broadly, including not only the requirements for observance, strict implementation and correct application of laws and by-laws adopted in accordance with them, but also the legislative activity of the state itself, as well as laws (Tagiev, 2001). Indeed, legality is directly related to laws and legislative activity. The laws and by-laws adopted in accordance with them together form the basis of

legality, but they are not identical to it and are not its elements. In the field of public finance, in the mechanism of functioning of the financial system and financial flows, the requirements of legality are as follows:

1. strict observance of the Constitution or Basic Law, and other legal acts adopted on its basis by all state and local authorities, without exception, their officials, citizens and organizations that are subjects of public finance;
2. the execution of financial acts only by authorized bodies and persons within the limits of the competence of each of them strictly outlined by financial legislation;
3. execution of financial acts in strictly defined forms provided for by the legislation;
4. development of a strict hierarchy of normative legal acts governing financial relations, assuming the supremacy of laws among them;
5. ensuring the hierarchy of normative legal acts, which does not allow the contradiction of lower-level acts with higher-level ones;
6. adoption of legal acts in accordance with the requirements of the law-making procedure and the rules of legislative technique, taking into account economic laws and requirements of financial expediency in the development and adoption of legal acts;
7. timely adoption, amendment and repeal of laws regulating public relations in the field of public finance, as well as financial acts by competent authorities and persons in the manner prescribed by law;
8. ensuring the stability of laws governing public relations in the field of public finance, as well as financial acts;
9. accurate and uniform application of laws governing public relations in the field of public finance, as well as financial acts in full accordance with their meaning and compliance with the organizational forms established by law;
10. execution of laws governing public relations in the field of public finance, as well as financial acts to the extent and meaning that are provided for in them;
11. ensuring the implementation of laws governing public relations in the field of public finance, the movement of financial flows, as well as financial acts by all necessary material, legal and ideological means;

12. implementation of constant control over the execution, observance and application of laws regulating public relations in the field of public finance, as well as financial acts by state bodies, local self-government bodies, their officials, citizens and organizations.

The listed requirements constitute the main link in the system of legal support for financial security and are in direct interconnection, complement and condition each other, acting as a single set of means to ensure the correct observance, implementation and application of laws and laws adopted on their basis and in pursuance of other legal acts (Kerimov, 2000). Legality in modern conditions for the implementation of financial security of the state and municipalities as an independent, complex socio-legal phenomenon is a specific historical state of legality, supported in the field of public finance, both in the legislative material itself and in the process of its implementation. In understanding the system of legal support for financial security, the key point in the concept of legality in general and in relation to public finance in particular is the category of legality. This category can be considered as the consistency of subjective rights reflected and enshrined in the current financial legislation, with the very rules and principles for the implementation of public finance. Legality covers, of course, the scope of the current legislation; here it reflects the consistency between the financial legislation itself and the legal nature of public finance, as well as the orderliness in the very system of legislation.

The importance of the rule of law in the field of public finance increases during the period of economic transformation. Legality is organically linked with legislative activity and legislation, as well as with the rule of law, the form of implementation of which in the field of public finance is financial discipline. In order to determine the financial legal means of ensuring financial security, it is necessary to indicate that the financial rule of law is the result of the operation of financial law. It is the achievement of the rule of law that will allow the law from an abstract rule of behavior to turn into a real regulator of the movement of financial flows. The rule of law is an objectively and subjectively conditioned state of public life, which is characterized by internal consistency, a regulated system of social relations based on regulatory requirements, principles of law and legality, as well as on moral requirements, rights and obligations, freedom and responsibility of all subjects of law. At the same time, the understanding of the rule of law must be associated not only with lawful,

but also with illegal behavior in society, the quality of the latter and its volume (Privezentsev, 1997).

It can be stated that there can be no law and order and financial discipline in the absence of laws and legality, as well as the meaning of the creation, existence and operation of laws and legality is to establish law and order, expressed in the field of public finance in the form of financial discipline. Consequently, one can speak of financial discipline as such a state of public finance, which is characterized by accurate and timely execution by state bodies, local authorities, their officials, citizens and organizations assigned to them in accordance with the instructions contained in acts of financial legislation, financial obligations.

Financial discipline is one of the varieties of state discipline and is considered as a form of implementation of the rule of law in the field of public finance. Based on this, financial discipline is aimed at ensuring the rule of law in the implementation of financial activities of the state and local government. The main goal of establishing and maintaining financial discipline is to ensure: spending budget funds in accordance with their intended purpose; strict adherence to the regime of their saving; economic growth; maintaining the stability of the monetary system; property interests of individuals and organizations; the validity of financial transactions; publicity of financial transactions, unless otherwise provided by the legislation of the Russian Federation; efficiency of financial transactions. At the same time, it should be noted that financial security is achieved by pursuing a unified state policy in the field of ensuring the security of the financial system, a system of economic, political, organizational and other measures that are adequate to threats to the financial interests of the state.

To create and maintain the required level of protection of financial security objects in the Russian Federation, a system of financial legal norms is being developed that regulate relations in the field of budgetary, tax, monetary security, the main directions of the activities of state authorities and administration in the field of public finance are determined, and financial control mechanisms are being formed and monitoring. The requirements of legality in the field of public finance regarding financial discipline and security are as follows: (1) full receipt of income provided for by the relevant financial planning act; (2) the validity, purposefulness and efficiency of the use of funds released in accordance with financial planning acts; (3) full and timely fulfillment by the participants of financial relations of their obligations to transfer the funds due from them to the budgets of the corresponding level; (4) strict observance of the rules

established by law for the implementation of operations for the attraction and use of funds, cash and non-cash payments, cash transactions, as well as the rules for accounting for funds and transactions with them.

While maintaining the balance of financial interests of the individual, society and the state, one should proceed from the principle of inevitability of punishment and the application of measures of state coercion against violators of financial legislation. It is coercion that makes law the unique instrument of influencing public relations, which it has been over the past several thousand years. Providing legality and law and order, state coercion itself must remain legitimate, i.e. must be applied exclusively by specially authorized persons within the limits of the norms provided by law. At the same time, the rationality of financial policy is to maintain a "golden mean" between the interests of the state and private capital. Only under this condition economic growth and social stability are possible in the country. Legal means used by public authorities in order to effectively ensure the financial interests of the state are an integral element of a single financial and legal mechanism for legal support and protection of the financial interests of the state and municipalities. Legal means of ensuring financial security should be understood as legal norms and individual legal acts used by officials of public authorities aimed at ensuring the protection of the object of financial security, at eliminating threats to the functioning of the financial system. The system of legal support for financial security is conditioned by objective factors. The main objective factor influencing the definition of the financial security system is the financial activity of the state.

The characteristics of the elements of the system of financial and legal support for financial security made it possible to state the lack of a clear definition of the concepts of financial security, financial security measures, legal regulation of the application of security measures in the current financial legislation. The legal norms that make up the content of the system of legal foundations for ensuring financial security, establishing the objectives of the entire system, must ensure the effective operation of public authorities that ensure the protection of the financial interests of the state. The basic rules governing the sphere of ensuring financial security should be contained in the Federal Law "On Financial Security", the provisions of which would be developed and concretized in financial legislation. In this law, it seems necessary to fix:

1. definition of basic terms related to the legal provision of financial security;
2. general provisions for countering threats in the field of public finance;
3. a clear list of threats to financial security, with detailed source content;
4. the powers of public authorities providing financial security;
5. measures of legal coercion against violators of the law on financial security.

An effective regulatory framework for financial security is the most important condition for its consistency, since it ensures the legitimacy, integrity and interconnection of elements.

Discussion

In the theory of law, legal means are considered as norms of law, individual prescriptions and orders, contracts, means of legal technology, all other regulatory instruments considered in the unity of their characteristic content and form (Alekseev, 1987). Legal means are also determined through the phenomenon of legal phenomena, which, in turn, are expressed in institutions (regulations) and acts (technologies), with the help of which the interests of the subjects of law are satisfied, the achievement of socially useful goals is ensured (Matuzov & Malko, 2001). Legal means are considered both in the narrow and in the broad sense, which distinguishes the essential and substantive elements of this legal phenomenon. So, in a narrow sense, legal means are legally significant actions that are committed by subjects with a certain degree of discretion in order to achieve those goals that do not contradict the legislation and the interests of society. If we consider legal means in a broad sense, then here we should understand the legal instruments that allow their subjects to solve the assigned tasks (Puginsky, 1984).

Legal means are understood as: methods of protecting rights, measures of operational influence, transactions, measures of responsibility, contracts, non-contractual obligations, presumptions, fictions; permissions, prohibitions and positive obligations (Sapun, 2002); norms and principles of law, legal facts, subjective rights and legal obligations, benefits, incentives, penalties, law enforcement acts (Popinov, 2005); methods of legal regulation (Znamensky, 1980); norms and legal relations

(Petrova, 2003); legal relations and sanctions (Polonsky, 1980); legislative initiative, conciliation commissions, referendum, complaint, claim, statement, petition (Baturina, 2001); methods and techniques of action developed by legal practice and expressing the optimal options for the behavior of the subjects of relations at the stage of the implementation of law (Mints, 1983); legal possibilities inherent in the norms of civil legislation used in the process of implementing these norms (Kalmykov & Barinov, 1984), legal phenomena expressed in instruments (regulations) and acts (technologies), with the help of which the interests of legal entities are satisfied, the achievement of socially useful goals is ensured (Andreev, 2010). As follows from the above definitions, most scholars include legal norms or stable legal constructions as legal means. The study of the scientific works of these authors allowed us to form the author's position on the essence and content of the system of legal means of ensuring financial security in relation to modern legislation and the financial model operating in the state.

Conclusions

Ensuring financial security depends on the development and implementation of managerial decisions of the state, authorities, business entities, as well as means of ensuring security. One of the most important structural elements of the system of legal support for the financial security of the state is the system of security actors in the field of public finance. In the light of the foregoing, in the post-COVID period, the system of legal means of ensuring financial security can be represented in the form of legal tools, with the help of which the state of security, stability and reliable functioning of the financial system of the state is guaranteed and maintained, and which:

1. allows to ensure the financial stability of the state for the forecasted period in any conditions, including minimizing the consequences of the coronavirus crisis of the monetary and financial-credit systems;
2. neutralizes the influence of world finances and economic expansion of foreign countries on national security, including in the post-COVID period;
3. satisfies the needs of society for financial resources and ensures economic growth, which will allow overcoming the negative consequences of the lockdown;

4. is able to withstand existing and emerging dangers and threats that seek to inflict financial damage on the state, cause the state to become dependent on external factors, undermine the competitiveness of domestic producers, and cause an outflow of capital;
5. ensures the flexibility of legislation in carrying out economic transformations, as well as the compliance of national legislation with international standards;
6. ensures the protection of the financial interests of the state and society, even in the face of potentially possible new waves of coronavirus infection, lockdowns and other restriction measures;
7. has an effective financial control mechanism in the distribution and use of public funds flows, especially in a pandemic when business opportunities are limited by a lockdown;
8. creates the investment attractiveness of the jurisdiction by creating an appropriate investment climate and legal regime for the protection of foreign investment;
9. provides efficiency in the use of administrative methods in the formation of the revenue side of the budget. The main legal means of ensuring financial security should include the legal regulation of the financial activities of the state (legislation), based on

   a. legal forecasting;
   b. financial control and financial monitoring;
   c. legal liability.

The content of the system of legal means for ensuring the financial security is a set of legal norms that determine financial and legal regulation, the creation of conditions and the powers of security subjects in the field of public finance. Legal support of financial security includes a set of certain means and methods aimed at protecting the financial interests of the state.

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CHAPTER 24

Opportunities of Use of Option Agreements in the Post-COVID Economy: Comparative Legal Study from Russian Law and English and American Law Prospective

Maksim A. Novikov

Introduction

Modern challenges are not just international, country-specific, regional factors of global crises, but also global factors and threats (such as COVID-19 pandemic) that affect all countries in one way or another, regardless of country differences as well as differences in the level and quality of life, socio-economic development and potential.

The COVID-19 pandemic is taking a substantial toll on a great number of economies and societies. At the pandemic's onset, governments worldwide imposed stringent measures to contain the spread of the new virus. These measures resulted in significant short-term economic disruption

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and job loss, compounded by falling confidence and tighter financial conditions. Emergency measures were put in place in many countries, including preservation of the incomes of companies during confinement relating to the COVID-19 pandemic. As the health and human toll grows, the economic damage is already evident and represents the largest economic shock the world has experienced in decades.

Despite the initial predictions of possible changes in the global architecture of the international capital movement, the state of the capital markets, changes in the investment attractiveness of countries and regions of the world (including the Russian Federation and the USA and the United Kingdom, being the world's major economies) under coronavirus pandemic conditions, on the agenda of many economic as well as legal studies is the research of the impact of harmonization of law in order to simplify entering into different business transactions.

Therefore, research on the process of forming investment attractiveness of the economy, especially in the context of post—COVID conditions, is an extremely relevant area for analysis of the opportunities of different legal systems and different legal mechanisms which may make doing business more simple and attractive (in particular, at the present stage).

The author conducted a review of research on option agreements regulation and different possibilities of use thereof in the context of post—COVID economy. This contractual construction is commonly used in international business transactions and allows to define the standard conditions included in the agreements and to determine common rules of contractual cooperation between the parties in the future.

An agreement on granting an option to conclude a contract is of great interest for the theory and practice of entrepreneurial interaction, which is explained by the deferred effect of the agreement that depends only on the will of one of the parties. It is substantiated that introduction of the institute of an option agreement in Russian legislation and entrepreneurial activity should have a positive effect on both the development of contractual business relationships and the participants and shareholders of different legal entities.

The assessment of the development level of the problem of legal regulation relating to the option agreements and investment attractiveness of economic systems in the face of global threats of both economic and non-economic nature (including coronavirus pandemic conditions) was also carried out.

Methodology

The methodology of the study comprises comparative, formal-legal, functional methods and systemic approaches. The results of the study of problematic issues of option agreements' regulation in the Russian Federation and in two leading common law states (the United Kingdom and in the United States of America) form the ground for creating a position on the opportunities to adopt their experience in the Russian Federation for forming investment attractiveness of the Russian economy (as well as ex-USSR countries' economies) and facilitating the development of the Russian civil law (as well as ex-USSR countries legal systems). The findings of this research can be applied for further developing models for legal regulation of option agreements in the Russian Federation and in ex-USSR countries as well as using positive aspects of the considered experience of common law legal systems in Russian legal system and in ex-USSR countries' legal systems.

Results

Influence of COVID-19 Pandemic

The COVID-19 lockdown being a strange and difficult time, and if you are looking to buy or sell some property at first glance it may seem that now might not be the best time to enter into a contract. However, it is a good time to consider an option agreement, particularly if you are buying or selling some assets at the moment (for example, some commercial real property assets for further development).

As COVID-19 is impacting on conveyancing transactions some parts of the market are inevitably slowing down at the moment, but many companies and persons are looking forward to making their investments (or a part thereof) when lockdown measures are lifted, so by putting an option in place now, it will give the ability for such companies and persons (including but not limited to the developers and landowners) to make the best of the situation in due course.

An option agreement offers flexibility as to timings, which is a key consideration at this post—COVID period of time taking into account a general volatile economic situation in the world. Frequently options are drafted to allow the offerees (being, as a rule, the purchasers under the relevant option agreements) to exercise their ability to purchase the shares or participation interests in charter capital of other companies or some

other particular assets (a land or some other property under construction, for example) at any time during the option period. This allows the relevant offerees to choose the most appropriate time to exercise the option, permitting them to take account of matters such as the grant of necessary documents, licenses or permissions, availability of finance and the ability to make business, in general, following the cancellation of the stringent measures imposed by the governmental authorities in connection with the COVID-19 pandemic.

It's an open secret that every business transaction is a result of some social facts and of a long development of humanity (Osipov, 2020). As it was mentioned above, use of option agreements is necessary when structuring complex M&A deals (including when acquiring shares in charter capital of joint-stock companies and participation interests in charter capital of limited liability companies), joint ventures and venture capital transactions and other assets acquisition deals (for example, acquisition of some commercial real property).

Unlike when structuring derivative financial instruments (options, futures and forward transactions), option agreements have no speculative or hedging function but in some cases may have the similar economic effect. By applying option agreements, one party to a transaction may secure its legal rights and interests to buy or to sell some assets (including shares and participation interests) at its sole discretion depending on any fact, event, circumstance or omission. It is especially important to have such possibility in a situation of unpredictability, in general, and within current volatile post—COVID economic situation, in particular.

Russian Law Prospective

In view of current Russian civil law reform, including civil legislation, the problems connected with business transactions (including entering into option agreements) remain actual for different legal research works and studies.

It should be mentioned that before March, 2015 Russian law does not provide for the protestative conditions (the most frequently used in English and American law as conditions precedent or CPs), which mostly depends on the discretion of only one party to the transaction, and, therefore, that was one of the main reasons of unattractiveness of Russian law for foreign investors from the developed countries as well as absence of the relevant uniform and consistent Russian court practice.

In particular, before the amendments introduced legal concept of option agreements into the Civil Code of the Russian Federation, option agreements, entered into under Russian law, were at risk of being invalidated by Russian courts that would often hold them to be conditional transactions on the basis of a narrow interpretation of Articles 157 and 327 of the Civil Code (transactions concluded under a condition which shall not depend on the discretion of only one party to the transaction) (Online legal system Consultant Plus, 2021).

Even though the principle of freedom of contract is enshrined in the Russian Civil Code, Russian law and Russian courts have for many years taken a hostile or equivocal approach toward the inclusion in Russian contracts of many instruments often used in international business transactions (in particular, governed by English law).

That was one of the most common reasons why most Russian complex business transactions were governed by English or American law during the last few years. Nevertheless, in a great number of financial, investment and JV transactions such conditions precedent depending on the sole discretion of one party to the relevant transaction as well as option agreements are often used and highly requested for international business transactions.

As a consequence, the relevant Russian law was further changed by adopting the relevant concept of English and American law and its implementation in two new Articles 429.2 and 429.3 of the Civil Code of the Russian Federation (Online legal system Consultant Plus, 2021). On March 8, 2015 the President of Russia signed into law a new bundle of amendments to the relevant civil legislation (Online legal system Consultant Plus, 2015), which should resolve some of the above issues and make Russian law more user-friendly and flexible for Russian and foreign entrepereneurs. It should be mentioned that Russian law has adopted simultaneously two models of option regulation:

a. an agreement on granting an option to enter into a contract whose subject-matter is the provision of a right (by way of an irrevocable offer) to enter into one or more principal agreements (Article 429.2 of the Civil Code), for example, an option to enter into a lease agreement by way of which the lease agreement is entered into upon exercise of the option by the relevant rights-holder; and

b. an option agreement whose subject-matter is the right to require the performance of some actions or transfer of some property contemplated by such agreement (Article 429.3 of the Civil Code), for example, an option to buy or sell assets without execution of a separate sale and purchase agreement.

Moreover, new Article 327.1 of the Civil Code was introduced and now allows conditions within the control of only one party to the transaction. The performance of obligations as well as the exercise, variation and termination of certain rights or obligations under a contract may be made conditional upon a certain act being done or not done by one of the parties, or upon the occurrence of any other circumstances as provided for by the contract, and such actions or circumstances can be, in particular, within the control of only one of the parties to the relevant contract.

In comparison with other contracts, one of the main differences between a preliminary contract and an option to conclude a contract is that, according to general civil law provosions, a preliminary contract is a bilaterally binding contract, whilst the will of one party is required to conclude the main contract on the basis of an option to conclude a contract, therefore, such a party has some kind of transformation right (Karapetov, 2020; Ruzakova, 2018).

In essence, both types of contracts (option for execution of contract and option contract) have little difference: in both cases there is an authorized party, which unilaterally acquires the right to demand a liable party to perform a certain actions or transfer some assets. In both cases the contract may provide for an option fee for granting the option or in exchange for a consideration other than money (another cause or causa) or even may be granted without any consideration in some cases (if parties have not expressly agreed upon its gratuitousness), as opposed to English law which requires always some consideration (at least, nominal) to be paid by the grantee. Nevertheless, it is highly recommended to have some consideration or another causa when entering into option contracts governed by Russian law.

Figure 24.1 shows a general scheme of option contract formation and its exercise under Russian law as opposed to conditional contract formation and exercise.

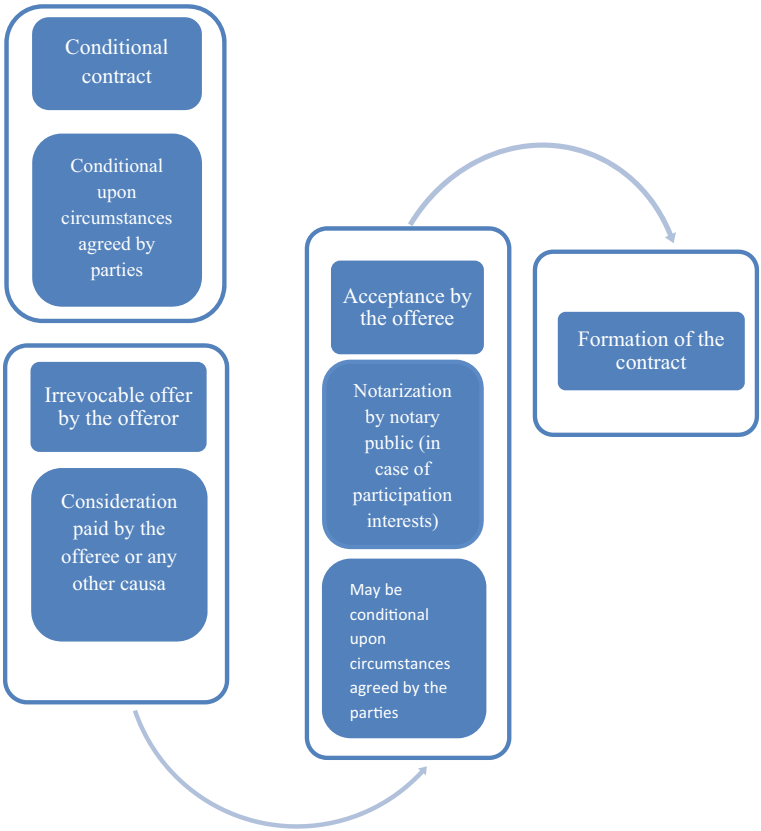

Fig. 24.1 General scheme of option formation and exercise under Russian law as opposed to conditional contracts formation and exercise (*Source* Created by author)

Common Law Prospective

Under common law, an option stands midway between an offer and an unconditional contract. It creates a unique relationship, with characteristics both of an irrevocable offer and a conditional contract. Put simply, an option is a right to execute or relinquish a transaction on fixed terms within a prescribed period of time. It is usually acquired by contract and when supported by consideration an option is binding on the grantor.

The person in whose favour it is made, the option holder, assumes no obligations (Dray et al., 2016).

An option must be distinguished from a conditional contract. The fundamental difference between them is that a conditional contract creates an obligation on the grantee to buy when the conditions are fulfilled, whereas an option gives the grantee a right but no obligation to buy. Whilst the vendor is clearly in a weaker position with the absence of the purchaser's commitment when entering into an option, this lack of mutuality of obligation at the outset usually comes at a price, and the purchaser is essentially buying the right to acquire some asset in the future.

An option has at least some of the characteristics of an offer in that it can become a contract of sale when the purchaser accepts it by exercising the option (Treitel, 2015). The grantee obtains an equitable interest in the property the subject of the relevant option, giving it equitable remedies and a priority over the later competing claims over the relevant asset.

Therefore, the option has often been characterized as an irrevocable offer to enter into the transaction which will be accepted and therefore form a contract for the transaction when the option is exercised by the grantee. Sometimes, however, the option is said to be already a conditional contract to enter into the transaction where the exercise of the option by the grantee converts the conditional contract into an unconditional contract (Helby v Matthews, 1895). In the context of land options, it has also been said that an option is a relationship *sui generis* which is neither simply an irrevocable offer nor a conditional contract but analogous to both (Spiro v Glencrown Properties Ltd, 1991).

At the same time, the contract of option must be distinguished from the following: (i) the option to accept or reject an offer; (ii) a contract subject to a condition precedent; (iii) a contract providing one party with the option of alternative performance; and (iv) a right to waive a provision wholly in one person's favour.

An option must be distinguished from a 'right of pre-emption' by which a landowner agrees to give the purchaser the right to buy 'at a figure to be agreed' should the landowner wish to sell (therefore, a right of pre-emption is not itself an offer but an undertaking to make an offer in certain specified future circumstances) (Tiffany Investments Ltd v Bircham & Co, Nominees, 1957).

The grant of a right of pre-emption entitles the grantee to become a preferred purchaser if and when the grantor decides to sell his asset (for example, a land). A right of this kind is sometimes termed a right of first refusal (ROFR) or right of first offer (ROFO), which is something of a misnomer since the grantee contracts for the opportunity to accept an offer rather than an opportunity to refuse one.

In comparison with the right of first refusal, the grantee does not have the sole right to determine whether to purchase the property or when—that rests with the grantor who is free to retain the relevant property indefinitely and has no obligation to sell it (opposite to the above construction of the option agreement). The grantor is, therefore, the one who determines whether a vendor/purchaser relationship (as the case may be) will arise. In a sense, unlike an option, the grantee's rights remain inchoate until the grantor triggers them (i.e. the grantor has in effect a negative obligation in that it cannot offer its property for sale, for example, without first offering it to the grantee) (Chuprunov, 2020; Farrands, 2010).

Therefore, an offeree may need time to decide whether to accept the offer and, during that time, may need to spend money and effort. The doctrine of consideration, combined with the rule of free irrevocability makes it impossible for the offeror to give the offeree the desired protection merely by saying so. The conventional way for the offeree to overcome the obstacles imposed by the common law rules and get the desired protection is by means of an option (Farnsworth, 2004). An option is itself a contract, sometimes called an option contract or an option agreement to distinguish it from the principal contract to be formed on acceptance the offer (Estate of Claussen, 1992). An irrevocable offer is commonly called an option and, like any other offer, an option imposes no duty on the offeree which has unfettered to either accept the offer or not (Syrovy v. Alpine Resourses, 1993).

A contract of option is one whereby the grantor of the option offers to enter into what may be called a 'major' contract with a second person and makes a separate contract to keep his offer open. Usually, the person to whom the grantor of the option binds himself to keep the offer open is that second person, who may be conveniently referred to as the 'option-holder' (Halsbury's Laws of England, 2019).

The offeror can make an option if the promise not to revoke is supported by consideration. A promise not to revoke an offer may also be supported by consideration other than money. Thus, an option may

be part of a larger transaction as, for example, when an option to renew a lease or to purchase the premises is given to the lessee as part of the lease.

Figure 24.2 shows a general scheme of option contract formation and its exercise under English and American law (Source: author).

In terms of classification, the contract of option may be unilateral or bilateral. It may exist either as a separate option contract, or as part of a larger contract such as one of the following: a lease with an option in the lessee (of land) to renew the lease or buy the reversion, as the case may be.

If the option falls on an agreement for the transfer of some real property, as is the case of the purchase option, it can also be constituted as a right *in rem*. This reinforces the effectiveness of the right, and grants not only its direct exercise against third parties, but also the immediate acquisition of ownership of the good (Capdevila, 2021). An option (or

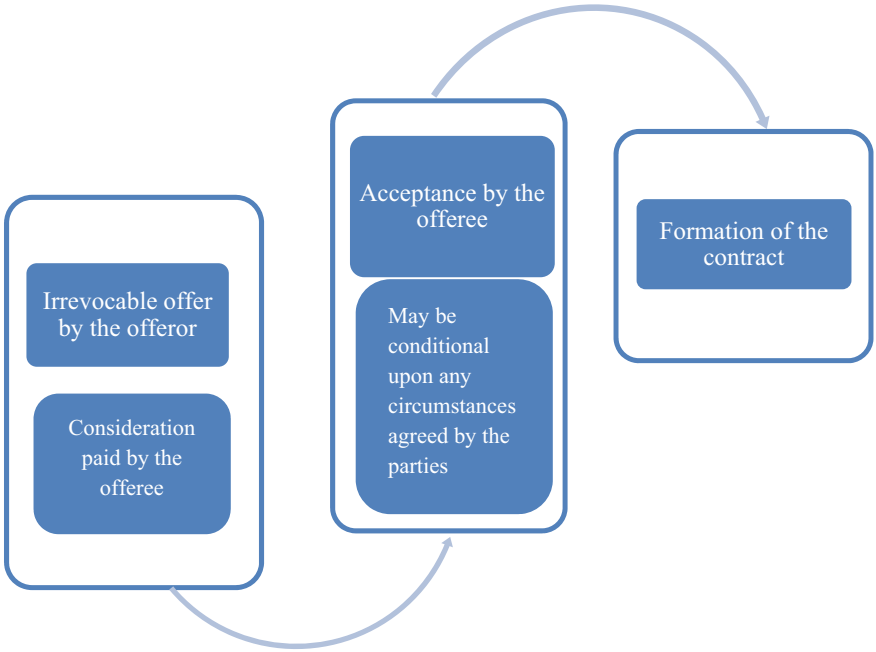

Fig. 24.2 General scheme of option formation and exercise under English law (*Source* Created by author)

covenant) to renew a lease entitles the tenant to call for a further lease or underlease of the demised premises on the expiration of the existing term, subject to his complying with the provisions of the option. Like an option to purchase, it restricts the grantor (the landlord) and gives a right to the grantee (the tenant) which he is not bound to exercise. On exercise the parties are brought into a new legal relationship (United Scientific Holdings Ltd v Burnley BC, 1978). Alternatively, an option may also be conferred on a tenant to buy the freehold reversion. An option contained in a lease differs from a standard option agreement because the grantor and the option holder stand in the relationship of landlord and tenant, and that the contract creating it is made part of the terms on which the lease is granted (Griffith v Pelton, 1958).

Opportunities of Use of Option Agreements in Different Business Transactions in Post-COVID-19 Economy

Options are entered into for all sorts of reasons—for example to gain some tax advantage, in settlement of a dispute or in the making of some family arrangement, for example. Economics, however, explains why many options are granted.

Put and call options are used on joint ventures, M&A deals and financing structures (particularly where offshore holding companies are involved) (Glukhov, 2019). They can be used:

a. to provide an exit strategy for one or more of the parties or partners to the relevant M&A or JV transaction; and
b. as an enforcement mechanism on default under a shareholders' agreements (SHA) (Thomson Reuters. Practical law, 2011) including resolution of different corporate conflicts (the number of which has significantly increased, since the current COVID-19 pandemic has not only had an immense impact on our social life and health but on the global economy and corporations as well) and deadlocks by means of such mechanisms as '*Russian roulette*' and '*Texas shoot-out*' (particularly where there are concerns about trying to enforce directly against assets in Russia). A common feature of JVs in the Russian market is the inclusion in SHAs of provisions which allow for the exit of a JV partner through the use of a put option (whereby one JV partner can require the other to purchase his shares) or a call option (pursuant to which one JV partner can

require the other partner to transfer his shares or participation interests in charter capital of such JV to him). Exit triggers should take into account significant project risks, such as new restrictive measures which may be imposed in connection with new coronavirus pandemic conditions. In case of a call option, the holder can decide when to invest. He preserves more of his capital and makes his decision on when to buy (if at all) when economic conditions are thought to be more favourable to him. He cannot eliminate risk by using an option, but he can reduce it (Dray et al., 2016). The call option allows to reserve the right to buy an entity's participation interests or shares. Call option agreement guarantees the entry into a sale and purchase agreement by a court in case the seller avoids voluntary execution of such contract.

If we talk about usual business transactions in relation to the shares or participation interests in companies' charter capital, then entrepreneurs also use call or put option agreements. A put option is a right of an owner to sell to a specified person. Like a call option, the sale can be at a fixed price or at a price based upon valuation and the option holder (the vendor) is not bound to exercise such option. An enforceable call option (or option to purchase some assets) confers on the grantee a right to call for a transfer of the relevant shares or participation interests from the grantor provided that the grantee complies with all the terms and conditions of the option agreement.

At its most basic, the put option is a marked example of spreading if not eliminating risk. In fact, the put option can be seen as a form of some kind of insurance against risk. For instance, a person might buy some real property coupled with a put option at a fixed price. If the land value rises, then the landowner continues to hold it. If the land value falls, the landowner can exercise the put option and pocket the exercise price (Brealey & Myers, 1988).

Under common law, options, rights of first refusal and certain other pre-emptive rights have commonality in that they all prescribe circumstances in which the grantor and grantee of the right may become vendor and purchaser, respectively.

Therefore, the option contract allows one of the parties to claim the conclusion of a projected contract, whose essential elements (including, as a rule, a price) are already determined, or to give effect to this same contract by making the reciprocal benefits enforceable. The option binds

the grantor contractually in favour of the grantee according to the terms and conditions of the option which he has granted, but it does not impose any obligation on the grantee who has a unilateral choice whether to exercise the option and thus to enter into the relevant transaction.

Such possibility seems to be exceptionally pertinent nowadays in post—COVID economy due to the fact that a party may be unwilling to purchase the full control (100% of shares or participation interests in charter capital of some company, for example) at the relevant moment.

It is also possible for the parties to grant cross-options in relation to the same transaction, each party having the right (as grantee) to require the other (as grantor) to enter into the relevant transaction, but the requirements for a valid option must be satisfied in relation to each one of such cross-options.

In terms of a land or some other real property sale and purchase transaction, an option agreement is an agreement entered into by the owner of the relevant real property (or by a person/entity which is obliged to build some real property in the future) and a potential purchaser (a developer, for example) of the owner's real property. This form of contract may provide a balance of security to both real properties' owners looking to sell and developers who would like an interest in the land prior to outlaying costs in applying for its planning or prior to cancellation restrictive measures imposed in connection with the COVID-19 pandemic.

When the parties enter into the agreement, often an agreed payment is made to such owner and in exchange, the purchaser is granted a contractually binding first option to purchase the relevant real property. The purchase must take place within the option period (which can potentially last several years) or as a result of a trigger event, such as planning permission or a certificate of acceptance, for example, being granted to the relevant person (Legislation.gov.uk, 2021).

Therefore, the option agreement prevents the owner of real property from selling the property whilst the developer is exploring the viability of the project or obtaining some permits thereby reducing the risk and potential cost to the developer. The relevant real property is not purchased until it is exercised by the purchaser, which can be predicated by some trigger event.

The real properties' owners have the benefit of knowing that during the option period they may benefit from the relevant developer (being an offeree under the relevant option agreement) exercising the option and

paying an option premium for the relevant real property (right thereto), whilst such a developer has the ability to obtain planning or permits, without the risk that they will be compelled to acquire a parcel of land without the benefit of planning (Richards, 2021).

A developer may also be able to fix the purchase price (or price determination method) with the landowner at the outset of the option agreement and that may prevent the purchaser from incurring any unanticipated costs or any price increase in the future. This means that there is certainty of initial costs and the developer may potentially end up paying less than actual market value.

Of course, on the one hand, an option agreement does not guarantee a sale. On entering into an option agreement, the owner of the relevant real property often needs to grant a standard security to the developer which means the seller cannot sell the land, for example, to a third party for the period of time agreed in the option without restriction. On the other hand, the offeree gives the offeror some kind of consideration in exchange for keeping by the offeror such an offer open for a certain period of time.

Remedies for Breach of an Option Contract

As for the remedies for breach of an option contract by the grantor, if the grantor causes the grantee not to obtain that transaction (for example, by refusing to accept and act upon a valid exercise of the option, or by entering into a competing transaction with any third party which makes performance impossible in favour of the grantee of the option), the grantor is in breach of the option contract and the grantee is entitled to the following usual contractual remedies for breach:

a. the grantee will be entitled to damages: on normal contractual principles this will cover the loss the grantee suffers by not obtaining the transaction, including the profits he would have made from it (Cartwright, 2019); and
b. in a case where the transaction is still possible, and where damages are an inadequate remedy, the court may order specific performance of the option contract, and therefore require the grantor to enter into the relevant transaction (this remedy is most commonly awarded in the case of options to purchase real property, but may also be available in another case where damages are inadequate, such

as a contract to purchase shares in a private company for which there is no ready market) (Pena v Dale, 2003).

It is also vital for the grantee to consider whether the burden of the option should be registered against the grantor's registered title. If it is not so registered (and unless the grantee is protected in registered land by being in actual occupation of the grantor's land) it will not be enforceable against a purchaser for value of the grantor's estate, and the grantee's remedies will be limited to damages against the grantor personally (Cartwright, 2019).

Discussion

Research on the development of legal regulation in respect of option agreements in different countries and on different possibilities of use of option mechanisms are provided for in the works of domestic researchers, such as E. Glukhov (2019), I. Chuprunov (2020), A. Karapetov (2020), and V. Ralko et al.(2019).

Studies of English and American law aspects relating to option agreements are marked in the works of such researchers as Donald J. Farrands (2010), Richard Brooks and Waldron Blake Dawson (2021), Arthur Corbin (1914), E. A. Farnsworth (2004), and M. I. Inozemtsev (2021).

Conclusions

The analysis of advantages of use of option agreements in a post-COVID-19 economy has allowed to identify the key competitive advantages of this legal mechanism which allow the entrepreneurs to exercise their ability to purchase or to sell the relevant assets at any time during the option period taking into account the current economic and financial uncertainty and the financial market volatility.

In general, the obtained research results are necessary and in demand in terms of finding and implementing other competitive advantages of the considered countries legal regulation, doctrine and the relevant court practice relating to the option contracts that will work in the new difficult economic conditions taking into account the current COVID-19 pandemic.

The option can be very useful during negotiations for a contract where one party is not yet in a position to enter into the contract but wishes to

be sure that it has the right to enter into a contract which provides for a fixed price. It can also be very useful to ensure that a present contract may be followed by a future contract (e.g. the renewal of a lease) if one party so wishes it when the time comes (after coronavirus pandemic conditions and/or all of the restrictive measures imposed by the relevant authorities are cancelled).

However, an option must be carefully drafted to ensure that it does not fail for uncertainty. This means that an option is useful and effective only where the terms of the principal transaction have already been settled (e.g. the price to be fixed by reference to objectively determinable market conditions when the option comes to be exercised).

As for the actions for entrepreneurs to take now, then they shall:

a .consider whether COVID-19-related events and circumstances have triggered a requirement to reassess renewal, termination or purchase options, and
b .consider the impact of any changes in economic incentives on whether a company is reasonably certain to exercise, or not to exercise, such options.

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CHAPTER 25

Risks of P2P-Lending in Russia in Response to COVID-19

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Introduction

Crowdlending relations in the Russian Federation have not been regulated by special legislation for a long time, and only recently a special regulation that affects one of the types of crowdlending has been introduced. The Federal Law on Attracting Investments Using Investment Platforms and on Amendments to Certain Legislative Acts of the Russian Federation entered into force on July 24, 2019.[1]

This law regulates the attraction of investments by attracting loans, where the parties to the investment agreement, on the one hand,

[1]Federal Law No. 259 of 02.08.2019 "On Attracting Investments Using Investment Platforms and Amendments to Certain Legislative Acts of the Russian Federation."

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include the person attracting the investment (legal entity/individual entrepreneur), and on the other hand—the investor (individual). However, the adopted law does not regulate crowdlending relations, where individuals act on the side of the person attracting investments and the investor. That is, the Law does not consider relations for attracting investments using information platforms by attracting loans from individuals (otherwise called relations for mutual lending between individuals [Uvarova, 2018], consumer p2p lending, equal lending)—lending by individuals to other individuals through special Internet platforms where the individuals attracting investments (borrowers) place their applications for financing from investors (lenders) for a specific period and at a certain interest (Bychkov, 2016; Kuznetsov, 2017).

There is a problem of special regulation of mutual lending relationships between individuals (Uvarova, 2018), which is not captured in Russian legislation, while this problem has already been studied abroad (Boitan, 2016; Clark, 2011; Delivorias, 2017; Munshi, 2016) and is gradually being introduced to the Russian market.

When carrying out activities in the field of mutual lending, many risks arise both to the subjects of mutual lending transactions and the objects of protection. Risks in the field of mutual lending increase significantly during the pandemic. On the one hand, the emerging financial difficulties associated with lower earnings, on the other hand, the traditional banking institutions refusing to issue loans contribute to increasing the individuals' demand for mutual lending platforms. As a result, these circumstances can provoke these sites into rapidly growing and new players into entering the market. However, the absence of special regulation and legal uncertainty of these relations during a crisis, the risks of facing fraudsters, financial pyramids, as well as issuing non-refundable debts and, accordingly, dissolving the operator, are increased.

Among other things, during a crisis, customers often seek to return previously invested funds to buy real estate or other objects, because, at such times, people are less willing to trust financial organizations and their tools when it comes to saving their capital.

Moreover, during the pandemic, people tend to have more confidence in traditional banking institutions than in the newly emerged and not yet proven p2p platforms, which leaves a new negative imprint on the p2p lending sector in the post-crisis period (Shashkova et al., 2020).

Besides, a sharp increase in the debt burden of the population during the pandemic tightens the regulatory norms and requirements of issuing

loans. In particular, this trend was observed in the microfinance organizations market. If we take p2p lending, a sharp tightening or change in the rules by the regulator can be decisive for the entire industry.

It should also be noted that many partners of p2p operators had to suspend their activities due to the crisis, and since the operator is just an information intermediary, all the activities of such sites were seriously jeopardized. All in all, the pandemic became a catalyst for withdrawing some bona fide financial market participants.

At the same time, the rapid growth of online technologies noted during the pandemic has given rise to unscrupulous p2p lending market members who question the authority of the existing players as representatives of this industry and also contributes to the growth of the platforms pretending to be bona fide p2p platforms.

Methodology

The topic will be studied using the following methods: induction and deduction in the aggregate, analogy, historical method, and the method of comparative law.

Taking into account the reasoning of F. Bacon, in particular, about the so-called child induction, and that induction does not completely guarantee to obtain new truth from the existing ones, but only introduces a certain degree of probability of the deduced statement, deduction, on the other hand, allows us to obtain new truths from the already existing knowledge, and with the help of pure reasoning, without recourse to experience, intuition, common sense, etc., so, in our opinion, it would be better to combine these two methods.

The paper will not use the method of analogy in order to transfer the foreign experience of mutual lending to Russia, since in this case, the conclusions will be unreliable, because, besides the fact that the legislation and the mentality of the subjects of mutual lending differ significantly, the relations themselves are forged differently, taking into account the specific realities of each state. However, the relations of mutual lending, their nature and character in Russia and abroad, are indeed similar, moreover, the institution of mutual lending (p2p lending) was originally born abroad (UK, USA), so we still have to use the method of analogy, but as a means of putting forward new hypotheses, a method of solving problems by reducing them to the previously solved ones, etc.

We should also use the historical method. Legal regulation of mutual lending is a very relevant issue as the relationship has been formed, supply and demand are gradually emerging, and the legal framework is not yet there. We need to develop legal norms corresponding to the existing relations, requests from businesses, as well as individuals. It is very important to work out the legal framework taking into account the historical origin of these relations in this country taking into account the development of society itself and economic relations in it, in some respects even taking into account the Russian mentality (Popova, 2020). If we take the topic under consideration, it is worth paying attention to the principles formulated by F. Savigny in the nineteenth century. Savigny asserted that law in its historical development goes through three stages. Initially, law arises in the minds of the people as "a natural law." This law always has a national specificity, like the language and political structure of any people. With the development of folk culture, the law becomes more complicated, it begins to live apart in the minds of lawyers—so scientific law emerges.

The comparative law method will also be used to investigate the topic of this study. Using this method allows us to assess the legal regulation of similar public relations, namely relations in the field of mutual lending, in the Russian and foreign legislations, for example, the one of the UK and the USA, where mutual lending relations emerged, or China, where, along with the development of p2p lending, financial pyramids have become particularly widespread. At the same time, although not only legal systems, but also the mentality and, accordingly, the psychological portraits of borrowers differ, it is very important to study these factors, for example, to create an online platform scoring system. Nevertheless, we will be able to identify general patterns of development of the relations in the field of mutual lending, take into account the foreign experience in regulating such relations, form, implement, and develop the provisions that will undoubtedly strengthen the national legal order.

The methodology includes the following methods of studying legal phenomena and processes in the field of mutual lending: a combination of induction and deduction, analogy, historical method, and the method of comparative law.

Results

Risks Associated with Identification

When registering on the website of the mutual lending operator, the data is collected to create a personal account of the operator's client (borrower or investor) for further operations (in particular, scoring/checking clients) and for concluding mutual lending transactions through the operator's website. During registration, various data is requested, as a rule, among them may be the last name, first name, patronymic or middle name (full name), details of the identity document; date and place of birth, registration address, taxpayer identification number (TIN), insurance number of the individual personal account, subscriber number, email address, as well as other data, for example, information about work or income (Uvarova, 2018).

However, it should be noted that based on the Federal Law "On Personal Data",[2] it is not entirely clear whether all of them can be individually attributed to personal data, which refers to any information related directly or indirectly to a certain or identifiable individual, as well as which data collectively refers to personal data.

This definition is not clear enough, because it is not clear what the criterion for determining an individual is. In the absence of an identifier from the literal meaning of the law, it can be established that under certain conditions, any information about a person can be recognized as personal data.

However, for example, one cannot identify whose data it is, or directly or indirectly identify an individual by email or subscriber number only (Misostishkhov, 2020; Ulbashev, 2020).

Roskomnadzor confirms on its official website that it is mandatory to identify an individual to classify his/her data as personal. In particular, "a photo without additional information that allows identifying an individual as a subject of personal data cannot indicate the processing of a particular individual's personal data. The surname, first name and patronymic (in

[2] Federal Law No.152 of 27.07.2006 (as amended on 24.04.2020) "On Personal Data."

Russia) without additional information that allows identifying an individual as a subject of personal data cannot indicate the processing of a particular individual's personal data."[3]

There is a need for identification to classify a person's data as personal, but there are no clear identification criteria, in this case, so the problem remains unresolved today. However, the conclusion that the data is personal can be made unambiguously.

At the moment, mutual credit operators do not have the right to be the organizations that carry out operations with cash when hiring and servicing individuals, but they can attract the organizations that conduct settlements for their clients. In the case of attracting such organizations, they have to identify the client, that is, confirm the identity, following the requirements of the Federal Law "On Countering the Legalization (Laundering) of Proceeds from Crime and the Financing of Terrorism" of 07.08.2001 No. 115.[4]

Thus, the clients of mutual credit operators will be identified persons, which means that any information about them can be recognized as personal data and is to be protected.

In this regard, there is a risk of personal data leakage when they are transferred by the mutual credit operator to a third-party organization.

Microfinance organizations have the right to identify customers (Gvozdeva & Romanova, 2016), so it is necessary to provide an opportunity for mutual credit operators to do the same. To date, Operators cannot do this. This will improve personal data protection.

Risks Associated with Fraudulent Activities

When conducting mutual lending operations, the following risks should also be considered:

[3] Questions concerning the provision of the state service "Maintaining the register of operators engaged in the processing of personal data"//Official Website of Roskomnadzor (Federal Supervision Agency for Information Technologies and Communications).—Access mode: https://77.rkn.gov.ru/p3852/p13239/p13309/ (accessed 01.04.2019).

[4] Federal Law "On Countering the Legalization (Laundering) of Proceeds from Crime and the Financing of Terrorism" dated 07.08.2001 No. 115//SPS "Consultant Plus."

1. Getting a loan not in your name. Following the resolution of the Plenum of the Supreme Court of the Russian Federation "On judicial practice in cases of fraud, embezzlement and embezzlement" No. 51 of 27.12.2007, obtaining a loan in one's name for another person is regarded as the absence of intentions to repay it. De facto, this is the case—a person is not going to pay being sure that another person will do it. However, from the legal point of view, it does not matter who exactly disposed of the loan funds—the responsibility falls on the person who officially acted as the borrower under the contract. As a result, it is qualified as a group crime, that is, under part 2 of Article 159.1 of the Russian Criminal Code.
2. Compromise of the private signature key (simple electronic signature/digital signature).
3. Non-repayment of funds: The borrower receives funds through the platform operator, but is not going to return them. Such unscrupulous borrowers expect that the debt will be waived since they cannot be found (they turn off mobile phones, change their addresses). They borrow a small sum of money and believe that no one will look for them, especially to sue, since the legal costs may exceed the loan) (Bogoviz et al., 2020a, 2020b).
4. Duplicating the technical device.
5. Loss (theft) of access codes and passwords.
6. Debiting funds from an electronic means of payment in the event of the transfer of access codes and passwords to another person.
7. Use of electronic means of payment by third parties without the permission of the borrower/investor;
8. Interception of information by third parties in communication channels during their use about access codes and passwords, information about borrowers/investors, transactions carried out, payment recipients, as well as other information.

We suggest that the following measures should be taken: Confirm the reliability of mutual lending platforms, as it is necessary to introduce a requirement to label the Internet sites of organizations that represent mutual lending systems since there is a high risk of phishing (a type of Internet fraud in which fraudsters send users of the system an email that contains a link to a fake website, which is very similar to the real website of a legal financial organization, so that they could obtain financial or other confidential information from users) (Kuznetsov, 2017; McMahon et al.,

2016a). With the introduction of such a necessary labeling requirement, the sites of mutual credit operators between individuals will not be highlighted, and therefore, there will be an additional risk for users and the operators themselves. A report by the world's largest anti-fraud organization, the Association of Certified Anti-Fraud Experts (ACFE) said that representative organizations suffer 5%, losses each year due to fraudulent activities (Kuznetsov, 2017; McMahon et al., 2016b).

Commercial Risks for the Operator

Compliance with trade secrets of the unique scoring model of the information platform operator, as well as the platform itself (in fact, the software used by the platform).

The protection of confidential information is legally ensured by the List of Confidential Information introduced by Decree of the President of the Russian Federation No. 1881 of March 6, 1997, Federal Law No. 98 of July 29, 2004 "On Commercial Secrets," etc. Any valuable information (technical, economic, and industrial), as well as the information about the results of intellectual activity in the scientific and technical spheres (formulas, know-how, business plans, financial calculations), can constitute a trade secret (Vasilyeva, 2017).

We suggest that the following measures should be taken: establish a trade secret regime that includes:

1. Preparing and publishing several organizational and administrative documents on compliance with commercial secrets (Regulations on commercial secrets; conditions for access to confidential information, the procedure for working with it, accounting for the persons working with commercial secrets and responsible for compliance with the rules); appointing a person responsible for compliance with commercial secrets of an organization with the definition of his powers, duties, rights, and responsibilities (if the company is large, a security service should be created).
2. Implementing organizational and technical protection measures.
3. Keeping records of those who have obtained access to the information constituting a trade secret and/or those to whom such information has been provided or transmitted.
4. Regulating relations with employees on the use of information constituting a trade secret under the employment contracts and

contractors under the civil law contracts. An additional agreement has to be concluded with each employee who has access to trade secrets. Each employee has to confirm in writing that they are familiar with the rules for working with documents and information that constitutes a trade secret and responsibility for their violations.

Risks Associated with Terrorist Activities

The danger of investing funds by terrorists lies in the fact that when this group of crimes is committed, borders are erased, the terrorist is depersonalized, electronic funds can be transferred in an unlimited amount to the accounts of borrowers through the operators' platform, which increases the latency of these acts. It is hard to identify the source of funds (Alyokhin & Medvedev, 2008).

Article 5 of Federal Law No. 115 of 07.08.2001 "On Countering the Legalization (Laundering) of Proceeds from Crime and the Financing of Terrorism" provides a list of organizations that carry out operations with money or other property. Microfinance organizations have the right to identify their clients (Gvozdeva & Romanova, 2016), while mutual lending operators lack such an opportunity.

We suggest that the following measures should be taken: It is necessary to allow sites to identify their users.

Risks Associated with the Dissolution of the Operator

In case the platform operator dissolves (Article 57 of the Federal Law of 08.02.1998 N 14 "On Limited Liability Companies") or goes bankrupt (Federal Law "On Insolvency (Bankruptcy)" from 26.10.2002 N 127), it will be hard to protect investors, since there is no special regulation in this industry yet, accordingly, even though contracts have been concluded directly between the investor and the borrower, all actions take place on the operator's platform in automatic mode, where all customer data is stored.

We suggest the following measures: It is necessary to draw up a Guide in case of the platform's insolvency, which should specify options in case the platform dissolves. In this case, one should use the experience of regulating the issue in the UK (Verret, 2016; Zhang et al., 2016). If, as a result of the dissolution, the p2p agreement administration services

are transferred to another company, the prior consent of the borrower and the investor is needed.

In particular, one has to clarify the possible options for the platform in case it dissolves:

1. concluding an agreement with another company on transiting to managing and administering p2p agreements, if the operator (platform) stops the work of the electronic system and ceases lending; or
2. there is sufficient collateral in a separate account to cover the management and administration costs; or
3. entering into an agreement with another company that would act as a guarantor for p2p agreements that include a legally binding obligation to fully cover the costs of the guarantee; or
4. managing the loan portfolio in such a way that the income from P2P agreements concluded through the operator is sufficient to cover the costs of managing and administering these agreements when the company dissolves, taking into account the shrinking loan pool and commission fees.

The P2P agreement administration services cannot be transferred to another company without the prior clients' consent.

Risks Associated with Financial Pyramids and Associated Measures

There is a risk of organizing financial pyramids (Federal Law No. 78 of 30.03.2016 "On Amendments to the Criminal Code of the Russian Federation and Article 151 of the Criminal Procedure Code of the Russian Federation") (Uvarova, 2019). Despite all the advantages of crowdfunding (the main ones include using the free capital of a wide range of investors, accessibility, speed, and high returns), there are known cases of abuse. As such, we can name the spread of pyramid investment schemes in China along with the development of p2p lending.

The risks associated with the pyramids have already arisen, not only abroad (Kovacic, 2018) but also in Russia.

Those who invest often lack the financial literacy to participate in new alternative earning mechanisms, but despite the negative experience, the investor's memory is very short. Only recently, more than one case

of pyramids in the field of mutual lending has been identified, when investors were promised high returns—600% or more per annum. The entire Chinese p2p lending market has suffered from financial pyramids, and therefore the number of operators is currently sharply reduced, in particular, due to several restrictions adopted by the regulator. If we take Russia, a striking example of such a pyramid was the "Cashberry" company (Lyakh, 2018), which assumed an air of a p2p platform (mutual lending service) (Uvarova, 2019).

In order to prevent financial pyramids in the field of mutual lending from emerging, we proposed to take the following measures:

1. Qualify investors so that only competent ones could invest, and others have to be trained before investing (Uvarova, 2019).
2. Take control over the companies that attract public funds to their balance sheet in any organizational and legal form. Charge those who raise funds with greater responsibility, allow raising funds only to a nominal account or directly to the accounts and electronic wallets of individuals (Uvarova, 2019).
3. Create a "black" list of legal entities, individuals, and related persons who were in a single chain with the organizers of such financial pyramids, and prohibit them from engaging in any financial activity for life (Uvarova, 2019).
4. License mutual credit operators. The Central Bank of the Russian Federation should be given the authority to stop the activities of such pyramids and the tools to directly contact the Federal Supervision Agency for Information Technologies and Communications to block fraud sites (Uvarova, 2019).

For example, in the case of Cashbury, which took an air of a p2p platform (mutual lending service), the Central Bank of the Russian Federation could only complain to the Prosecutor General's Office and the Ministry of Internal Affairs, since the company did not have a license from the regulator, so the Central Bank could not block them. As a result, the prosecutor's office filed a lawsuit, Federal Supervision Agency for Information Technologies and Communications blocked their website, and the total time spent on banning the pyramid increased. During this time, the pyramid managed to collect even more money from the deceived depositors.

5. Oblige the operators of mutual lending to obtain certificates for their websites through which mutual lending transactions are carried out (Uvarova, 2019).
6. Provide the tools of the Central Bank for marking the Internet sites of the companies that call themselves mutual credit systems, if they have adequate certification.[5]
7. Prohibit any advertising of controversial projects that are not mutual credit systems (Uvarova, 2019).

Adopting the proposed measures will increase confidence in mutual lending (crowdlending) as an alternative way to attract investment from the population, as well as to prevent pyramids from emerging (Uvarova, 2019).

Additional measures are proposed to minimize the emerging risks:

1. Diversify the investor's portfolio (funds);
2. Divide the investor's funds between several borrowers;
3. Use a reliable platform scoring system;
4. Transfer the investor's funds directly to the borrower, bypassing the platform operator;
5. Check the potential borrowers and investors through the databases of credit bureaus;
6. The operator builds a security system for its website.

Discussion

COVID-19 has identified some existing problems in the field of mutual lending relations between individuals. This analysis allowed us to take a deeper look at the existing risks and suggest possible ways to minimize them.

There are the following main groups of risks in the field of consumer mutual lending:

– risks associated with the protection of personal data;

[5] The Bank of Russia has launched a project to mark MFIs on the Internet. [Electronic resource]//Official website of the Central Bank of the Russian Federation.—Access mode: https://www.cbr.ru/press/event/?id=1180 (accessed 19.03.2019).

- risks associated with identification;
- risks associated with fraudulent activities;
- commercial risks for the operator;
- risks associated with terrorist activities;
- risks associated with the dissolution of the operator;
- risks associated with pyramids.

Further study of consumer mutual lending relations during the COVID-19 pandemic will allow us to identify new risks that arise in the context of a changed reality and suggest measures that will increase confidence in mutual lending (crowdlending) as an alternative way to attract investment from the population, as well as to prevent fraudsters and pyramids from appearing (Uvarova, 2019).

Going deeper into the practical significance of the results obtained, it is important to emphasize that the conclusions can be used in legislative activities aimed at improving Russian civil legislation.

This work can help operators to develop the rules of the platform, build their relationships with borrowers and investors. Besides, the results of this work can be used when creating financial and legal training courses for the population.

Conclusion

All things considered, a special legislative framework has been developed in Russia. It regulates the relations of consumer mutual lending. In the absence of the necessary legal framework, in particular, a legally established conceptual apparatus, the definition of the range of subjects of consumer mutual lending relations, their rights and obligations, mechanisms of interaction, state regulation of consumer mutual lending activities will be ineffective.

Several effective legal measures and mechanisms are proposed; they can minimize the existing risks, especially in the context of a pandemic and post-COVID economic development, and will increase interest and confidence in this area, the priority of which is, in particular, to create a register of operators of mutual lending between individuals and the provision of tools for marking the Internet sites of organizations that will be used by the Central Bank of Russia, introduce a mechanism for the qualifying investors, as well as certifying the Internet site through which transactions for mutual lending transactions are carried out (Uvarova, 2019).

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CHAPTER 26

Post-COVID Statehood

Vladimir S. Osipov

Introduction

The period of the pandemic turned out to be very remarkable from the standpoint of studying the nature of the state as an institution of institutions (Hauriou, 1910). In the difficult period of the plague of 1346–1353, the state was forced to assume extraordinary powers to regulate legal relations, including in terms of limiting the rights and freedoms of citizens. It also noted the eviction of infected people outside the city, restrictions on entry into the city, quarantines of ships, maintenance of social distance at the suggestion of the Italian doctor Gentile da Foligno (Henderson, 1992). That is, formally, the pandemic causes a natural need to strengthen the role of the state in regulating legal relations. It is important to note that, according to the principle of separation of powers into executive, legislative, and judicial, they are formally equal and independent from each other in order to establish a sustainable political regime in the state. The chapter provides an institutional legal analysis of the behavior of state institutions during a pandemic and

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a Post-COVID period of economic revival. Thus, it shows the strengthening of the role of the executive branch in the waning of the legislative and judicial branches. The study provides arguments for and against such a situation in the state. Particular attention is paid to the growing power of medical control bodies, as well as the weakening of human rights, even their direct violation, contrary to constitutional provisions.

Methodology

We use the methodology of institutional analysis, as well as the institutional method developed by us in the legal science of state studies. Removing the ideological taint of positivism and jusnaturalism from the science of the theory of state and law allows using the institutional method of legal science to show the structural and functional inconsistency, the artificiality of the combination of two sciences—science of statehood and jurisprudence—the theory of state and state building, and the theory of law. The separation of the general theory of state and law can give new impetus to the development of both legal sciences, since the "pure" theories of law and the state will turn out to be unchained by the ideological framework of each other. The difference in the positive prescription and real implementation of the rule of law and social norms, the normative and actual scope of the rights and obligations of actors and institutions, the complementarity of procedures can be determined using the institutional method of legal science of state studies. The institutional method of legal science reveals the procedures that contribute to the embeddedness of the imbalance of power in its branches, which has become especially brightly revealed in our time with the strengthening of the executive power. Hence, the possible abuse of power by the executive authorities and their representatives, since the procedural executive power turned out to be "stronger" than the judicial and legislative branches of power. The ingrained habit of having a "strong" head of executive power contributes to the development of vetocracy in authoritarian regimes (Osipov, 2021a, 2021b).

It should be noted that the institutional method of state science is developed by us on the basis of methods, techniques that were originally developed by representatives of non-legal sciences, and, therefore, the institutional method of state science should be attributed to the group of special methods of research. In addition, we adhere to a sociological understanding of law following the logic of E. Erhlich (1913), who

believed that the rules of law are applied not because the state prescribes and sanctions them, but because they are embedded in the relations between actors. Social law consists of norms that are implemented in reality. The reality of the pandemic and the Post-COVID economic revival is far from the ideals of the rule of law, where human rights are not only a sacred value, but also strictly implemented.

Results

Statistics and convincing arguments for strengthening the role of the state in the US economy are given by R. Higgs (1987). The author shows on the centenary statistical trend how the state strengthened its role in the economy during periods of economic crises. It turns out that the government almost always deepens its participation in economic processes and regulation of legal relations between economic actors, but does not reduce it during periods of economic revival. Thus, the passage of several economic cycles over a century-old period gives grounds to assert that several complete economic cycles lead to an excessive increase in government intervention in the economy, which becomes the main reason for a new economic crisis. This opinion is supported by J. Stiglitz (1988).

Crisis phenomena contribute to the growth of voters' demands to take measures to rectify the situation, which, naturally, leads to the expansion of the state's powers and its invasion of those areas in which the state did not previously participate as an active player.

Even Pareto (1921) pointed out that in October 1921, Lloyd George said that to combat the current crisis, the government can choose one of two ways: either to leave everything to the effect of economic laws or to actively intervene and start managing socio-economic processes. He chose the second path, which ultimately only exacerbated the evil of the economic depression.

The states with an established market economy managed to get used to the situation of the classic economic crisis, its consequences in the form of bankruptcy of enterprises, growth of unemployment, and loss of trust between economic actors, since periods of recession here are short, while periods of prosperity can last for years.

Emerging market countries have to cope with the opposite situation—long periods of recession and short periods of revival. Accordingly, political cycles and elections are influenced by the quality of the government's economic policy. Failure to quickly take effective measures to mitigate

the effects of recessions leads to the power of populists or nationalists. This has been demonstrated many times during the twentieth-twenty-first centuries in Italy, Germany, Greece, Spain, a number of Latin American countries, and others. It should be noted that state intervention in the economy, for example, in the United States during the Great Depression, is not considered by all scientists as a saving measure. M. Rothbard (2005) argues that the United States exit from a deep recession was not due to the actions of the government, but in spite of all its actions.

In general, the economic crisis of 2020 was only a consequence of the onset of a pandemic. It means, that if the pandemic had not come, this economic crisis might not have happened at all. Hence, it becomes necessary to determine the specificity of the pandemic and Post-COVID periods.

First, the widespread reduction in social spending, including on health care, attempts to transfer medical services to the market segment, as suggested by some authors: Le Grand (2007), Barber (2007), Coulter (2002), and Enthoven (2002). The fallacy of this approach was just revealed when the reformed healthcare systems of many countries were unable to provide medical care to all those in need. Von Hayek (2002), offering an assessment of the quality of the government's economic policy, noted that no matter how strange it may seem at first glance, a high rate of economic growth often speaks not so much of a good policy of the current government as of a bad policy of the past. It follows that the achievements of the government are not always the merit of this particular government. This fully applies to the Post-COVID economic revival, as the poor health policies of past governments have led to significant human suffering as well as an economic crisis.

The policies of current governments are almost universally associated with increasing funding for health care, medical studies, the search for new drugs and vaccines, and research into possible variants of virus mutations. Assessing the actions of the governments of almost all countries in the world in a pandemic, the following general measures should be highlighted:

- lockdown for business and public organizations;
- urgent rapid construction of hospitals and their organization in previously unsuitable places for this;
- strengthening control over the movement of the population and in some cases direct bans on movement;

- closure of national and intrastate interregional borders, establishment of sanitary cordons;
- disinfection of streets and public places with anti-virus liquids;
- control of the temperature of citizens when they visit crowded places;
- bans on any meetings of people; and
- widespread promotion of protective equipment and the need to comply with quarantine measures.

If we look at these measures from the standpoint of the principle of separation of powers, it turns out that the only executive branch became functioning power at the pandemic. The legislature was poorly represented in the political life due to remote access to meetings; its role was mainly limited to approving measures taken by the executive branch.

The elections to legislative bodies, if they did take place, were mainly according to a truncated program, that is, without extensive debates, meetings, etc. For example, in Russia, in 2020, a plebiscite was held on amendments to the country's Constitution. All quarantine measures were observed, polling stations were processed, personal protective equipment was applied. Even the control function of the legislature over the executive was greatly weakened both by the impossibility of ensuring full-fledged proceedings, collecting evidence, interviewing stakeholders, etc., and by the need to maintain social distance. In addition, the legislature did not seek to obstruct the executive branches because of pandemic.

The judiciary, by virtue of the lockdown, in principle turned out to be practically paralyzed, since no court sessions are possible without the personal presence of the plaintiffs, defendants, their representatives, the accused, or the prosecutor. Since personal presence was prohibited, the judicial authorities had to either consider cases in the absence of interested persons (a system of electronic submission of documents to the courts was urgently introduced) or postpone the sessions to a later date. The result of the decision was an extremely high workload on judges in the Post-COVID period, since it is necessary to consider not only current cases, but also those previously postponed due to COVID-19.

How did the executive branch behave as a result of the actual stoppage of the mechanism of separation of powers, which is the basis of a democratic regime? It should be noted that in most countries, the executive branch took the political opportunity to demonstrate to the public a responsible approach to problem solving. Even in situations where the

governments of some countries could not provide their populations with personal protective equipment, they resorted to the help of other countries, which was rather difficult in the face of border closures. Value chains disruptions ensured a shortage of certain goods and an increase in prices for them, which required protectionist measures from the authorities to establish their own industries within the framework of national jurisdiction. We do not intend to deny the positive role of the state as an institution, as is sometimes seen in some ultra-liberal works (Anderson, 2004; Forbes & Ames, 2012; Friedman, 2014; Friedman & Kraus, 2011; Henderson, 2002; Irwin, 1996; Stedman Jones, 2012) and, rather, we adhere to that opinions that the state is not only not evil, but also represents the most necessary and beneficial institution, without which the development and preservation of sustainable social cooperation and civilization are impossible (von Mises, 1978). The state is necessary if only because the free market could not ensure the rapid mobilization of society to fight the pandemic, although China and, in part, Russia, did it. Countries that preach private medicine and the free market are faced with huge masses of infected citizens requiring immediate medical care. The Chinese method of combating the pandemic has demonstrated the highest efficiency, but at the same time, it was here that the state behaved the most severely in relation to the pandemic and the possible ways of its spread throughout the country. Saved lives and recovered citizens are the most important positive argument in favor of a strong state during a pandemic, and therefore in a period of Post-COVID economic revival, since without the help of the state and its budget investments, business will not be able to recover from the lockdown, bankruptcies, non-payments and chain's disruptions.

Discussions

The State as Post-COVID Economic Revival's Actor

Thus, the globalized epidemic process dictates the convergence of the biological and socio-economic foundations of life on the planet. The socio-economic Post-COVID economic revival will be closely linked to the biological basis for the development of viruses and infections, which is simply impossible to sweep away. Obviously, globalization has made viruses our most unwanted but planetary neighbors. Socio-economic development must consider the risk of the emergence or development

of viruses and infections as the highest, the consequences of which can be lockdowns, bankruptcies, disruptions in value chains, shortages of medicines, and health services. It could be said that before globalization the epidemic process did not always (not often) acquire a pandemic character, however, thanks to globalization, now any infectious or viral disease will acquire a pandemic character, covering the entire population of the planet. Another important law of the Post-COVID economic revival is the need to maintain a high level of healthcare costs, including the costs associated with the rapid mobilization of hospitals, medical specialists, evacuation services, medical research organizations, etc.

The systemic organization of the epidemic process requires from the state, business, and society, on the one hand, solidarity and vigilance, and on the other hand, the willingness to sacrifice the rights to assembly, freedom of expression, and protests. Social distance becomes an insurmountable factor for the realization of these basic elements of human rights. Hence, there is a significant political risk associated with the natural desire of the state to use the pandemic situation to suppress dissidents, disperse socially politicized groups of citizens who put forward certain demands. The examples of Germany, France, Spain, Great Britain, the United States, and Russia show that it does not matter what political regime is established in a country in order to use the pandemic as the basis for a political decision.

Finally, the ubiquity of infections and viruses will obviously lead to their constant circulation and mutation. This gives rise to a pathogenic risk, which will have to be taken into account by states, businesses, and society in the Post-COVID economic revival period.

The main socio-economic factors of the global epidemic process include:

- high mortality rate of the population, provided that there is no correlation with age (it is already difficult to say which population groups are at greater risk—the elderly, children, or the adult population);
- significant consequences of the transferred disease (dysfunction of the human body);
- due to the inelastic demand for the price of medicines and health services, an increase in the incomes of the rich and the poor should be expected; an increase in poverty and misery will be one of the consequences of the pandemic; possible social upheavals due to social inequality;

- the adjustment of the sustainable development goals becomes obvious, since neither financial nor organizational resources spent on their achievement are completely insufficient in the context of the global pandemic process;
- an offensive of an epidemic or bio-dictatorship (Foucault, 1997) along with a Post-COVID economic revival, when human and civil rights, the rule of law can be sacrificed, including to save the lives of citizens;
- strengthening the power of the state in the sphere of control over citizens, since vital drugs and medical services may not be delivered to individual citizens, causing fears of the authorities or calling for social upheavals in the country (e.g., opposition leaders). We should note that Agnès Callamard from Amnesty International already declared that the global pandemic has exposed the terrible legacy of deliberately divisive and destructive policies that have perpetuated inequality, discrimination and oppression and paved the way for the devastation wrought by COVID-19 (Amnesty International, 2021).

It is important to note that the Post-COVID economic revival will be characterized by lost illusions (Balzac, 1876) due to the curability of viruses and infections by highly effective laboratory methods of diagnosis and treatment, the creation and widespread introduction of effective antiviral drugs, vaccines, and immunotherapy. It turned out that all these achievements of the past (before COVID-19 pandemic) health care may be powerless for mutating viruses and infections.

The spread of COVID-19 was facilitated by wealthy citizens who travel a lot around the world, but they were also able to recover from this disease relatively quickly, again having savings for this. The less wealthy citizens who were infected by COVID-19 were more affected by the new virus due to the lack of money for treatment and even detection of the COVID-19.

Summarizing the opinions of medical authoritative scientists, we can conclude that the driving forces of the evolution of the epidemic process are changes in the social conditions of human life and society as a whole (Aschengrau & Seage, 2020; Cherkassky, 2008; da Silva et al., 2018; Gromashevsky, 1949; Krickeberg et al., 2019; Kurstak & Hossain, 1990; Volovskaya, 1984).

Hence follows an important conclusion, which served as the basis for this book, that the socio-economic activities of people, inequality

in incomes, rights, and access to health services, the rapid development and overpopulation of megacities, and the concentration of the planetary population in the largest agglomerations of several tens of millions of people, technological orders, will have a significant impact on the trends in the evolution of viruses and the realization of pandemic risks on a planetary scale.

As E. Thacker (2005) correctly notes, the most remarkable abilities of new pathogens are their rapid mutation, the ability to cross interspecies barriers (human-animal, human–human), as well as the ability to spread by modern means of transport (airplanes and cargo ships). Hence, the rate of spread of infections on a planetary scale already in 2003 was only 6 months. It is interesting that computerization and digitalization could only state the spread of viruses by quickly collecting information about those infected, and in fact, to play a role as registrars of cases of diseases.

These tendencies forced the authorities of majority states to organize biopolitical decision-making and emergency action systems, which turned out to be stronger than law, logic, and common sense. In fact, we can say that COVID-19 forced the authorities to continue the previously started fight against bioterrorism, but already against the spread of the COVID-19 virus; however, the funds remained the same: tightening control over citizens, their movement, transportation of biomaterials, installation of security cameras with temperature sensors, accelerated and enhanced funding for medical research. Redirecting funding from the operational level of healthcare management to the strategic one is becoming an important priority of the Post-COVID economic revival, since it is proactive, research, and mobilization operations that become the object of priority funding.

Summarizing up this section, we consider it necessary to turn to the work of M. Foucault (2000), who noted that the era of biopolitics is coming, when goals are set in relation to collectives using government tools, as well as health and statistics, and political economy. The discipline technique focuses on the body, influencing individuals, manipulating bodies as centers of power in order to make bodies both useful and obedient … technology deals with bodies placed in massive biological processes … Foucault identifies three elements of biopolitics, and each should be commented on from the standpoint of the Post-COVID economic revival and the role of the state in it. Thus, health care and statistics together enable population control through the law of large numbers, life tables (Armitage & Berry, 1987). The instruments of

public administration determine, according to Foucault, the possibilities of "gouvernementalité"—the governmentality of society, that is, it supplies the infrastructure of administration, organization, planning, coordination, and control. Political economy makes it possible to assess the wealth of a society through the mercantilist view that it is determined by the health of the nation (Malinovsky et al., 2021; Osina et al., 2021).

The Business and Its Role in Post-COVID Economic Revival

Among the previously mentioned risks for business, one can single out the risks of lockdowns, bankruptcies, and disruptions of value chains, when contractual relations with counterparties are always at the point of a possible break due to circumstances beyond the control of the parties. Doing business in such environment is accompanied by a sharp increase in transaction costs, and, consequently, an increase in prices for consumers. In addition, the risk of slow recovery of destroyed value chains remains, which will obviously lead to local shortages of certain goods in certain regions. So, in March 2021, it became known that there was a shortage of chips for computers ("chipageddon") in the world market due to the disruption of value chains and an increase in transportation costs. Chip companies have already announced a 10% increase in prices due to a shortage.[1] Considering the role of chips in digitalization and robotization of business processes, we can say that this risk for business can become critical.

Private research medical institutes and laboratories, as the beginning of the pandemic has already shown, will devote all their efforts and resources to the search for new vaccines and drugs, simultaneously trying to defeat the onset of the virus and its future mutations. In the short-term period of Post-COVID economic revival, pharmaceutical companies and medical research centers, having gained competence in the high-speed invention of vaccines and drugs against COVID-19, will increase their potential for the development of other drugs, not only against infections, viruses, but also against other diseases. In fact, the pandemic changed the architecture of the pharmaceutical market, forcing companies to invent, test, and bring new drugs to market faster, which was quite difficult to do before the pandemic, since pharmaceutical companies were directly interested in the

[1] https://www.bbc.com/news/technology-55936011.

return on investment and profit from old drugs and were in no hurry to withdraw new to the market. Now the speed has changed, and with it the architecture of the market has changed, as it turned out that some countries are more agile than the largest pharmaceutical giants.

Nevertheless, in the long-term post-pandemic period, the patent risk will become an important one for the medical research business, since research organizations that have received patents (note that the pandemic is contributing to the growth of patent applications) for their inventions may be deprived of them due to extraordinary circumstances and permission from the authorities to produce generics contrary to patent protection. This patent risk could undermine the established system for the development and marketing of drugs and vaccines, as there is no incentive to R&D. Consequently, the change in the architecture of this market will acquire a large-scale character. Funding for drug and vaccine R&D can be attributed to government spending as a public good.

Replacing private investments with budgetary ones in this area can lead to the following consequences:

- growth of financing volumes all over the world;
- decrease in the efficiency of spending funds due to corruption and other dysfunctions of public administration;
- decrease in the quality of medicines and vaccines due to the previous point;
- gradual withdrawal of private research centers from this market; however, there will obviously remain private laboratories of transnational corporations to search for rescue equipment and resell them to states.

Disruptions in value chains in some sectors of the economy turned out to be fatal, for example, tourism, those industries that are closely related to components from China, since communication between countries was physically severed. The pandemic paralyzed the international division of labor through physical lockdowns of enterprises embedded in long value chains, as well as bankruptcy of some of them and natural loss from supply chains. Here we will observe the risk of a shortage of certain goods and an increase in prices for them, but gradually, with the lifting of quarantine measures, and also due to the establishment of local production in the long term, the saturation of markets with goods will continue.

Society and Its Place in Post-COVID Economic Revival

However, another risk here is the low purchasing power of the people, in which some of them have lost their jobs both due to robotization and digitalization, and due to bankruptcies and lockdowns. It is unlikely that state benefits will allow ordinary citizens to lead the same way of life. The theory of basic income (Frey & Osborne, 2013; Standing, 2008; Usman, 2017; Van Parijs & Vanderborght, 2017) under the influence of Post-COVID economic revival and in connection with the redistribution of reduced government budgets looks increasingly utopian. Consequently, society will be forced to solve its own problems related to the provision of well-being. Here we can predict a decline in the income of the middle class, since after bankruptcies or recessions, the middle class usually find new jobs in a lower position with lower income (Ford, 2015; Jaimovich & Siu, 2012).

The sharp and rapid stratification of society into rich and poor with a shrinking middle class carries the risk of growing political demands to change the situation. There is the most critical risk of radicalization of society, social upheaval, and revolution we can forecast. Another important component of the Post-COVID economic revival is the globalization of the labor market through remote employee access. An increase in the proportion of employees working remotely will lead to an increase in the supply of labor in local markets, and, therefore, competition between potential employees here will be for the price of labor, since it will be quite easy for a business to hire an employee for the same position from a country with lower average incomes. Thus, business will be able to reduce its costs of living labor, and the average income in highly developed countries will have to go down, and in underdeveloped countries, on the contrary, rise.

A particularly worrisome trend for society should be the undulating way of spreading the coronavirus. In many countries, there is already a third wave, and the virus itself is actively mutating, which is becoming a significant threat for society.

Conclusions

The development of vaccines in different countries has led to competition for markets. The main argument in favor of this or that vaccine, of course, should be its proven effectiveness. However, political influence also turns

out to be a factor in choosing a particular vaccine. The main competitors in this market were the United States, Germany, Austria, Great Britain, China, and Russia. Some countries were unhappy with the terms of supply of vaccines and began their own development, which is very likely to be just as effective. Thus, France and Italy are acting in this direction. Political differences between countries and political risks of making decisions on the purchase of a particular vaccine turn out to be significant factors in saving people from the coronavirus. We can conclude that there is an external political risk in this situation. But the internal political risk of individual national jurisdictions also matters. So, it is obvious that additional administrative weight and power, and hence funding and powers, will be received by the sanitary and epidemiological services. Their power can be strengthened by increasing their apparatus weight and power to authorize or prohibit certain actions of citizens, economic actors, and government agencies. Here we should turn to Niskanen's theory (Niskanen, 1971, 2003). He suggested that the production function of a state body can only be known to the state body itself, i.e., only the department itself knows how the financial resources allocated for its activities are converted into results of activities (Osipov, 2016). In this contest, the budget, the power, and authority of the sanitary and epidemiological services.

Due to the shift in focus to coronavirus patients, other patients with chronic diseases have found themselves limited in attention due to the reorientation of hospitals and doctors to COVID hospitals and staff. There have been interruptions in drugs that were previously used, for example, for the treatment of HIV patients, but which were switched to COVID patients. The diversion of doctors' attention to COVID patients led to a decrease in attention to chronic patients (cancer patients, people on dialysis, etc.) (Osipov & Skryl, 2021).

The United States has shown an example of solving the problems of a Post-COVID economic revival. US President Biden details $2 Trillion Infrastructure Plan.[2] "It is not a plan that tinkers around the edges," President Biden said of his proposal to fix aging bridges, roads, rail lines, and utilities. He wants to pay for it by raising the corporate tax rate to 28%, from 21%. Increasing the corporate taxes to raise additional budgetary funds and turn them into infrastructure investments—isn't this a concrete solution to the problems of economic recovery in the spirit of

[2] https://www.nytimes.com/live/2021/03/31/us/biden-news-today.

neo-Keynesian economic recipes? This example should be heard by the governments of all countries, since it is precisely such a measure that, we are sure, will help the United States to quickly overcome the economic coronacrisis and achieve sustainable rates of economic growth through budget investments into infrastructure, which, as it is well known, will entail private new industries, new jobs, and economic revival.

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