Rym Ayadi · Marek Dabrowski
Luc De Wulf *Editors*

Economic and Social Development of the Southern and Eastern Mediterranean Countries

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Preface

This volume contains a selection of research output from the EU Seventh Framework Program's Collaborative Project on 'Prospective Analysis for the Mediterranean Region,' which was funded by the European Commission – Directorate General for Research and Innovation – Unit L Science, Economy and Society under the Grant Agreement No. 244578-FP7-SSH-2009-AEU.

The Mediterranean Prospects (MEDPRO) project was carried out by a consortium of 17 reputable institutes and universities from the EU and SEMC coordinated by the Center for European Policy Studies (CEPS) in Brussels. The consortium partners included the Center for Social and Economic Research (CASE) in Warsaw, the Center for European Economic Research (ZEW) in Mannheim, the Cyprus Center for European and International Affairs in Nicosia, the European Institute of the Mediterranean (IEMed) in Barcelona, the Faculty of Economics and Political Sciences at Cairo University, the Fondazione Eni Enrico Mattei (FEEM) in Milan, le Forum Euro-Méditerranéen des Instituts de Sciences Economiques (FEMISE) in Marseille, L'Institut Marocain des Relations Internationales (IMRI) in Casablanca, the Institute of Computers and Communications Systems-E3M Lab of the National Technical University of Athens, the Institute of International Affairs in Rome, the Institute of Studies for the Integration of Systems (ISIS) in Rome, the Mediterranean Agronomic Institute of Bari, the Netherlands Interdisciplinary Demographic Institute (NIDI) in the Hague, the Palestine Economic and Policy Research Institute (MAS) in Ramallah, the Polytechnic University of Madrid (UPM), and the Tunisian Institute of Competitiveness and Quantitative Economics (ITECQ) in Tunis.

The main objective of the MEDPRO project was to produce a set of scenarios of political and socio-economic development in the Euro-Mediterranean region. The findings aim to contribute to the reform process in the political, economic and social agendas by broadening the level of knowledge on the interplay among the diverse set of challenges and to provide deep insights into the prospected policy options and their outcomes.

MEDPRO sought to deliver the best available scientific underpinning for future policy decisions both domestically and at the EU level within the Euro-Mediterranean framework in the post–Arab Spring era.

In particular, MEDPRO analyzed the major development challenges that the SEMC will face in the coming decades (primarily until 2030) such as economic reforms, trade liberalization, the modernization of financial markets, an upgrade of infrastructure, a more prudent management of natural resources (economically and environmentally), a decrease in poverty and inequality, the eradication of illiteracy, an overhaul of the education system and equal access of boys and girls to education, the elimination of other forms of female discrimination, the reform of labor markets to reduce chronic unemployment (especially for youth), better access to water and sanitation, climate warming mitigation and adaptation, further improvement of health standards and many other policy targets. On the institutional and political front, the task is to undertake these policy objectives while building democratic states which will apply the rule of law and respect civil rights and freedoms without contradicting the dominant cultural and religious tradition in the region.

The MEDPRO project covered 11 SEMC: Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, Tunisia and Turkey. Ten of them are EU partners under the so-called Barcelona Process, the ENP and UfM, and Turkey has EU candidate status and has entered into a CU with the EU.

The MEDPRO research agenda covered seven thematic areas that were highly relevant for the socio-economic development of the region:

- Geopolitics and governance, regional and international political challenges faced by the SEMC in a global context
- Demography and ageing
- Human capital, social protection, inequality and migration
- Management of environment and natural resources
- Energy and climate change mitigation
- Economic development, trade, investment and key sector analyses
- Financial services and capital markets

The period of implementation of the MEDPRO project (March 2010–February 2013) coincided with major political developments in the region, i.e., the Arab uprising (also called the Arab Spring), which directly affected several countries (Tunisia, Egypt, Libya, and Syria), while others have had to deal with various indirect consequences and spillovers as well as growing economic and political uncertainty.

Unfortunately, as of mid-2014, the collapse of the previous autocratic regimes has not led to the establishment of viable democratic regimes able to ensure elementary political stability and responsible economic management. Tunisia is perhaps the only exception as it has managed to maintain relative political stability and a democratic form of government. It started to implement the economic reform program supported by the IMF stand-by loan in June 2013. In January 2014, the National Assembly approved the new constitution, which gave Tunisia a chance to complete its political transition from dictatorship to liberal democracy.

The situation in other countries is much worse. Egypt and Libya continue to struggle with domestic political instability, deep splits of their societies along sectarian, regional, ideological and cultural lines, and tribal insurrections.

In Egypt, after a brief period where the democratically elected government of the Muslim Brotherhood failed to respond to the Egyptian population's basic needs, a military intervention backed by strong popular support led to the introduction of a new regime largely anchored in the military apparatus in 2013. While any assessment as of the date of the publication of this book is a mere speculation, the political transition in Egypt is shadowed by uncertainties. All of these developments have had a negative impact on business activity, investment, and incoming tourism.

Syria is experiencing its fourth year of bloody civil war with no prospects of a rapid resolution. The country is in fact territorially divided between pro-government forces and rebels with various ideological, sectarian and political profiles. The negative economic and political consequences of this conflict include a large number of internally displaced people and refugees, blocked transit routes, declining tourism, and dwindling FDI flows. These have affected neighboring countries, especially Lebanon, Jordan, and Turkey. Similarly, the civil war in Libya in 2011 and the subsequent domestic instability has largely affected neighboring Tunisia and Egypt.

Overall, 3 years after the beginning of the Arab Spring the process of political and economic transition is far from complete, which has negative consequences for the entire region (with the exceptions of Morocco and Israel). In Morocco, political and economic reforms are seemingly underway without any severe political and economic disruptions. In this context, the questions on how to successfully manage such a complex transition and how the experience of other regions can inform the next steps that would restore economic growth and lead to greater regional prosperity remain unanswered as of yet.

The Arab Spring–related developments led to a certain modification and update of the original MEDPRO agenda and added new interesting topics of research. However, most of analyses presented in this book reflect economic and social developments and use statistical data from before the Arab Spring. Whenever possible, we have tried to provide at least partial updates. However, one must be aware of data constraints related to the post-2010 period, especially in the countries most affected by violent conflicts (Syria and Libya).

The volume includes a selection of analytical papers produced under three thematic areas of the MEDPRO project: economic development, trade, and investment (Work package 5) coordinated by Luc De Wulf (CASE); financial services and capital markets (Work package 6) coordinated by Rym Ayadi (CEPS); and human capital, social protection, inequality, and migration (Work package 7) coordinated by Alia El Mahdi (Cairo University), with a strong focus on the potential of the region's cooperation with the EU. In this way, the book provides important historic background and analyses of the economic, financial, and social development of the SEMC and their economic relations with the EU. Better knowledge of this background and recent trends is crucial for understanding the development options for the region and designing their future possible scenarios. Details of these prospective quantitative scenarios that were produced under the MEDPRO project are the subject of another book.

The book is divided into five thematic blocks and 20 chapters. Part I contains five chapters on economic development, trade, and investment. In Chap. 1, Leonor Coutinho analyzes determinants of economic growth in the SEMC. In Chap. 2, Ahmed F. Ghoneim and Nicolas Péridy discuss the existing trade barriers in the region (mostly due to NTM and poor trade logistics) and the possible trade expansion that would follow trade liberalization – a reduction of tariffs and NTM, both between the EU and the SEMC, and among the SEMC themselves. Trade policy is also the subject of Chaps. 3 and 4. In Chap. 3, Subidey Togan presents the experience of the EU-Turkey CU as a potential model for other SEMC to follow. In Chap. 4, Khalid Sekkat analyzes the determinants of manufactured exports and FDI. This analysis is supplemented by Chap. 5 on private sector development coauthored by Rick Woodward and Mehdi Safavi.

The Part II is devoted to five studies of sectors of major importance for the economies of the SEMC: transport (Chap. 6 by Robin Carruthers), agriculture (Chap. 7 by Saad Belghazi), tourism (Chap. 8 by Robert Lanquar), the textile industry (Chap. 9 by Christiane Haberl), and ICT infrastructure (Chap. 10 by Jawad J. Abbassi).

Financial sector development in the region is the subject of five chapters in Part III. It starts with determinants of financial sector development in Chap. 11 (coauthored by Rym Ayadi, Emrah Arbak, Sami Ben Naceur, and Willem Pieter De Groen). The same authors also study the impact of financial development and bank efficiency on economic growth (Chap. 14) and future scenarios of financial sector development in the Euro-Mediterranean area (Chap. 15). Barbara Casu and Alessandra Ferrari provide an analysis of bank efficiency in Chap. 12 and Rym Ayadi, Emrah Arbak, and Willem Pieter De Groen discuss the convergence of banking sector regulations in the Euro-Mediterranean area (Chap. 13).

Part IV deals with social development in the SEMC. Chapter 16 by Alia el Mahdi and Ola el Khawaga and Chap. 17 by Emrah Arbak are devoted to the problems of education and human capital and their impact on labor market performance. In Chap. 18, Heba El Laithy discusses sources of income and gender inequalities. In Chap. 19, Stella Tsani, Leonidas Paroussos, Costas Fragiadakis, Ioannis Charalambidis, and Pantelis Capros analyze the impact of female labor force participation on economic development in the region.

Finally, in Part V (Chap. 20), Rym Ayadi, Marek Dabrowski, and Luc De Wulf provide a summary overview of the economic, financial, and social reforms agenda in the region, including their potential support by the EU.

The contributions published in this volume are based on earlier, much larger versions of technical and policy reports prepared within the MEDPRO project and published on the MEDPRO website (http://www.medpro-foresight.eu/). They were, however, subject to substantial re-editing and updating in late 2013 and the first half of 2014, taking into account the most recent developments in the region.

The editors of this volume, who also acted as members of the MEDPRO Scientific Bureau (Rym Ayadi was the coordinator of the entire project), would like to express their gratitude to all participating institutes, researchers, and administrative staff. The editors would also like to especially acknowledge the role of the

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Needless to say, all of the views, opinions, and policy recommendations presented in this volume are those of the respective authors only and do not necessarily reflect the position of the project donor (European Commission), project institution participants, institutions which the authors have worked for or have been associated with, and other contributors to the MEDPRO project and this publication.

Brussels, Belgium — Rym Ayadi
Warsaw, Poland — Marek Dabrowski
Washington, DC — Luc De Wulf
July 18, 2014

List of Abbreviations

AA	Association Agreement
AAG	Arab Advisors Group
ACCA	Agreement on Conformity Assessment and Acceptance
ADSL	Asymmetric digital subscriber line
AMS	Aggregate Measure of Support
ANIMA	Mediterranean Investment Network
ARPM	Average revenue per minute
AUT	Arab Union for Tourism
AVE	Ad valorem tariff equivalent
BARI	Banking Activity Restrictiveness Index
BIC	Benefit incidence curve
bn	Billion
BRSS	Bank Regulation and Supervision Surveys
CA	Competition Authority
CCT	Common customs tariff
CEE	Central and Eastern Europe
CGE	Computable general equilibrium (model)
CIS	Commonwealth of Independent States
CLEA	Cruise Lines European Association
CLIA	Cruise Lines International Association
COMES	Common Market for Eastern and Southern Africa
CU	Custom Union
CUD	Customs Union Decision
DEA	Data envelopment analysis
DIS	Direct income support
DMO	Destinations marketing organizations
EAP	East Asia and Pacific
ECA	Europe and Central Asia
ECSC	European Coal and Steel Community
EEC	European Economic Community
EFTA	European Free Trade Association

EIB	European Investment Bank
ENP	European Neighborhood Policy
ETF	European Training Foundation
EU	European Union
EU15	All member states between 1 January 1995 and 30 April 2004
EU27	All member states of the EU since 2007
EU-MED	EU Mediterranean countries (Cyprus, France, Greece, Italy, Malta, Portugal, and Spain)
EUR	Euro
EVS	European Values Study
FAO	Food and Agriculture Organization
FD	Financial development
FDI	Foreign direct investment
FE	Fixed-effect
FEVD	Fixed-effects vector decomposition
FH PRI	Freedom House Political Rights Index
FO	Fiber optics
FSDB	Financial Structure Database
FSU	Former Soviet Union
FTA	Free Trade Agreement/s
GDP	Gross domestic product
GeGDI	Global e-Government Development Index
GEM	Global Entrepreneurship Monitor
GIC	Growth Incidence Curve
GII	Gender Inequality Index
GLS	Generalized least squares
GMM	Generalized method of moments
GSP	Generalized System of Preferences
GTAP	Global Trade Analysis Project
HBS	Household budget survey
HDI	Human Development Index
HDR	Human Development Report
HIECS	Household Income, Expenditure and Consumption Survey
HS	Harmonized System
ICRG	International Country Risk Guide
ICT	Information and telecommunication technologies
IFC	International Financial Corporation
IFS	International Financial Statistics
IHDI	Inequality-adjusted Human Development Index
ILD	International long distance
ILO	International Labor Organization
IMF	International Monetary Fund
IPR	Intellectual property rights
ISIC	International Standard Industrial Classification

ITC	International Trade Center
ITF	International Transport Forum
ITU	International Telecommunications Union
Kbps	Kilobyte per second
km	Kilometer/s
KSA	Kingdom of Saudi Arabia
LAC	Latin America and Caribbean
LIQ	Ratio of liquid liabilities to GDP
LPI	Logistics Performance Index
LR	Likelihood ratio (test)
MAP	Mediterranean Action Plan (Blue Plan)
MENA	Middle East and North Africa
META	Mediterranean Travel Association
MFA	Multi-Fiber Arrangement
MFN	Most-Favored Nation
Mn	Million
MNC	Multinational corporation
MoF	Ministry of Finance
MoJ	Ministry of Justice
MRA	Mutual recognition agreement/s
n.a.	Non available
NAFTA	North American Free Trade Agreement
NPL	Non-performing loan/s
NPR	Nominal protection rate
NTM	Non-tariff measures
OE	Oxford Economics
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary least squares (regression)
PAFTA	Pan-Arab Free Trade Area
PC	Personal computer
POLS	Pooled ordinary least squares (regression)
PPP	Purchasing power parity
PRS	Political Risk Services
QIZ	Qualifying Industrial Zones
R&D	Research and development
RE	Random effect
REER	Real effective exchange rate
ROO	Rules of origin
SA	South Asia
SEMC	Southern and Eastern Mediterranean Countries
SFA	Stochastic frontier analysis
SME	Small- and medium-size enterprise/s
SPS	Sanitary and phyto-sanitary (measures)
SSA	Sub-Saharan Africa

SWOT	Strengths, weaknesses, opportunities, and threats (analysis)
TBT	Technical barriers to trade
TEU	Twenty-foot equivalent unit
TFP	Total factor productivity
TGR	Technology gap ratio
TII	Telecommunication Infrastructure Index
TIMSS	Trends in International Mathematics and Science Study
TPI	Turkish Patent Institute
TRAINS	Trade Analysis and Information System
TRIPS	Trade Related Aspects of Intellectual Property Rights
TRQ	Tariff-rate quotas
TRY	Turkish (New) Lira
TSA	Tourism Satellite Accounting
TSHP	Two-step Heckman Procedure
TTCI	Travel and Tourism Competitiveness Index
TV	Television
UAE	United Arab Emirates
UfM	Union for Mediterranean
UK	United Kingdom
UMA	Union of Arab Maghreb
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nation Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNWTO	United Nations World Tourism Organization
US	United States (of America)
USD	United States dollar
VAR	Vector autoregressive regression
VAT	Value added tax
VECM	Vector error correction methodology
WB	World Bank
WBDB	World Bank Doing Business
WBGI	World Bank Governance Indicators
WDI	World Development Indicators
WEF	World Economic Forum
WHO	World Health Organization
WTO	World Trade Organization
WTTC	World Travel and Tourism Council
WVS	World Values Survey

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Part I
Economic Development, Trade and Investment

Chapter 1
Determinants of Growth in SEMC

Leonor Coutinho

1.1 Introduction

The EU has become increasingly interested in closer economic integration with 11 SEMC. It has included these countries in its successive partnership programs since 1995, the most recent of which is the UfM. SEMC are not homogeneous, but they share some political, cultural, and economic characteristics as well as geographic proximity to the EU.

This chapter focuses on understanding the underlying drivers of these countries' economic growth, to highlight their strengths and the risks they face. SEMC policymakers have pushed through significant economic reforms, yet economic growth in these countries has been lackluster and lower than in most other developing regions. The region's average growth rate hides country-to-country differences that are important to understand.

The oil price booms of the 1970s greatly benefited SEMC through a sharp increase in exports and investments in oil-producing countries such as Algeria, Libya and to a lesser extent Egypt, Syria, and Tunisia. These gains spilled over to their neighbors through increases in worker remittances, trade, and capital flows. But in the 1980s, as oil prices declined, GDP per capita growth rates in most SEMC slowed sharply while unemployment rates remained high.

The deterioration in economic conditions was a catalyst for economic reforms in a number of countries (see Abed and Davoodi 2003). These reforms included the liberalization of trade flows, FDI incentives, increased exchange rate flexibility, and a range of fiscal reforms. Policymakers in some of these countries reformed the tax and benefits systems, introduced VAT, and phased out of food and energy subsidies. They also altered public expenditure management. The countries that pursued

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reforms – Egypt, Jordan, Morocco and Tunisia – have enjoyed higher rates of per capita GDP growth.

Better macroeconomic management led to relative economic stability and higher growth rates in SEMC in the 1990s. Sounder monetary and fiscal policies brought down inflation, narrowed fiscal deficits, and cut domestic debt.

Even as economic performance in the region improved in the 1990s and in the period of 2000–2009, SEMC as a group achieved an annual average per capita growth rate of only 2.7 % in 2000–2009, compared with an annual average of about 5 % for all middle-income countries. This lackluster record was accompanied by a persistently high rate of unemployment, aggravated by population growth and labor force expansion.

The poor growth and employment performance of SEMC may be linked to their weak integration with the global economy. Open economies tend to grow faster than those that adopt inward-looking growth strategies, at least in the long run.

Weak institutions and poor business environments may have become a drag on the region's growth performance. Progress has stalled because policymakers have lost their reform momentum. The 'Arab Spring' pro-democracy movements, notably in Tunisia, Egypt, Syria, and Libya, inspired hope that deep structural changes would be pushed through. But establishing stable and accountable democracies in the region is proving to be more difficult than even skeptics anticipated.

In this chapter, we sought to pinpoint which reforms would yield the greatest dividends in terms of growth for the countries of the region. Hence, we examined SEMC macroeconomic performance, as measured by the rate of per-capita GDP growth, and its main determinants.

1.2 Literature Review

Several factors can improve a country's growth performance. These factors can be grouped into seven categories that are often interlinked: (i) macroeconomic stability, (ii) economic openness (trade and FDI), (iii) financial market development, (iv) investment and infrastructure, (v) human capital, (vi) performance of the public sector, and (vii) institutions.

1.2.1 Macroeconomic Stability

Macroeconomic stability promotes growth. It reduces systemic risk and increases investment and trade. High and unpredictable rates of inflation make it difficult for economic agents to make predictions for the future, prompting them to withhold investments. Inflation also blurs the information content of relative price changes resulting in inefficiently allocated resources. Barro (1997) shows that the estimated effect of inflation on growth is negative when some plausible instruments are used

in the statistical procedures, although he stresses that this evidence hinges on the experiences of high inflation. The virtues of price stability and its positive impact on investment and growth have been argued in the literature on inflation targeting (see Woodford 2003, and references therein).

1.2.2 Trade Openness and FDI

Openness to trade is a driver of economic growth. Countries that are open to trade (i.e. have low barriers to international transactions) tend to have higher ratios of trade (measured by the average of exports and imports) to GDP.[1] In the theoretical literature, international trade promotes the efficient allocation of resources through comparative advantage and fosters competition among firms. In endogenous growth models, including Grossman and Helpman (1991) and Lee (1993), higher long-term growth results from increasing returns to scale in those sectors that are promoted by trade (see Chang et al. 2009). Trade can increase growth by disseminating knowledge and technological progress. Romer (1993), and Barro and Sala-i-Martin (2005) show trade lowers the cost of adopting technological advances from leader countries, allowing the followers to grow faster and converge.

There are numerous counterarguments in the theoretical literature showing that openness to trade can hamper growth in the presence of market imperfections (see Rodriguez and Rodrik 2001, for a survey). But more recent empirical literature has come in support of a positive link between openness and growth when a range of other institutional factors is taken into account (see Chang et al. 2009, and references therein). The benefits of globalization in a given country are often unevenly distributed between rich and poor, increasing inequality (see Harrison 2007, and references therein). There is evidence that benefits of openness may be non-linear. A half-hearted Chinese-style globalization may yield better outcomes than a full-fledged one, unless all countries abide by the same rules (see Rodrik 2011, and references therein).

FDI is a channel for the dissemination of technology and knowledge from country to country. The investments of large MNC give developing countries access to advanced technologies, skilled labor, and efficient management practices (see Carkovic and Levine 2005). Despite the robust theoretical underpinning for the positive impact of FDI on growth, the empirical research on the issue has been inconclusive. Some authors (e.g. Borensztein et al. 1998; Alfaro et al. 2004) find a positive link between FDI and economic growth. Others find no evidence in support of that conclusion (e.g. Aitken and Harrison 1999; Carkovic and Levine 2005).

The strongest evidence of the positive effect of FDI on growth comes from micro-data studies, which show that multinational firms are more productive.

[1] Barriers to international transactions can include tariffs, quotas, non-tariff measures and other institutional barriers and transportation costs.

1.2.3 Financial Market Development

A developed financial market can improve a country's economic growth through a range of channels (see Demirguc-Kunt and Levine 2008, for a detailed survey). Financial markets mitigate the problems of asymmetric information and transaction costs, which prevent funds from flowing efficiently from savers to entrepreneurs. This flow of funds is essential for the optimal allocation of resources across economic agents and inter-temporally, and for better economic decision-making regarding how much to save or invest. Such decision-making determines physical and human capital accumulation, technological progress, and growth (see Greenwood and Jovanovic 1990; Jacoby 1994).

In developed markets, financial intermediaries reduce the costs of monitoring by putting shareholder pressure on firms to improve governance practices (see Bencivenga and Smith 1993).

Financial development, by diversifying risk, allows investors to choose projects with higher expected returns, allowing for more (though riskier) innovation (see King and Levine 1993). A developed financial market allows large volumes of savings to be pooled into investments that would otherwise be constrained to economically inefficient scales (Sirri and Tufano 1995).

Financial markets can improve economic efficiency and boost growth by facilitating specialization. Greenwood and Smith (1996) show that greater specialization requires more transactions. By lowering transaction costs, financial development can facilitate a process of specialization leading to productivity gains and higher rates of economic growth.

1.2.4 Investment and Infrastructure

In the standard neoclassical growth model for a closed economy, an increase in the investment rate increases the steady state level of output and increases growth in the short-run, while the country converges to its new steady-state level. Even this simple model justifies a positive relationship between investment rates and economic growth. Some empirical studies of cross-country growth, including DeLong and Summers (1991) and Mankiw et al. (1992), show such a statistically significant relationship.

Barro (1996) notes that it is important to account for the possibility of reverse causality. A positive coefficient in this case may reflect a positive relation between growth opportunities and investment. This reverse effect is especially likely to apply to open economies, in which there is a choice between investing at home or abroad. Blomstrom et al. (1996) as well as Barro (1996) show that when investment is used appropriately, the positive effect on growth becomes statistically insignificant in a number of cases. Barro (1996), however, shows that many of the variables that are statistically significant in explaining growth, such as life expectancy (used

as a proxy for the quality of human capital) and the inflation rate, affect investment. One interpretation of the statistically insignificant investment coefficient is that some policy variables, such as price stability, encourage economic growth by stimulating investment.

In standard growth models in which factors are complementary, an increase in the stock of infrastructure raises the productivity of other factors. Roads and telecommunications increase the productivity of capital and labor by giving easier access to raw materials, intermediate inputs, and information. The possibility that infrastructure investment may crowd-out private investment, especially when financed through taxation or borrowing on domestic financial markets, has been highlighted (see Straub 2008, and references therein). But several cross-country panel data studies confirm the positive impact of infrastructure on output growth (see, Canning 1999; Demetriades and Mamuneas 2000; Roller and Waverman 2001; Calderon and Serven 2004).

1.2.5 Human Capital

Human capital has an impact on per capita output growth, according to some theories. Human capital can increase economic growth by increasing the productivity of labor (Barro 1997). High levels of human capital boost growth by facilitating technology adoption (Benhabib and Spiegel 2005; Acemoglu 2003; Caselli and Coleman 2006). Higher levels of human capital foster democracy, lead to better governance, and more equitable society – pre-requisites for political stability (see Aghion et al. 1999).

The empirical evidence on the issue has been mixed. Mankiw et al. (1992) show a link between secondary education enrollment rates and growth of per capita GDP. Other studies (including Pritchett 2001 and references therein) find an insignificant or negative effect, when using alternative measures of human capital.

The inconsistency in the estimates is in part due to data limitations (see De la Fuente 2006; Cohen and Sotto 2007). The link between human capital and growth is robustly positive when appropriate data are considered. When measuring investment in education, the quality of investments is more important than the quantity.

1.2.6 The Public Sector

The role of the public sector can sometimes explain differences in growth performance across countries. Large and inefficient governments hamper growth. Large government expenditures can crowd out private sector demand through their effects on interest rates and credit availability. The taxes required to finance government expenditures are often distortionary, imposing deadweight losses on the economy. There are costs associated with revenue collection, from administration to

enforcement. The government can stunt growth through its poor investment decisions and poor delivery of public services.

To be sure, in endogenous growth models there is scope for well-designed government expenditure and tax systems to play a role in fostering long-term growth, including in its positive effect on investment in human and physical capital (see Stokey and Rebelo 1995; Mendoza et al. 1997; Bose et al. 2007; Barrios and Schaechter 2008, and references therein). 'Well-designed' stands for non-distortionary forms of taxation and expenditures with a substantial physical and human capital component that enter in a private production function (Barro and Sala-i-Martin 2005; Devarajan et al. 1996).

1.2.7 Institutions

Institutions play a role determining development outcomes (see North 1990). In the long run, the main factor encouraging the convergence of living standards is the adoption of high-quality institutions. These ensure the protection of property rights (promoting private sector development and investment), the rule of law (enforcing contracts and enabling markets to operate), law-and-order and political stability (minimizing disruptions to economic activity), and control of corruption (minimizing rent-seeking and other unproductive activities).

Without institutions, policies aimed at enhancing growth fall on unfertile soil. An economy in a country that lacks institutions is vulnerable to shocks. A range of empirical studies corroborate the link between institutions and growth (see Burki and Perry 1998; Rodrik et al. 2004).

1.3 Empirical Analysis: Determinants of Growth

To analyze the drivers of growth in SEMC in a systematic way, this section uses econometric tools to identify the factors that explain differences in performance between SEMC and between SEMC and four EU-MED countries (France, Greece, Italy and Spain).

We selected a set of explanatory variables determined in part by data availability. This set of variables includes the initial level of GDP per capita (in constant PPP terms) to account for convergence effects. As a measure of macroeconomic stability, we used the rate of CPI inflation. As a proxy for financial development, we considered both domestic credit to the private sector (as % of GDP) and the Chinn and Ito capital account openness index. Chinn and Ito (2008) show that capital account openness explains subsequent financial development as measured by alternative indicators including private credit growth, and can be an encompassing proxy for financial development. We captured openness to trade by the average of imports and exports of goods and services as % of GDP. Net FDI inflows as % of

GDP as well as total investment as % of GDP were considered. It was difficult to distinguish between public and private investment, since data are limited. As a proxy for public infrastructure, we used the number of telephone lines per 100 persons, which is the variable with the largest country coverage among those commonly used in the literature.

Data on human capital and investment in human capital for SEMC are poor. Enrollment rates are available from the WDI, but only for a few countries and years. The updated Barro and Lee (2001) database provides data on schooling for SEMC, excluding Palestine and Lebanon. From this dataset we considered secondary completion rates as a % of the population above 15 years of age. This data had limitations and did not yield significant results in our analysis (see Cohen and Soto 2007).

As an alternative, we tried to capture information about differences in human capital formation by considering total public expenditures in education as % of GDP. Data on expenditures per student are limited. But this metric can be a proxy for the quality of government expenditures, since this type of expenditure has been identified as growth-enhancing (see Bose et al. 2007).

We tested for the significance of other fiscal variables, including government expenditures as % of GDP, government revenues as % of GDP, and government budget balances as % of GDP. But these variables always came up as insignificant, perhaps due to their short sample size. We did not include them in our analysis because the results regarding these variables were inconclusive.

We considered whether the FH PRI, which ranks countries from 1 (highest degree of freedom) to 7 (least amount of freedom), could be used as a measure of governance. We found that the inverse of this ranking had a positive correlation with good governance and growth.

1.4 Empirical Methodology

Our objective was to analyze how the individual country characteristics summarized above affect growth. These characteristics change over time. Hence, we used pooled cross-country and time-series data. We drew on recent panel-data growth regression literature that uses the GMM estimation procedures to address the problem of endogeneity and control for unobserved country-specific factors (see Levine et al. 2000; Dollar and Kraay 2004; Chang et al. 2009). The GMM method uses differentiation to deal with unobserved fixed effects and allows for a large set of instruments to address the problem of endogeneity (see Arellano and Bond 1991). The sample consists of an unbalanced panel of 10 SEMC (except Palestine) and four EU-MED. For each of them, the dataset included observations consisting of non-overlapping 4-year averages spanning the period 1980–2009. We chose to construct 4-year averages rather than the more commonly-used 5-year averages in an attempt to extend the sample as much as possible, given that some of the data series are short. The inclusion of the four EU-MED countries increased the sample,

made it more balanced between high-income and middle-upper income countries, and allowed testing for the hypothesis of convergence across the Mediterranean.

The starting point of the analysis was the standard linear growth regression, given by Eq. 1.1:

$$y\_(i,t) - y\_(i,t-1) = \beta\_0\, y\_(i,t-1) + \beta\_1{}^{\wedge\prime} Z\_(i,t) + \mu\_t + \eta\_i + \varepsilon\_(i,t) \quad (1.1)$$

In Eq. 1.1, the growth rate of GDP per capita (left hand side) depends on the logarithm of the initial level of GDP per capita (y_(i,t-1)) and on the set of explanatory variables Z. The subscript i indexes the country, the subscript t indexes the time period; μt and ηi represent unobserved time and country-specific effects, respectively and ε_(i,t) is the error term.

According to the literature (see Arellano and Bond 1991), the most appropriate method for estimating the Eq. 1.1 is to use the GMM estimation method. The GMM procedure can deal with the presence of unobserved country-specific effects, which cannot be dealt with standard within-group or difference estimators, due to the dynamic nature of the regression. The same concerns the possible endogeneity of the regressors. The GMM estimation is based on differencing to control for unobserved effects and, on instrumenting to control for endogeneity.

Notice that Eq. 1.1 can be rearranged as follows:

$$y\_(i,t) = (1+\beta\_0) y\_(i,t-1) + \beta\_1{}^{\wedge\prime} Z\_(i,t) + \mu\_t + \eta\_i + \varepsilon\_(i,t) \quad (1.2)$$

Country-specific effects can be eliminated from Eq. 1.2 by taking first differences. This yields Eq. 1.3:

$$\begin{aligned} y\_(i,t) - y\_(i,t-1) = {} & (1+\beta\_0)(y\_(i,t-1) - y\_(i,t-2)) \\ & + \beta\_1{}^{\wedge\prime}(Z\_(i,t) - Z\_(i,t-1)) + (\mu\_t - \mu\_(t-1)) \\ & + (\varepsilon\_(i,t) - \varepsilon\_(i,t-1)) \end{aligned} \quad (1.3)$$

Instrumenting is required in this context to address the likely endogeneity of the explanatory variables. The new error term (ε_(i,t)-ε_(i,t-1)), by construction, is correlated with the lagged-dependent variable, (y_(i,t-1)-y_(i,t-2)). The GMM estimation method takes advantage of the panel nature of the dataset and considers a large set of instruments consisting of previous observations of the explanatory and lagged-dependent variables. This works well under the assumption that the regression error term is uncorrelated with past values of the explanatory variables, although current and future values of the explanatory variables may be affected by growth shocks.

To test whether instruments were valid (i.e. uncorrelated with the residuals), we considered two commonly used specification tests. The first is known as the Sargan test, for which instruments are valid under the null hypothesis. Failure to reject the null provides support for the model in the case of this test. The second test examines whether the original error term in Eqs. 1.1 and 1.2, εi, is serially uncorrelated. The

appropriate null hypothesis is that residuals of Eq. 1.3 have no second-order serial correlation. Failure to reject the null gives support for the model. Second-order serial correlation of the differenced residual indicates that the original error term is serially correlated and follows a moving average process of at least order one. This would reject the appropriateness of the proposed instruments and call for the use of higher-order lags.

1.5 Empirical Results

Table 1.1 shows estimates of Eq. 1.1 using the GMM procedure, as described above. Specification (1) is the baseline specification, in which we included as regressors the initial GDP per capita, the rate of inflation, the ratio of domestic credit to the private sector to GDP as a proxy for financial development, the trade openness indicator, the FDI to GDP ratio, the investment to GDP ratio, the proxy for infrastructure and the secondary completion rate as a proxy for human capital.

We tested the significance of a dummy for the four EU-MED, but this was never significant, so we did not include it in the estimates. Dummies for oil-producing countries were also insignificant, suggesting that these characteristics are being picked up by differences in other variables. In specification (2), we replaced the private-credit-to-GDP ratio, which always comes out as insignificant, with the capital account openness indicator at the beginning of the period. In doing this we followed Chinn and Ito (2008), who show that this variable affects financial development.

The results showed financial development as proxied by this variable to be robustly correlated with growth performance. In specification (3) we excluded the human capital variable from the model, since it was never significant. We obtained similar results when we used average years of total schooling instead to proxy for human capital. In specification (4), we added governance to the model. We used the inverse of the FH PRI as a proxy of governance, so that a higher value implied better governance, and used the initial level rather than period averages. We tested the Polity 2 index of democracy and the results do not change substantially. In specification (5), we included expenditures on education as % of GDP (not available for Algeria and Libya).

The estimates in Table 1.1 exclude Lebanon and Palestine due to data limitation.

The results support the hypothesis of convergence across countries on both sides of the Mediterranean. The coefficient on initial GDP is negative and significant in all specifications. This implies that on average countries with low levels of GDP per capita have been growing faster than countries with high levels.

In all specifications the rate of inflation appears with a significant and negative sign. High rates of inflation create macroeconomic uncertainty, which reduces economic efficiency. Disinflation in this group of countries has been rewarded with better growth performance.

Table 1.1 Drivers of growth, dependent variable: growth rate of GDP per capita (From author's estimation)

Explanatory variable	(1)	(2)	(3)	(4)	(5)
Log of initial GDP per capita	−0.494***	−0.533***	−0.541***	−0.549***	−0.771***
	[0.105]	[0.067]	[0.073]	[0.076]	[0.159]
Inflation	−0.039***	−0.050***	−0.037**	−0.036**	−0.055***
	[0.010]	[0.017]	[0.017]	[0.018]	[0.008]
Financial development	0.020				
(Private credit, % GDP)	[0.016]				
Financial development		0.617**	0.567***	0.576***	0.491***
(Initial capital account openness)		[0.264]	[0.203]	[0.213]	[0.157]
Trade openness	0.207***	0.200***	0.203***	0.203***	0.147***
	[0.038]	[0.050]	[0.050]	[0.050]	[0.035]
FDI (% of GDP)	0.600***	0.518***	0.527***	0.517***	0.881***
	[0.140]	[0.145]	[0.158]	[0.152]	[0.160]
Investment (% of GDP)	0.035	0.105*	0.124	0.121	0.103**
	[0.045]	[0.063]	[0.076]	[0.080]	[0.046]
Infrastructure	1.357*	1.483***	1.302**	1.348***	2.349***
	[0.715]	[0.408]	[0.506]	[0.492]	[0.708]
Human capital	−0.032	−0.043			
(Secondary completion)	[0.041]	[0.059]			
Expenditures in education					1.819***
(% of GDP)					[0.705]
Initial governance				0.426	1.497
(Freedom house PRI – inverse ranking)				[0.885]	[1.007]
Observations	83	85	85	85	73
Number of countries	13	13	13	13	11
2nd order autocorrelation (p-value)	0.77	0.82	0.92	0.90	0.48
Sargan test (p-value)	0.35	0.63	0.54	0.60	0.85

Note: All variables (except initial variables) represent 4-year averages. Estimation Method: Differenced GMM. Constant and Time effects included but results omitted. Lebanon was excluded from the analysis due to insufficient data; it is possible to include Lebanon in specifications (3), (4), and (5), but only one cross-section of data is available due to insufficient data on FDI, and the results do not change significantly. Algeria and Libya were excluded from (5) due to insufficient data on expenditures in education; Palestine was excluded from the analysis due to insufficient data

Significant at *** 1%, ** 5%, * 10%

We found financial development as proxied by the initial level of capital account openness was robustly correlated with growth performance. Openness to trade was significant in all specifications with a positive sign. We observed a significant positive impact for FDI.

FDI inflows are correlated with better institutions (see Benassy-Quere et al. 2007). Differences in institutions across countries and within countries over

time, which our database may not have captured, could be captured in part by this variable.

The coefficient associated with the ratio of domestic investment to GDP, although having the expected positive sign, is not always significant. This is consistent with the thesis that public investments have had lower returns in the MENA region (see Straub et al. 2009). It is difficult to distinguish between the effects of public and private investment, since available data on private investment are limited. The insignificance of the results may have to do with the fact that other factors that affect investment (e.g. inflation, openness and FDI) are already accounted for in the regressions (see Barro 1996). Results are more robust for the indicator of infrastructure (number of fixed telephone lines per 100 persons). The coefficient on this indicator is always positive and significant.

Human capital proxied by secondary completion rates was insignificant and had a negative sign, which we did not expect. The same result held if the average years of total schooling was used instead. Returns from education in some SEMC are low, as young graduates often remain unemployed (see Chap. 17). The Barro and Lee (2001) dataset has several limitations and does not yield significant results in growth analysis (see Cohen and Soto 2007). When we included the ratio of public expenditures in education to GDP in the analysis to capture differences in investment in human capital, we found this variable to have a significant and positive impact on growth. This is in line with the findings of growth studies that look at the detailed composition of public expenditure (see Bose et al. 2007).

Our results suggest that SEMC are likely to gain from closer trade and investment ties with the EU. They would also gain from developing their financial markets and improving infrastructure.

1.6 Conclusions

Our aim was to shed light on the determinants of growth in SEMC. We analyzed past trends and cross-sectional information to identify the factors that seemed important in determining differences in output growth, both across time and across countries. Although it is possible that structural changes impact the relative importance of individual factors, understanding past trends is important when inferring about the future.

Data limitations imposed constraints on our econometric analysis. Still, the analysis supported the hypothesis of convergence across income groups. We found growth rates were negatively related to the level of initial income, with poorer countries growing faster on average than richer ones (mostly EU-MED).

The rate of inflation was an important determinant of output growth in the region. This result corroborated other growth studies, which include broader sets of countries, and partly explained the lackluster performance of SEMC in the 1980s, and of Turkey in general.

We found financial market development to be an important determinant when we used the initial level of capital account openness as a proxy for it. Openness to trade and FDI inflows were found to be correlated with growth performance. Certain studies using broader groups of countries have reached less conclusive results regarding these variables. The importance of financial development, trade, and foreign investment for growth in the region highlights the importance of its need for deeper integration in the world economy.

We found expenditure in education can explain differences in performance. We used this indicator to account for differences in investment in human capital, in the absence of better data on stocks of human capital and on expenditures. Further research would benefit from higher quality data that would take into account differences in the stock of human capital and differences in the efficiency with which resources committed to education are used.

Fiscal data for this set of countries are limited. The available series are often discontinued. Including variables such as the fiscal deficit to GDP ratio, the total expenditures to GDP ratio or the revenues to GDP ratio did not yield significant results and reduced the sample size. Efforts should be made to improve the quality of fiscal data, including the composition of expenditures and revenues. Recent data gathering exercises, including institutional indexes and trade logistics indicators, are now regularly published and should facilitate the future research.

We concluded that the EU needs to revise its development policies towards the region, putting a greater emphasis on trade and investment relations. Trade and foreign investment have been identified as catalysts for growth in SEMC, and the EU is a privileged partner for the region due to its proximity and historic ties. Provided that facilitating trade and investment between the two regions does not come at the cost of a reduction in trade with and investment from other regions, increased partnership in these areas would improve the growth prospects of SEMC.

Appendix. Description of the Data

Explanatory and other variables	Description	Source	Sample[a]
GDP per capita	GDP per capita, PPP (constant 2005, international USD, Units)	WDI	1980–2009
Population	Population in mn	WEO	1980–2009
Inflation	Inflation, average consumer prices	WEO	1980–2009
FD	Domestic credit to private sector (% of GDP)	WDI	1980–2009
Openness	Imports + exports of goods and services (% of GDP)	WDI	1980–2009

(continued)

Explanatory and other variables	Description	Source	Sample[a]
FDI (% of GDP)	FDI, net inflows (% of GDP)	WDI	1980–2009
Investment (% of GDP)	Gross fixed capital formation (% of GDP)	WDI	1980–2011
Infrastructure	Logarithm of telephone lines per 100 people	WDI	1980–2009
Expenditures in education (% of GDP)	Public expenditures in education (% GDP)*	WDI	1981–2009
Government deficit	GG net lending/borrowing (% of GDP)	WEO	1990–2009
Overall governance	Exponential of the average of the six WBGI*	WB	1996–2009
Government debt	Total debt stocks (% of GDP)	IMF, Eurostat, & Bank of Israel	1980–2009
Current account deficit	Current account deficit (% of GDP)	WEO	1980–2010
Unemployment	Unemployment rate, % of total labor force	WEO	1980–2010
Peg	Dummy variable for pegged exchange rate regime	Rose (2010)	1980–2010
Float	Dummy variable for floating exchange rate regime	Rose (2010)	1980–2010
Demu	Dummy variable for Eurozone membership	Own research	1980–2011
Dinflation_target	Dummy variable for inflation targeting countries	Own research	1980–2010

Note: [a]Shows the maximum availability, but samples are shorter for some of the countries considered
*Interpolated for some missing years

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Chapter 2
Euro-Mediterranean Trade: Shallow Versus Deep Integration

Nicolas Peridy and Ahmed F. Ghoneim

2.1 Introduction

In this chapter, we attempt to assess the impact of shallow versus deep integration between the SEMC[1] and the EU, and among the SEMC themselves. We used a dataset which included tariffs, as a proxy for shallow integration, and NTM,[2] as a proxy for deep integration. We included data to account for transport and logistics costs. We used an original dataset of maritime freight cost (Maersk 2007) and the WB LPI.

Section 2.2 provides an overview of trade protection in the SEMC as well as calculations of the magnitude of NTM in terms of AVE based on the research approach of Kee et al. (2009).

Section 2.3 estimates a gravity model based on new theoretical and empirical approaches. In it, we relied on trade costs, following Anderson and van Wincoop (2004). We estimated the specific impact of tariffs, NTM, and transport and logistics costs on the SEMC's trade with the EU. Section 2.4 presents conclusions and policy implications.

[1] Libya and Palestine have not been included in this analysis because of data unavailability.

[2] The term 'Non-Tariff Measures'(NTM) has recently tended to replace the term 'Non-Tariff Barriers' since some measures are not explicitly protectionist (e.g. some regulations or standards designed at increasing consumer safety – see Cadot et al. 2011).

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2.2 Tariff and NTM Between the SEMC and the EU

This section provides an estimation of trade costs, especially tariffs and NTM applied between the SEMC and the EU. This allows us to (i) have a better understanding of the level and magnitude of tariffs and NTM in the countries considered; (ii) use these estimations as inputs into the gravity model in order to assess the effects of tariffs and NTM in SEMC-EU trade. Figure 2.1 summarizes MFN tariffs applied by the SEMC. With the exception of Israel, Lebanon and Turkey, the SEMC still use significant tariff protection, especially Tunisia, Egypt, Morocco, and Algeria.

Table 2.1 shows the average tariffs that are effectively applied overall and at the bilateral level. Israel and Turkey have removed almost all tariffs on EU imports. Morocco and Lebanon have also made progress, with small average tariffs applied to EU imports. Tunisia, Syria, and Algeria have the highest tariffs (up to 18 % for Tunisia), whereas Jordan and Egypt are in an intermediate position. We don't understand why Tunisia maintains such a high level of tariffs. The shallow integration process between the SEMC and the EU is not complete, with the exception of Israel and Turkey. Algeria, and to a lesser extent Tunisia, exhibit high tariffs. This fact had implications when we assessed the impact of shallow versus deep integration using the gravity model.[3]

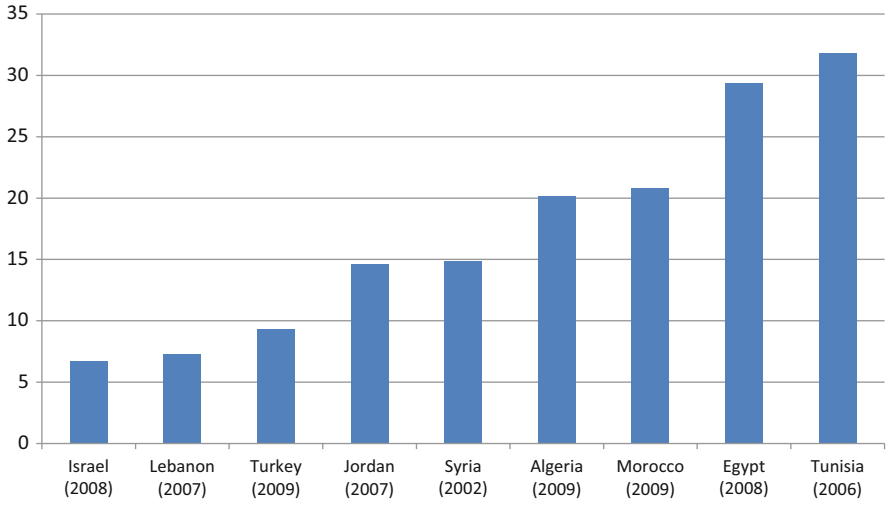

Fig. 2.1 Average MFN tariffs applied by SEMC, %, unweighted average (From Ghoneim et al 2012) (Note: Last year available in brackets. Libya and Palestine are excluded due to lack of data)

[3] MFN and applied tariffs are not strictly comparable, due to aggregation biases. For example, TRAINS reports an applied tariff equal to 0 if there is no trade between SEMC and the EU for a

Table 2.1 Average tariffs applied by SEMC on their imports, unweighted average, % (From De Wulf et al. 2009)

Country	Tariffs with all countries	Tariffs with EU	Share of Duty-free EU lines
Algeria (2009)	14.1	12.9	n.a.
Morocco (2009)	8.2	3.9	51.0
Tunisia (2006)	22.2	18.0	39.2
Egypt (2008)	9.4	10.1	6.2
Lebanon (2007)	5.1	5.4	n.a.
Israel (2008)	2.1	0.1	95.0
Jordan (2007)	10.1	11.0	38.3
Syria (2002)	12.8	14.1	n.a.
Turkey (2009)	1.2	0.1	n.a.

Tariffs applied to the SEMC exports by their partners in the Euro-Mediterranean area have been progressively removed, thanks to the Barcelona process and the South-South integration process, namely the PAFTA.[4] The shallow integration is now complete for the SEMC exports. Algeria is an exception: despite its PAFTA membership it did not start the tariff liberalization process in 2005 (Peridy and Ghoneim 2009). Israel and Turkey are outside PAFTA.

There is room to remove NTM in the SEMC. We identified NTM related to standards, SPS measures, customs procedures, IPR, competition, and government procurement.

The SEMC have undertaken steps to harmonize their national standards with international ones and with those of the EU. All SEMC which have been engaged with the EU in AA have made progress on negotiating an ACCA of industrial products.

Despite the reforms the SEMC have undertaken, there is a lack of MRA signed between the SEMC and the EU or amongst themselves, with the exception of Israel (which has such an agreement with the EU). This situation reflects the absence of trust in the SEMC standardization procedures or the weak accreditation of domestic organizations, which have not been granted international recognition.

There is a lack of credible conformity assessment[5] systems that create trust in the standards' systems in the SEMC. The lack of investments in related infrastructure,

given product. Tariffs are not necessarily equal to zero. Thus, this product must be removed if we wish to calculate average tariffs (weighted or unweighted) without such a bias. Then, as products are aggregated into two-digit level, MFN tariffs are not strictly comparable to applied ones since the product coverage is not exactly the same.

[4] PAFTA is a free trade area between 18 Arab countries out of the 22 countries which are members of the League of Arab States. It has been fully implemented since 2005.

[5] Conformity assessment is the name given to the processes that are used to demonstrate that a product (tangible) or a service or a management system or body meets specified requirements. Conformity assessment can cover testing, surveillance, inspection, auditing, certification, registration, and accreditation. See http://www.iso.org/iso/resources/conformity_assessment/what_is_conformity_assessment.htm.

including laboratories and necessary equipment is a major obstacle. The SEMC face problems with labeling and packaging requirements, testing procedures, and market surveillance.

The SEMC have been working on providing flexibility and harmonizing their SPS measures with international norms. Yet, despite the effort undertaken, there are a number of problems that affect exporters to the SEMC. The problems vary in their degrees of urgency, and include shelf life requirements, special religious requirements, product and country specific SPS measures, multiplicity of systems and documentation, weak national treatment, and high compliance costs. Problems prevail in custom procedures, IPR, competition, and government procurement.

Estimating NTM is difficult. The corresponding data are from the TRAINS database, with eight groups of measures, including specific charges and taxes, administered processes, financial measures, automatic licenses, non-automatic licenses and other quantitative restrictions, monopolistic measures, and technical or quality regulations. The TRAINS dataset is incomplete and available for 1 year only (1999 or 2001). Nevertheless, it provides an insight into NTM in the SEMC.

The available data do not indicate the number of NTM applied at the bilateral level. It does not provide any direct indication about the effectiveness of NTM as a protection tool. It is not possible to compare the magnitude of the protection due to NTM to that due to tariffs, since these two variables are not measured in the same way. This problem may be addressed by calculating the AVE of NTM using the methodology developed by Kee et al. (2009).

The Kee et al. (2009) methodology is applied in two stages. The first includes an estimation of the quantity impact of NTM on imports. This impact is then transformed into price effects, using import demand elasticities calculated in Kee et al. (2008).

Using the dataset completed by Lopez Gonzalez and Mendez Parra (see Ghoneim et al 2012, Annex 3), proxies are available for tariffs, namely MFN, PREF (preferential) and AHS (effectively applied tariffs), which is the minimum between MFN and PREF. As a sensitivity analysis, all proxies have been tested. Since preferential tariff data are often unavailable,[6] this introduces two problems.

Lack of preferential tariff data increases the number of unavailable observations. It also introduces a bias in AHS measure. The measure of AHS will be correct when the preferential tariff is available, but when it is not, the AHS tariff takes the value of the MFN one (since in the formula, the minimum between MFN and unavailable PREF becomes MFN). The measure of the AHS is volatile in time since it sometimes captures MFN only. The MFN tariff seems to be the most reliable measure for the calculation of AVE. Therefore, the results presented below include only MFN tariffs.

Several proxies are available for NTM. We aggregate all these NTM types (except the first category, which includes tariffs). We made a distinction in respect to the products and/or countries the NTM applies. Some NTM apply regardless of

[6] This may be because of zero flows or because data are unavailable for a given product in a given country.

origin (e.g. sanitary requirement), some others regardless of the product, whereas some others are product-specific or country-specific. In order to capture the full range of NTM, the latter have been aggregated, including country- and product-specific NTM as well as country and product non-specific NTM. As a final step, an NTM variable is transformed into a binary variable which takes the value of zero in case of no NTM and unity if there is at least one NTM.

The model is estimated with the TSHP and relies on the assumption that zero trade flows in the dataset do not occur randomly but are the outcome of a selection procedure. The TSHP estimator makes it possible to correct for this selection bias. The first stage estimates a Probit model (test for the probability of country i to exports to country j). In the second stage, when exports occur, the effects of trade barriers and other variables can be estimated through the choice of an estimator (Heckman 1979; Greene 2006).

We tested various selection variables. The final specification assumes that the likelihood to export depends on the type of partner countries. Partner countries are classified into four groups according to the probability to export, which depends on political barriers. The four groups include the EU15, other SEMC, other EU countries, and Israel. The probability for the SEMC to export is greater towards the EU15 than towards other countries, especially Israel, for political reasons. As a sensitivity analysis, it is assumed that the probability to export depends on the occurrence of exports in the past. According to the new trade theory developed by Baldwin and Krugman (1989), a firm must bear sunk costs before entering the export market. A firm's probability to export depends on its ability to export in the past. This theory is based on hysteresis in international trade.

Results are presented in Table 2.2 and Fig. 2.2 (except Israel, Turkey, and Syria, for which data on NTM are unavailable). The estimation of the TSHP shows that the presence of NTM (i.e. when the NTM dummy is equal to unity) has a negative and significant impact on the dependent variable (imports net of tariffs) in the SEMC. There are differences across countries. Algeria records the greater coefficient related to NTM (−0.83). Morocco and Tunisia exhibit the lowest coefficient in absolute value (−0.33 and −0.38 respectively). Lebanon, Jordan, and Egypt are ranked in an intermediate position.

Looking at the other independent variables, the GDP per capita ratio is positive and significant. As the economic distance (measured by the gap in GDP per capita) increases between the SEMC and their partners, trade increases. Most trade between the SEMC and their partners involves inter-industry trade. The sum of GDP between the SEMC and their partners shows a positive and significant sign. Trade is expected to increase with the size of the two partners. The sign of the selection variable is negative and significant. The likelihood to trade depends on the type of partner (EU, other SEMC, or Israel).

The results presented in Table 2.2 are used to calculate AVE according to Kee et al. (2009) methodology and the variables described above. The lower the parameter estimate corresponding to NTM and the lower the import demand elasticity (in absolute value), the higher the AVE. The other variables are not directly introduced to the calculation of the AVE but they are necessary in the

Table 2.2 Parameter estimates used to calculate AVE. Dependent variable: imports net of tariffs (Eq. 1.2) (From the TSHP, own calculations; import demand elasticities from Kee et al. 2008)

Variable	Algeria	Egypt	Jordan	Lebanon	Morocco	Tunisia
Independent:						
NTM	−0.836***	−0.501***	−0.489***	−0.431***	−0.387***	−0.335***
Gdpcap GDP per capita	0.129**	0.145*	0.795***	−0070	1.191***	0.118
Distance	−0.0004***	−0.0001**	−0.0001**	−0.0004***	−0.0008***	−0.0010***
Sum gdp	0.939***	1.28***	1.060***	1.16***	1.59***	1.48***
Constant	6.249***	4.878***	4.725***	6.583***	6.911***	8.165***
Selection:						
Partner type	−0.334**	−0.511**	−0.489**	−0.476**	−0.541**	−0.414**
Number of obs.	1,727	2,039	1,618	2,002	1,821	1,985
Censored observations	341	815	286	396	428	455
Import demand elasticities	−1.59	−1.78	−1.16	−1.26	−1.45	−1.24

Note: ***significant at 1 %-level; **significant at 5 %-level; *significant at 10 %-level

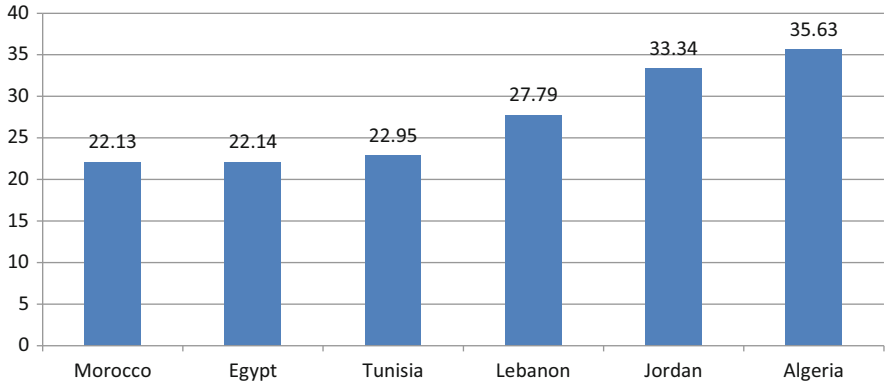

Fig. 2.2 NTM AVE in the SEMC, % (From authors' estimation)

model to make sure that the NTM parameter estimate is not biased by omitted variables.

The calculation of the corresponding AVE is reported in Fig. 2.2. It provides a first picture of the magnitude of NTM: They are high in Algeria and in Jordan (due to low import demand elasticity in absolute value).[7] In these two countries, NTM amount to more than 33 % in terms of AVE. They show the highest number of NTM in the database, up to 309,800 in Jordan). Morocco, Tunisia, and Egypt (due to high import demand elasticity in absolute value) exhibit the lowest AVE (less than 25 %). These countries show the lowest number of NTM in the database (about 20,000 each).

By adding tariffs and NTM, the protection level is presented in Fig. 2.3. All SEMC exhibit NTM that are greater than tariffs. For Algeria, Jordan, and Tunisia (due to high tariffs) the protection level ranges from 43 % (Jordan) to 50 % (Algeria). In Morocco, Egypt, and Lebanon it amounts to about 30 %. Adding tariffs and NTM together provides levels of protection that are not reliable, as a quota might be binding and hence no tariff-equivalent effect will be shown. The impact is not necessarily cumulative. Figure 2.3 provides a picture of protection in the SEMC.

Whatever the method implemented and the quality of the data used for the calculation, the rate of protection remains high in the SEMC, especially due to great NTM.

Given these high protection levels, one can expect their impact on SEMC imports to be significant. The story is different when one looks at SEMC exports to their partners. Since the early 1990s, the EU has removed its tariff protection applied to the SEMC. The NTM applied by the EU seem to be of lower importance.

[7] The import demand elasticity is equal to −1.16 in Jordan whereas it is −1.78 for Egypt. This explains that although these two countries exhibit similar parameter estimates, the AVE is greater for Jordan.

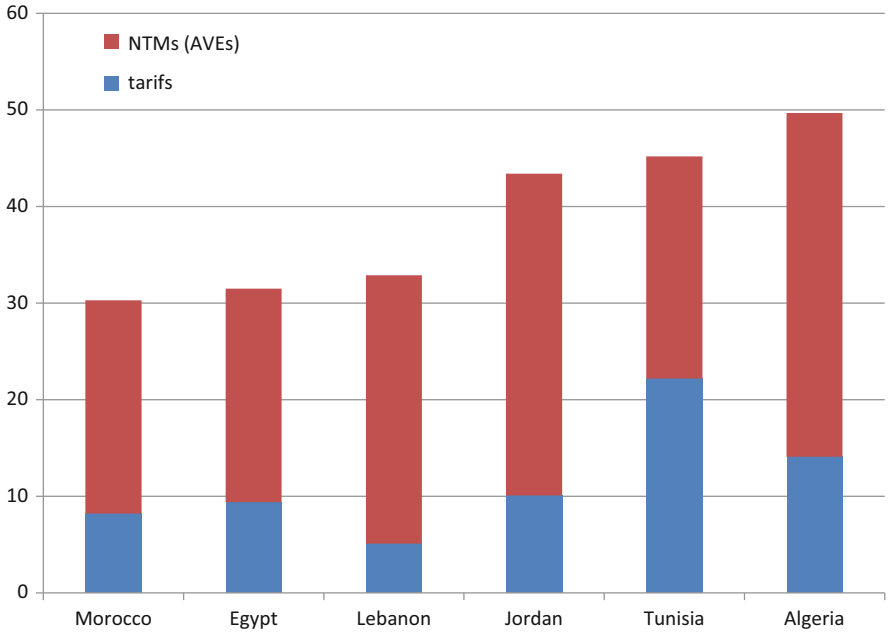

Fig. 2.3 Overall protection in the SEMC: tariffs and NTM (From authors' estimation)

For example, Kee et al. (2009) show that the AVE applied by the EU to its imports is equal to 13.4 %. This is lower than AVE applied by the SEMC to their own imports. The NTM removal between the EU and SEMC is expected to produce smaller effects with regard to SEMC exports than SEMC imports from the EU.

2.3 The Application of a Specific Gravity Model with Trade Costs

This section aims to estimate the impact of the trade costs related to the lack of shallow integration (tariffs) or deep integration (NTM and transport costs) through the use of new gravity models.

2.3.1 Model Specification, Data and Sources

Based on the theoretical equation developed by Anderson and van Wincoop (2003, 2004), we derive our empirical equations which will be tested for the SEMC's trade relationships:

$$\ln X_{jk} = \alpha_0 + \alpha_1 \ln SUMGDP_j + \alpha_2 \ln TAR_{jk} + \alpha_3 NTMs_{ijk} + \alpha_4 \ln TRANSCOST_j + \alpha_5 \ln LANG_j + \alpha_6 \ln COL_j + \phi_j + \varphi_k + \varepsilon_{ijt} \quad (2.1)$$

Given that data for NTM are only available for 1 year (2001), the gravity equation will be estimated for this year. The temporal pattern of the equation is disregarded. The equation is estimated for each country i. The equation does not include GDP of the origin and destination country separately, but the sum of the GDP (SUMGDP) of each SEMC with its partner j.[8] This specification is used both in the theoretical and the empirical literature based on the new trade theory (Helpman and Krugman 1985). Subscript k denotes the product decomposition level (digit 2).

Bilateral trade costs are considered using three variables. The first corresponds to bilateral tariffs (TAR_j). This variable will be used as a proxy for the shallow integration which has been initiated in the Barcelona Process and its related AA. As in Sect. 2.2, the MFN tariffs have been used for the estimation of the model. Data are derived from the UNCTAD TRAINS database.

NTM will be considered as a proxy for deep integration. We will use the same proxy as in Sect. 2.2, i.e. a binary variable which takes the value of one in case of NTM and 0 otherwise.

TRANSCOST is an original measure of transportation costs. It is based on statistics developed by Maersk, a shipping liner company. Maritime transport accounts for 80 % of world trade. The variable used in the model corresponds to the freight costs in USD for a standard container (20 ft long) from a port of origin to a port of destination (year 2007). Table 2.3 shows some freight costs for a selection of importing (mport) and exporting (xport) ports.

Since data are not available for all reported and partner countries, missing data have been simulated from the following panel data model:

$$\ln TRANSCOST_{ij} = \alpha_0 + \gamma_i + \gamma_j + \lambda \ln DIST_{ij} + \varepsilon_{ijt} \quad (2.2)$$

In Eq. 2.2, the relationship between freight costs (TRANSCOST) and distance is estimated with available data. A fixed-effects model is implemented with γ_i and γ_j as country-specific effects. Results show that $a_0 = 1292.8$ and $\gamma = 0.071$ which is significant at 5 % level.

Freight costs can be simulated for the missing importing or exporting countries by the use of the estimated results (including the estimated fixed effects).

As a sensitivity analysis, alternative variables are used for transport costs, including the LPI (World Bank 2011). It ranges from 1 (worst) to 5 (best). The LPI is relevant for our analysis since it measures both transport costs and the efficiency of logistics in a given country. Countries with the best LPI score trade more than other countries (other things being equal).

[8] As in Anderson and van Wincoop (2003), world GDP is passed on to the intercept α_0.

Table 2.3 Freight costs for a selection of countries in the Euro-Mediterranean area, USD for a standard container in 2007 (From Maersk Line 2007)

Mport	Xport	Freight	Mport	Xport	Freight
Algeria	France	1,872.62	Morocco	France	1,431.07
Algeria	Germany	1,914.56	Morocco	Germany	1,439.73
Algeria	Italy	1,709.09	Morocco	Italy	1,515.2
Algeria	Netherlands	1,858.3	Morocco	Netherlands	1,350.19
Algeria	Spain	1,940.52	Morocco	Spain	1,265.98
Algeria	UK	1,906.98	Morocco	UK	1,552.95
Egypt	France	1,574.17	Tunisia	France	1,394.65
Egypt	Germany	1,216.68	Tunisia	Germany	1,436.59
Egypt	Italy	859.46	Tunisia	Italy	879.65
Egypt	Netherlands	1,160.43	Tunisia	Netherlands	1,252.19
Egypt	Spain	1,409.07	Tunisia	Spain	1,296.13
Egypt	UK	1,348.61	Tunisia	UK	1,464.54
Israel	France	1,639.68	Turkey	France	1,521.23
Israel	Germany	1,281.62	Turkey	Germany	1,363.46
Israel	Italy	1,277.46	Turkey	Italy	1,473.55
Israel	Netherlands	1,225.37	Turkey	Netherlands	1,307.2
Israel	Spain	1,430.59	Turkey	Spain	1,422.7
Israel	UK	1,273	Turkey	UK	1,442.4

Figure 2.4 shows the gap between the EU and the SEMC: 11 EU countries are ranked in the world top-20 group while the SEMC fall well behind, except Israel, Lebanon, and Turkey which are ranked 31, 33, and 39, respectively, close to the Southern and Eastern part of the EU.

Algeria and Libya are at the bottom of the ranking (respectively 130 and 132). This reveals major transport and logistics inefficiency in these two countries. Syria, Egypt, Jordan, and Morocco show poor results. Tunisia, ranked at 61, shows significant progress.

Although the LPI is an interesting indicator, its relevance for our analysis is limited by the fact that data are provided at country level, not at bilateral level. Since the model's estimation is implemented for each SEMC, it is not possible to test the impact of its logistics efficiency on its imports. Given this limitation, two alternative solutions are proposed. The first consists of testing the impact of partner's LPI on SEMC imports. In this case, the estimation results will reflect to what extent the logistics efficiency of SEMC partners (mainly EU countries) increases the imports from these partners. A second possibility consists of testing the LPI impact on all (not each) SEMC exports, in order to increase the number of available observations.

As a last alternative a proxy for transport costs, the distance between the SEMC and their EU partners, will be used. It is measured by a weighted index which takes into account the spatial distribution of the population within each country (CEPII 2007a).

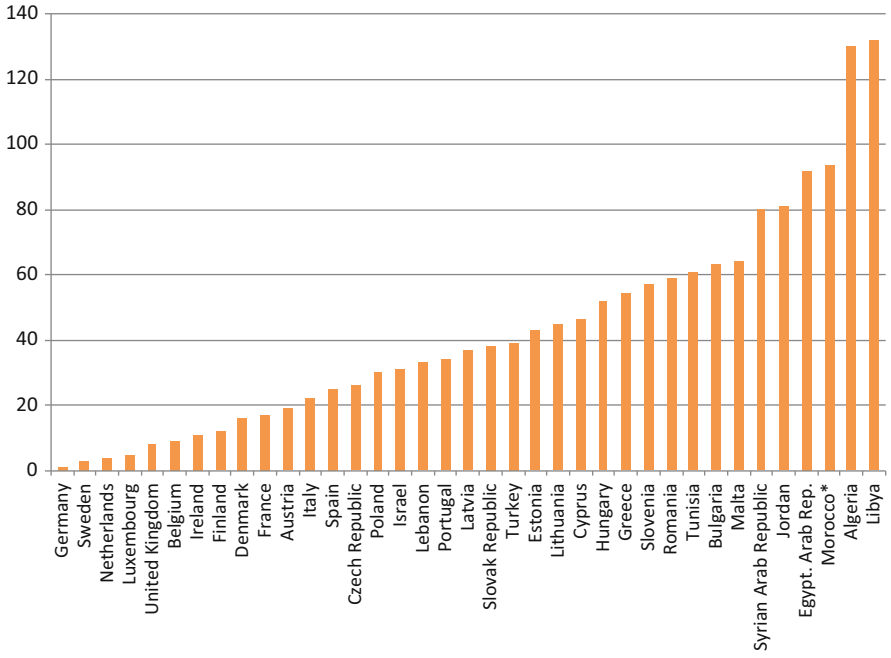

Fig. 2.4 Country ranking for LPI, rank 2010 over 155 countries (From World Bank 2011) (Note: *year 2007 concerning Morocco)

$LANG_{ij}$ is a dummy variable which takes the value of 1 if a common language is spoken by at least 10 % of the population in each country pair (exporter and importer) and 0 otherwise (CEPII 2007b).

COL_{ij} reflects colonial relationships over a long period of time with substantial participation in the colonized country's governance (CEPII 2007b). This variable is equal to 1 in case of colonial links and 0 otherwise. This variable accounts for cultural and historical relationships that are expected to increase trade flows between some EU countries and the SEMC.

Specific country and product effects are introduced in the model (ϕ_j and φ_k). These effects make it possible to capture the heterogeneity of the data. They capture the effects of potential omitted variables (Egger 2004). The price effects included in Eq. 1.5 are captured by the country-specific effect (ϕ_j).[9] The product effect φ_k takes into account potential omitted variables at product level. All these specific effects can be considered as fixed or random depending on the specification of the model.

[9] As there are no reliable cross-country price indicators, the country-specific effects are the most commonly used in the empirical literature since Anderson and van Wincoop (2003).

2.3.2 Choice of the Estimators and Sensitivity Analysis

The estimation of the equation requires econometric analysis in order to address potential biases. The first bias to be considered is heterogeneity across countries and products. It requires the use of FE or RE estimators.

The problem with standard FE models is that they cannot estimate parameters that are product invariant, such as freight costs, language, and colonization. The standard RE model may be biased because of endogeneity problems due to the potential correlation between one or several independent variables and the residuals.

The FEVD estimator developed by Plumper and Troeger (2007) can be used to address these problems. This three stage FE model can estimate the parameters of the product invariant variables while addressing the endogeneity problem.

As a sensitivity analysis, another estimator corrected for endogeneity is presented. It is based on a RE estimator with instrumental variables, namely the Hausman and Taylor estimator, described in Egger (2004).

A potential bias is caused by zero observations. As in the previous section, the TSHP has been selected. Zero trade flows in the dataset do not occur randomly but are the outcome of a selection procedure. The TSHP estimator provides a correction for this selection bias. Political problems between countries influence the decision of firms to export. The SEMC are more likely to trade with traditional partners (EU15) whereas the probability to export will be low with Israel, for political reasons. As a sensitivity analysis, the lagged export variable will be used as the selection variable. This can be justified by considering hysteresis in international trade (Baldwin and Krugman 1989).

As a sensitivity analysis, the estimators are controlled for cross-sectional heteroskedascticity as well as serial correlation of the error term by using Feasible GLS.

2.3.3 Estimation and Results

The model is estimated for the imports of the nine SEMC described above. Data for Syria proved to be of poor quality so this country was removed. The estimation is implemented at the year for which NTM are available (1999 or 2001). The 33 partner countries cover the whole Euro-Med area, i.e., the EU15, CEE, and eight SEMC described above. The dataset includes a product decomposition level at digit-2.

Estimations are presented in Table 2.4 for the TSHP. Table 2.5 provides a sensitivity analysis by showing alternative estimators (FEVD, Hausman and Taylor, Feasible GLS) as well an alternative proxy for transport costs, i.e. distance.

Table 2.4 shows that NTM have a detrimental effect on trade in all SEMC. All parameter estimates are negative and significant at the 1 % level. Algeria exhibits

Table 2.4 Estimation results: the impact of tariffs, NTM, transports, and other variables on SEMC imports (From own estimation)

TSHP	Algeria	Egypt	Jordan	Lebanon	Morocco	Tunisia	Israel	Turkey
Independent:								
NTM	−0.694***	−0.525***	−0.499***	−0.383***	−0.315***	−0.336***	–	–
Tariffs	−1.060***	−0.678***	−0.237***	−0.055**	−0.322***	−1.137***	−0.521***	−0.340***
Transport	−3.044***	−0.239	−0.201	−1.375***	−4.696***	−2.398***	−1.568***	−4.126***
Sum gdp	0.677***	0.704***	0.260***	0.303***	0.906***	1.097***	1.177***	1.977***
Colony	1.409***	0.386**	0.106***	0.295***	0.830***	0.799**	0.045	–
Common language	0.191	−0.160	0.470***	0.204***	0.811***	0.686***	0.209	–
Constant	17.409**	1.345***	−0.488	8.032***	1.543***	6.979**	1.057	8.789**
Selection:								
Partner type	−0.264**	−0.414**	−0.361***	−0.398***	−0.372**	−0.295**	−0.455***	−0.366***
Nb obs.	1,544	1,655	1,533	1,984	1,820	1,944	1,937	2,740
Censored obs	68	451	172	203	328	275	395	722

Note: ***significant at 1 %-level; **significant at 5 %-level; *significant at 10 %-level

Table 2.5 Sensitivity analysis (imports' determinants using alternative variables and estimators)

	Algeria	Egypt	Jordan	Lebanon	Morocco	Tunisia	Israel	Turkey
TSHP								
Distance	*−0.606***	*−0.127*	*−0.238***	*−0.278***	*−1.168***	*−0.899***	*−0.074*	*−0.741***
Partner's LPI	*−1.566*	*−1.871*	*−1.422*	*−1.631*	*−1.327*	*−1.666*	*2.819***	*3.932***
MENA countries' LPI	*1.95***	*1.95***	*1.95***	*1.95***	*1.95***	*1.95***	*1.95***	*1.95***
FEVD (product-invariant and endogeneity)								
NTMs	−0.699***	−0.511***	−0.519***	−0.386***	−0.298***	−0.345***	–	–
Tariffs	−1.119***	−0.679***	−0.240***	−0.051**	−0.314***	−1.183***	−0.476***	−0.349***
Transport	−3.039***	−0.236	−0.197	−1.355***	−3.937***	−2.399***	−1.607***	−3.954***
Hausman-Taylor (endogeneity)								
NTM	−0.699***	−0.510***	−0.519***	−0.387***	−0.298***	−0.345***	–	–
Tariffs	−1.117***	−0.679***	−0.240***	−0.051**	−0.314***	−1.183***	−0.475***	−0.349***
Transport	−3.730***	−3.024	−2.538	−1.264***	−5.210***	−2.524***	−1.439***	−4.555***
Feasible GLS (panel heteroskedasticity and autocorrelation)								
NTM	−0.680***	−0.471***	−0.497***	−0.402***	−0.307***	−0.282**	–	–
Tariffs	−1.145***	−0.665***	−0.252***	−0.053**	−0.315***	−1.125***	−0.501***	−0.373***
Transport	−2.895***	−0.131	−0.218	−1.307***	−3.528***	−2.492***	−1.611***	−3.702***

Note: ***significant at 1 %-level; **significant at 5 %-level; *significant at 10 %-level

the highest coefficient in absolute value (−0.694). Jordan and Egypt show intermediate levels for the parameter estimates (about −0.5) whereas Morocco, Tunisia, and Lebanon present the lowest coefficients (from −0.31 to 0.38). These results can be compared to those corresponding to AVE (Fig. 2.2). There is a correlation between the magnitude of the AVE and the trade effects of NTM. Algeria shows the highest AVE and the greatest trade impact of NTM. Morocco and Tunisia exhibit the lowest AVE and the smaller trade impact of NTM.

NTM reduce bilateral trade in all the SEMC. This impact differs depending on the country, i.e. with a more detrimental impact in the case of Algeria and a less detrimental impact for Morocco and Tunisia. This reflects the difference in the openness of these countries.

It is the existence of NTM that is trade-reducing, given that NTM are measured as a dummy variable. As a sensitivity analysis, the model has been estimated by using another proxy which includes the number of NTM for each product. Results, although significant, are less relevant. A marginal increase in the number of NTM (let us say from 19 to 20 NTM in a given product) has far fewer trade-reducing effects than when we move from no NTM to the existence of NTM (which is captured by the dummy variable).

The transport coefficient was found to be positive for all countries, with the exception of Egypt, and to a lesser extent Israel and Turkey.

Estimation parameters for partners' LPI are always positive but significant only for Turkey and Israel. The relevance of this variable is limited by the fact that it does not test the impact of logistics efficiency in each SEMC considered, but rather the impact of partners' LPI.

The estimation of LPI in the SEMC is positive and significant.[10] Any improvement of logistics in the SEMC is expected to increase trade with their partners, because this improvement will contribute to reducing transport cost, inefficiency, and time. A 1 % decrease in LPI makes it possible to increase SEMC imports by 1.95 % and SEMC exports by 2.96 %.

The other variables are significant while showing the expected sign of the corresponding parameter estimate. For example, the size of the market (measured by the sum of GDP) is always positive and significant. Trade always increases with the market size of the origin and destination countries. The existence of past colonial links is trade-creating, especially for Algeria, Morocco, and Tunisia. The variable corresponding to a common language is significant in Morocco, Tunisia, Jordan, and Lebanon.[11]

The robustness of these results has been checked by sensitivity analysis. The parameter estimates related to NTM and tariffs are stable whatever the estimator applied. The transport coefficient is stable, except for some countries for which

[10] The corresponding parameter estimate has been calculated for all SEMC taken together as a means of increasing the number of observations.

[11] There is no colonial link and no common language between Turkey and other countries in the EU. This explains the lack of parameter estimates corresponding to these variables.

direct data are unavailable (Jordan and Lebanon). This is why the parameter estimates calculated with transport costs must be cross-checked with those calculated with distance.

2.4 Conclusions and Policy Implications

These results must still be interpreted cautiously since they sometimes rely on old data, especially NTM:

1. Trade costs reduce imports to the SEMC from the EU.
2. Tariffs are import-reducing, but mainly in the countries which showed the highest tariff levels (Algeria and Tunisia). Shallow integration was not complete in these countries. Despite tariff cuts since 2001, tariffs remain significant. Gains can still be expected from shallow integration in these countries.
3. NTM are trade-reducing in all countries, especially Algeria. They are less trade-reducing in Morocco and Tunisia, though still significant. Eliminating NTM in the SEMC as a move towards deeper integration with the EU is expected to provide significant gains.
4. Transport costs reduce trade, especially in Maghreb countries, since they record the highest freight costs. Any improvement of logistics performance in the SEMC is expected to increase imports from their partners, since this cuts down transport costs, inefficiency, and time. Improvement of LPI in the SEMC and the EU is expected to provide gains.
5. Tariffs have no impact on SEMC exports, since the EU has removed its tariffs. NTM applied by the EU have an impact on SEMC exports, although it is limited. The AVE applied by the EU is lower than that applied by the SEMC. The biggest impact may be found in logistics because SEMC exports are reduced by their low LPI. Any improvement of logistics in the SEMC should increase their exports towards the EU.

These results lead to the following policy implications:

1. The SEMC should complete their shallow integration with their EU partners and across themselves to capture trade gains. Algeria should make efforts to reduce its tariffs, which currently remain at high levels.
2. Dealing with deep integration is a more difficult task. First, NTM must be addressed altogether, since the removal of one NTM while keeping others provides limited benefits. Each SEMC should identify all NTM for each product and decide whether to remove them or not. The removal of all NTM for all products is not necessarily the right solution, since some NTM may be useful for specific reasons (sanitary, etc.).
3. There are numerous NTM in the SEMC that reduce trade. Their removal for specific products can be done by eliminating para-tariff measures or moving towards mutual technical standard recognition. A cost-benefit analysis should be

undertaken at product-level before embarking on NTM elimination (especially in terms of short-term costs due to increased competition from EU products).
4. Gains can be achieved through improving LPI (port infrastructures, logistics services, etc.). Increased Euro-Mediterranean cooperation in infrastructure-related projects is required. Extending financial cooperation between the EU and the SEMC (through specific EIB loans) can improve the performance of logistics.

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Chapter 3
The EU-Turkey Customs Union: A Model for Future Euro-Med Integration

Subidey Togan

3.1 Introduction

After pursuing inward-oriented development strategies for 50 years, Turkey switched to outward-oriented policies in 1980. The policy of further opening up the economy was pursued through close association with the EU. Turkey applied for association with the EU (then the EEC) as early as 1959. The application ultimately resulted in the signing of the AA, commonly known as the Ankara Agreement, in 1963. The Additional Protocol to the AA was signed in 1970 and became effective in 1973. The basic aim of this protocol was the establishment of a CU. In 1995, it was agreed at the Association Council meeting that the CU between the EU and Turkey would go into effect on January 1, 1996.

This chapter analyzes the EU-Turkey CU and is structured as follows. After discussing issues related to trade in industrial goods in Sect. 3.2, Sect. 3.3 discusses TBT, Sect. 3.4 – competition policy, and Sect. 3.5 – IPR. Section 3.6 reports estimates of the administrative costs incurred by Turkey in adopting and implementing the CU. Section 3.7 discusses trade performance, FDI and problems faced by Turkey during the implementation of the CU. Section 3.8 offers conclusions.

3.2 Customs Union

A CU is usually defined as a form of trade agreement under which certain countries preferentially grant tariff-free market access to each other's imports and agree to apply a common set of external tariffs to imports from the rest of the world. In a CU,

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four sets of issues have to be settled between the parties: coverage of the CU, determination of the CCT, collection of CCT revenue and allocation of CCT revenue. In the case of the EU-Turkey CU, the parties agreed from the outset that the CU should be restricted to industrial goods, that Turkey should accept the external tariff of the EU, that the CCT revenue would be collected by each party at the initial port of entry, and that the CCT revenue would accrue as income to the party collecting that revenue.

The Turkey-EU CUD of 1995 required Turkey to eliminate all customs duties, quantitative restrictions, charges with an equivalent effect to customs duties, and all measures with an equivalent effect to quantitative restrictions in trade of industrial goods with the EU as of January 1, 1996. In addition, Turkey was required to adopt the CCT of the EU against third-country imports and adopt all of the preferential agreements the EU has concluded and will conclude with third countries. As a result of these requirements, all of the industrial goods except for products of the ECSC complying with EU norms can circulate freely between Turkey and the EU. For ECSC products, Turkey signed an FTA with the EU in 1996, and as a result ECSC products have received duty-free treatment between the parties since 1999. Finally, it is important to note that the CU does not deal with agriculture and services, but according to the CUD, processed agricultural products are subject to special tariff arrangements.

According to Togan (1997), prior to the formation of the CU in 1994, the economy wide NPR in trade with the EU amounted to 10.2 % and in trade with third countries to 22.1 %. Among the 49 tradable goods industries of the 1990 Turkish input–output table, there were three industries that had an NPR higher than 50 % in trade with the EU, and 33 industries had an NPR less than 20 %. In the case of trade with third countries, there were five industries which had an NPR higher than 50 % and 28 industries had an NPR less than 20 %. With the formation of the CU, NPRs have decreased substantially in almost all of the sectors. The economy-wide NPR during 2001 in trade with the EU amounted to 1.3 %. There was one industry that had an NPR higher than 50 %, nine industries had positive NPR less than 50 %, and for 39 industries, the NPR was 0 % in trade with the EU. On the other hand, in the case of trade with third countries, the average NPR has amounted to 6.9 %. There was one industry which had an NPR higher than 50 %, 13 industries had an NPR less than 50 % but more than 10 %, and for three industries the NPR was 0 % in trade with third countries.

While the average NPR decreased from 10.2 % in 1994 to 1.3 % in 2001 for the EU, the average NPR decreased from 22.1 % to 1.3 % for Israel and the CEE countries that the EU had an FTA with. For developing countries that are granted GSP treatment, the average NPR decreased from 22.1 % in 1994 to 2.7 % in 2001. Finally, for countries like the US, Japan and Canada, for which the EU applies the CCT, average NPR decreased from 22.1 % in 1994 to 6.9 % in 2001. Thus, regarding access to the Turkish market, as a result of the formation of the CU, almost all countries in the world have benefited from reductions in NPR in Turkey.

Regarding the access of Turkish goods to the EU market, the EU had already abolished the nominal tariff rates on imports of industrial goods from Turkey on

September 1, 1971. However, at that time, certain exceptions were made. The EU had retained the right to charge import duties on some oil products over a fixed quota and to implement a phased reduction of duties on imports of particular textile products. The trade of products within the province of the ECSC has been protected by the EU through the application of NTM especially anti-dumping measures.

The primary effect of a CU is the expansion of trade flows among member countries, often at the expense of trade with non-members. This expansion is usually decomposed into trade creation and trade diversion. When trade diversion dominates trade creation, the CU tends to be welfare reducing. In the case of Turkey, the CU has offered the opportunity to adopt a more liberal trade regime since the CCT is lower than the pre-CU tariff. Thus, there is less potential for switching suppliers. As a result, the potential for trade diversion has been reversed. While domestic producers face more competition from non-members, the effect has been offset by consumer gains resulting from lower prices and by tariff revenues collected on imports from non-members.

The CUD requirements also apply to customs reform. Prior to the formation of the CU, Turkey had quite a complicated import regime. The Turkish Customs Administration was a traditional paper-based customs organization and declarants had to go to customs offices to register declarations. Since almost all shipments had to be physically inspected, the process at customs was very intrusive and time consuming. It often led traders to pay substantial facilitation money to speed up the process or to gain favor with customs officials in charge of their inspections.

Since the formation of the CU, Turkey has applied customs rules similar in substance to those contained in the EU's Customs Code. With the new Customs Law, Turkish customs legislation has been adjusted to both international and EU standards. Currently, the Turkish Customs Administration is fully automated and 99 % of customs processes are conducted through computers via the BILGE (SCHOLAR) system. As part of its trade facilitation work, it is now able to carry out its control processes without having to open every single cargo shipment while retaining effective monitoring of the flow of goods and duties payable.

3.3 Technical Barriers to Trade

There are essentially two ways to eliminate TBT: harmonization and mutual recognition. The harmonization approach has been pursued intensively within the EU. As emphasized by the European Commission (2000), for a new member country, the elimination of TBT in trade with the EU requires (i) harmonization of the country's technical legislation with that of the EU's, (ii) the establishment of quality infrastructure comparable to that of the EU, encompassing the operators and operation of standardization, testing, certification, inspection, accreditation and metrology, and (iii) the development of a market surveillance and import control system as in the EU. On the other hand, under mutual recognition, countries agree to recognize each other's standards and conformity assessment procedures. But this

approach based on mutual trust by the parties requires as a minimum a relatively high degree of harmonization of standards and testing procedures.

The CUD required that Turkey incorporate the EU instruments relating to the removal of TBT into its internal legal order within 5 years, and the list of these instruments was to be laid down within a period of 1 year. Furthermore, effective cooperation was to be achieved in the fields of standardization, metrology and calibration, quality, accreditation, testing and certification. Thus, the CUD required that Turkey adopt the harmonization approach in order to eliminate TBT.

Since the formation of the CU, Turkey has, to a very large extent, harmonized its standards with European and international ones. It has also harmonized its technical legislation with that of the EU, in particular in the New Approach area. There are problems with the Old Approach area, as there is no formal agreement on the transposition of the *acquis* in Turkey as it has been evolving systematically. On the other hand, harmonization of technical legislation in the non-harmonized sphere has been incomplete for very long time, limiting the free movement of goods in this sphere. For the non-harmonized area, Turkey adopted a regulation on mutual recognition as foreseen by the EU, but it entered into force as recently as January 1, 2013.

The establishment of quality infrastructure was a lengthy and complex process in Turkey. Until the formation of the CU, the country had neither the infrastructure nor the required technical knowledge. Establishing public awareness of the problem, acquiring the necessary knowledge and establishing the infrastructure took quite some time. But as of 2013, a relatively well functioning quality certification system has been in place in Turkey, comprised of the Turkish Standards Institution (TSE), the Turkish Accreditation Body (TÜRKAK) and the National Metrology Institute (UME).

A major difficulty faced during this period was obtaining the right to assign notified bodies that would be recognized by the EU. Note that the notified bodies are independent testing houses, laboratories, or product certifiers authorized by the EU member states to perform the conformity assessment tasks specified in directives. Turkey has received the right to assign notified bodies that would be recognized by the EU only by virtue of the Association Council Decision No 1/2006 of 2006.

The development of a market surveillance and import control system, as in the EU, became even more challenging than establishing quality infrastructure. Again, the reasons are various. A successful consumer product safety related market surveillance system requires independence, visibility, a uniform surveillance policy, a uniform enforcement policy, the integration of market surveillance and import controls, stronger regions, more acting power for inspectors, and sufficient technical infrastructure. In addition, there were problems with the implementation of the import control system. As a result, until recently, the Turkish market surveillance and import control system could not be developed as in the EU, and the continuation of these problems has adversely affected the elimination of TBT in trade with the EU.

3.4 Competition Policy

In Turkey there was no specific competition legislation and thus no competition policy enforcement for a very long time. The CUD required Turkey to adopt the EU competition rules, including measures regarding public aid, within 2 years.

Turkey did so in December 1994 when it adopted the Law on the Protection of Competition and established the CA, which has administrative and financial autonomy. The CA aims to ensure the formation and development of markets for goods and services in a free and sound competitive environment, to observe the implementation of the Competition Law, and to fulfill the duties assigned to it by the Law. The CA has played an important role in moving the Turkish economy forward towards greater reliance on competition-based and consumer-welfare oriented market mechanisms. According to the European Commission's Turkey Progress Reports and the OECD (2005), Turkey has shown significant progress on the anti-trust issue. The Authority has a clear track record on the implementation of the competition rules. Furthermore, it is the advisory institute for the actions of public enterprises granted by two circulars issued by the Prime Minister's office in 1998 and 2001. All ministries have to receive the opinion of the CA about draft laws, by-laws, regulations and communiqués regarding issues that fall under the scope of Competition Law.

Article 34 of CUD bars Turkey and the EU member states from providing state resources to aid undertakings or economic sectors where doing so distorts or threatens to distort competition between the EU and Turkey, and under Article 39 (2) of CUD, Turkey must adapt all of its existing aid schemes to EU standards and comply generally with the notification and guidelines procedures established by the EU to control aid provided by member states. Article 37 of the CUD stipulates that within 2 years of implementing the CU, Turkey must adopt the necessary EU rules for the implementation of the provisions relating to state aid. Despite these deadlines, the required rules have not been adopted until recently. It was only in October 2010 that the law on state aid and subsidies were adopted by Parliament. The law foresees the establishment of the State Aid Monitoring and Supervisory Council along with the State Aid General Directorate for ensuring the effective application and enforcement of state aid rules under the CUD. But unfortunately, as of the end of 2013, the EU State Aid rules could not be implemented as the implementing regulations had not yet been adopted.

3.5 Intellectual Property Rights

Article 31 and Annex 8 of the CUD stipulated that Turkey must ensure adequate protection and enforcement of IPR and implement the Uruguay Round Agreement on TRIPS by 1999. Furthermore Turkey had to adopt legislation by January 1, 1999

to secure the patentability of pharmaceutical products and processes. In addition Turkey had to accede to various international conventions.

To satisfy the requirements of the CUD, Turkey has been making substantial efforts to align its legislation with the acquis since 1995. The TPI was established in 1994. It is the main administrative body responsible for granting patents and utility models, registering designs, and dealing with trademarks, circuit topographies and geographical indications. The Turkish Patent Law went into effect in 1995, and in 2003 the Legislation on the Establishment and the Functions of TPI was promulgated. By 2013, Turkey was party to the various conventions on IPR mentioned in the CUD.

IPR enforcement is a challenging task in any country as it requires specific skills. There is a need for special courts for the settlement of disputes and for efficient services of public prosecutors, judges, patent attorneys and police. Regarding special courts, it should be emphasized that specialist judges with experience in patent and other IPR matters are essential in order to deliver reliable and predictable decisions on questions of infringement and validity as well as on damages payable by infringers. Similar considerations also hold for public prosecutors and police. Patent attorneys must have profound knowledge of natural sciences and the ability to communicate new technical concepts or developments on paper. While they are expected to be knowledgeable in a specific legal area, they must also have a deep knowledge of domestic and international law as well as the national laws of other countries. The patent attorney's most important role is to be able to apply his/her specialized legal and scientific knowledge to a new technical solution. He or she must also be able to properly write a patent specification and patent claims to lay the foundation for a new industrial property right. The patent attorney is also expected to provide advice on know-how licenses, including drafting license agreements or providing advice on the rights of employed inventors and advising clients on technical developments.

In Turkey, IPR holders whose rights have been infringed upon may take action to protect themselves through civil and criminal procedures against the infringer. Civil procedures include actions for the cessation of infringement and prevention of possible infringement, as well as measures for the compensation of moral and material damages, including indemnities and the appropriation of unfair profits made by the infringer.

The judicial infrastructure in IPR enforcement is made up of courts, offices of the public prosecutor, and the MoJ. The MoJ is responsible for the establishment of IPR courts, ensuring the effective operation of these courts, and training judges, public prosecutors and other staff. Until recently, Turkey had 23 specialized IPR courts. In parts of Turkey where there are no specialized courts, ordinary ones, designated by the Supreme Board of Judges and Public Prosecutors, can rule on intellectual property rights cases, and a Court of Appeals has been established for these cases. Enforcement authorities include police, municipal police and gendarmerie. In cases of IPR violations, criminal proceedings start at the moment the complaint is registered. The police have already established an IPR office within its General Directorate. Anti-smuggling and organized crimes departments are based

within the general financial crimes departments of the police and gendarmerie, and they are authorized to handle related cases.

Turkey must provide measures, procedures and remedies necessary to ensure that the enforcement of IPR is fair and equitable. But this is not an easy task. The establishment of the enforcement mechanism took quite some time. As of 2013, the task was not yet complete. Although a relatively large number of judges, lawyers, enforcement body staff, police force members and customs officers have been trained in IPR-related issues, the number of trained personnel is still insufficient and the training of the personnel needs to be strengthened.

3.6 Administrative Costs of Implementing the Customs Union

To estimate the budgetary costs of assuming the obligations of the CU, we used the detailed budget figures of different public institutions. While most of the budget figures come from the MoF for the period 1994–2009, expenditure data for institutions such as TÜRKAK, CA, TPI and UME were obtained directly from each institution. The data was aggregated under the headings of personnel expenditures, current expenditures and investment expenditures. Since the figures were given in nominal terms, we used the GDP deflator (price index) to convert all figures to 2009 prices. Next we used the average TRY/EUR exchange rate of 2009 to obtain the figures in terms of 2009 EUR.

Some of the institutions such as the Under-Secretariat for Foreign Trade, the Under-Secretariat of Customs and the Turkish Standards Institute were operating before the start of the CU, and they employed a large number of personnel. The CU put pressure on them to employ additional staff as well as to train the staff in issues related to relevant acquis. In addition, they had to increase investment expenditures. As a result, when considering the budgetary costs of assuming the obligations of the CU for these institutions, we concentrated on their total expenditures consisting of personnel expenditures, current expenditures and investment expenditures. Noting that during the 1990–2009 period, Turkish real GDP increased at an annual rate of 3.9 %, we assumed that the total real expenditures of these institutions would have increased at the same annual growth rate as that of real GDP if the CU had not been implemented. The excess of actual to predicted expenditures of these institutions for the period 1996–2009 was then considered to be the budgetary cost of assuming the obligations of the CU.

On the other hand, institutions such as TÜRKAK, CA, TPI and UME were established either around 1995 or thereafter as a result of the requirements of the CU. They had to increase their personnel and investment expenditures considerably in order to meet the demands for additional personnel, training, and building the required infrastructure. As a result, in the case of these institutions, we considered

total expenditures consisting again of personnel and current and investment expenditures over a period of 5 years after their establishment.

In some cases (for example, IPR enforcement), institutions such as the Ministry of Interior or MoJ were also involved, but it was not possible to derive the costs related to fulfilling the requirements of the CU from their budget data. In those cases, we took the cost figures of the relevant institutions from the studies of the Secretariat General of EU Affairs (2001, 2003, 2007).

Finally, we added the funding received from the EU (EU contribution) to the sum of the above figures, since these funds were not included in the budget figures. The calculations reveal that the costs of assuming the obligations of the CU have amounted to EUR 1,065.1 mn, and the share of the EU contribution in the total cost came to 8.83 %.

3.7 Trade Performance, FDI and Criticism of the CU

3.7.1 Trade Performance

In 1995, Turkish exports to the EU15 amounted to USD11.1 bn (51.2 % of Turkey's exports), while imports from the EU15 amounted to USD16.9 bn (47.2 % of Turkey's imports).[1] With the formation of the CU, the share of imports from the EU15 in total imports went up from 47.2 % in 1995 to 53 % in 1996, but then started to decrease, reaching 31 % in 2008. Similarly, the share of exports to the EU15 in total exports went up from 51.2 % in 1995 to 54 % in 1999, but then started to decrease, reaching 39.2 % in 2008. A comparison of the average growth rate of imports from the EU15 prior to the formation of the CU with those observed after its implementation reveals that it declined from 14.2 % in 1991–1995 to 3.9 % in 1996–2001, but thereafter it increased to 19.8 % in 2002–2008. On the other hand, the effect of the CU on exports also seems to be of limited importance initially. Whereas the annual average growth rate of exports to the EU15 was 9.6 % in 1991–1995, it declined to 6.5 % in 1996–2001, but then increased to 18.6 % in 2002–2008.

While total exports declined by 22.6 % in 2009 (during the great recession), the decline in exports to the EU15 amounted to 24 %. Similarly, while total imports declined by 30.2 % in 2009, imports from the EU15 declined by 23.6 %. Both exports and imports recovered in 2010 and thereafter. While exports to the EU15 amounted to USD49.4 bn in 2012, forming 32.4 % of total exports, imports from the EU15 amounted to USD73.1 bn, forming 30.9 % of total imports.

The above considerations reveal that the formation of the CU between Turkey and the EU led to increases in exports to the EU only after an adjustment period of

[1] For reasons of analytical consistency we compared data for EU15 over the entire 1990–2012 period despite subsequent EU enlargements.

almost 5 years. Similar considerations also hold for imports from the EU. The reasons may be various. First, the formation of the CU did not lead to substantial decreases in trade barriers on the EU side, as the EU had abolished the nominal tariff rates on imports of industrial goods from Turkey long before the formation of the CU (in 1971). With the formation of the CU, certain quotas applied by the EU were abolished but the EU retained the right to impose anti-dumping duties. Second, Turkey started to take measures in order to eliminate TBT only after 2003. Third, during the 1990s, economic crises began to affect the Turkish economy with increasing frequency. Periods of economic expansion have alternated with periods of equally rapid decline. Fourth, with substantial decreases in trade barriers on the Turkish side in 1996, an increase in imports was inevitable as long as it was not accompanied by a real devaluation of the Turkish Lira. But there was essentially no change in REER during 1996, and thereafter the REER appreciated until the currency crisis of 2001, when the REER depreciated considerably. Thereafter, the REER started to appreciate again, stimulating import growth and hampering the growth of exports and thus leading to substantial trade balance deficits. Finally, we note that the appreciation of the EUR against the USD led to increases in the USD value of EU exports which is reflected in higher USD trade values of Turkish imports from the EU.

3.7.2 FDI

Turkey was not successful in attracting FDI inflows for a very long time. From 1990 to 1995, annual FDI inflows amounted to only USD745 mn. This poor record was caused by economic and political uncertainties surrounding the country and the enormous institutional, legal and judicial obstacles faced by foreign investors in Turkey. Foreign-owned firms had been subject to special authorizations and sectoral limitations. According to the Foreign Investment Advisory Service (2001a, b), seven major problems impeded the operations of foreign enterprises until the early 2000s: (i) political instability, (ii) government hassle, (iii) a weak judicial system, (iv) heavy taxation, (v) corruption, (vi) deficient infrastructure and (vii) competition from the informal economy. During the period of 1996–2000, average annual FDI inflows amounted to USD846 mn. Thus, there was no substantial improvement after the formation of the CU. The FDI inflows started to increase only after 2001, and reached USD20.2 bn in 2006, USD22.1 bn in 2007 and USD19.8 bn in 2008. This considerable improvement seems to be the result of the EU's 2004 decision to begin membership negotiations with Turkey, the liberalization measures introduced after the 2001 crisis and the implementation of the privatization program after 2002. During the period of great recession in 2009–2010, FDI inflows amounted on average to USD8.9 bn, increasing to USD16 bn in 2011 and then decreasing to USD13 bn in 2012. The EU has been the largest source of origin over the past 10 years, accounting for three-quarters of total FDI inflows.

Although the investment climate in Turkey has improved considerably over the last 7 years, the change is still not reflected in various international competitiveness studies such as the Doing Business Survey (World Bank 2013), which ranked Turkey 69th out of 189 countries. On the other hand, according to the OECD (2006) study, Turkey's most restrictive sectors are air and maritime transport, followed by electricity, and its most liberal sectors are in manufacturing, together with some services subsectors such as telecommunications, insurance services and part of business services. Finally, according to the Services Trade Restrictiveness Database of the World Bank summarized by Borchert et al. (2012a, b), the most restrictive service sectors are professional services, transportation services and retail trade.

3.7.3 Criticism of the Customs Union

The EU-Turkey CU has not been without its critics. The policy stakeholders emphasize the following problems, as pointed out by Akman (2010). First, the EU's trade partners that have concluded an FTA with the EU or are in FTA negotiations with the EU refrain from concluding an FTA with Turkey despite the 'Turkey Clause' included in the FTA concluded by the EU. Second, there are asymmetric effects in trade agreements concluded by the EU and Turkey. In particular, Turkey cannot negotiate an FTA with third counties on similar terms like the EU did. Third, there are latecomer effects. In particular, Turkey can conclude an FTA only after the EU has concluded an FTA. As a result an FTA with Turkey is concluded usually after a couple of years after the conclusion of an FTA with the EU. This puts Turkish exporters at a disadvantage with regards to EU exporters, who can obtain preferential status by penetrating into third country markets several years earlier. Fourth, imports from third countries by way of trade deflection via the EU induce tariff revenue losses for Turkey, an issue that has not received sufficient attention in the customs modernization process. Fifth, the EU has its own priorities reflected in its FTA that are concluded, and these agreements do not take into account Turkey's special interests. Sixth, Turkey cannot enter into an FTA with third countries with which the EU has not accorded a deal. Finally, it has been emphasized that international road transport has been hampered by the bilateral quota system and visa restrictions imposed by certain EU member states.

3.8 Conclusions

The EU-Turkey CU of 1995 has been a major instrument of integration into the EU and global markets for Turkey, offering the country powerful tools to reform its economy. It has credibly locked Turkey into a liberal foreign trade regime for

industrial goods and holds the promise of Turkey's participation in the EU internal market for industrial products. As a result, Turkish producers of industrial goods have become exposed to competition from imports and they operate within one of the largest FTAs for industrial products in the world. They are now protected by tariffs from external competition to exactly the same extent as EU producers are and as such, face competition from duty-free imports of industrial goods from world-class pan-European firms. In return, Turkish industrial producers have duty-free market access to the European Economic Area (EU and EFTA).

Fulfilling the requirements of the CU has been quite challenging. Turkey has introduced major reforms. But it has faced difficulties, in particular when trying to eliminate the TBT in trade with the EU, adopting and implementing the EU's competition policy provisions on state aid and ensuring adequate and effective protection of IPR. In those cases, the process of fulfilling the requirements of the CU even after 17 years is not complete.

One lesson that can be derived from the Turkish experience is that trade liberalization achieved through a preferential trade agreement such as the EU-Turkey CU can successfully move the economy from a government-controlled regime to a market-based one. Another issue is related to the existence of political will on the side of policymakers to reform the economy. In Turkey there was political will to achieve the goal of EU economic integration on the path to becoming a full member of the EU. As a result, in addition to opening up its markets to industrial goods imports from the EU, accepting the EC's CCT, and adopting all of the preferential agreements the EU has concluded with third countries, Turkey has also accepted the EU's customs provisions, its harmonization approach to the elimination of TBT, its competition policy, its IPR acquis and its commercial policy regulations. Although the administrative costs of implementing the requirements of the CU have been quite substantial, Turkey has incurred these costs in the hopes of becoming a full member of the EU. Moreover, there was almost no resistance to the integration process on the part of Turkish public.

Other countries may not have the prospect of EU membership as an incentive, but those countries may still be interested in integrating with the EU in order to achieve relatively high but sustainable economic growth, as measured by growth in real per capita income. In such a situation, the country could try to sign a FTA with the EU, but adopt, as emphasized by Messerlin et al. (2011), only those policies of the EU that are considered pro-growth.

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Chapter 4
Manufactured Exports and FDI

Khalid Sekkat

4.1 Introduction

For a long time most SEMC were weakly integrated with the world economy. In the early 1980s, the region's ratio of manufactured exports to GDP was the lowest, at 2.68 %, compared to all other regions except LAC. The region's ratio of FDI was less clear due to the volatility of such flows.

Developing countries are poorly integrated with the world economy because of restrictive trade and exchange rate policies. Sachs and Warner (1995) found that more liberalized economies shift more rapidly to the export of manufactured goods and away from exports resulting from agriculture, forestry, fishing, mining, and the production of oil and gas.

Sekkat and Varoudakis (2002) found that the trade policy reforms of some SEMC increased the share of manufactured exports in their economies. Achy and Sekkat (2003) reached a similar conclusion regarding the impact of exchange rate policy. But such reforms might not be sufficient, according to other economists. Companion policies are needed to further strengthen a given investment climate. These include the provision of adequate infrastructure (Wheeler and Mody 1992), and strong economic and political institutions (Schneider and Frey 1985; Henisz 2000a, b). Meon and Sekkat (2004) and Sekkat and Veganzones (2007) confirmed the importance of these factors for the region.

Many policymakers in SEMC began altering their economic strategies in the mid-1980s, a process which accelerated during the 1990s. Their aim was to make their economies more efficient and, hence, to foster growth and development. These countries moved away from their previous import substitution strategies. They

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lowered trade barriers, privatized state-owned firms, and reformed the foreign-exchange markets. Policymakers also introduced other reforms aimed at improving the business climates of their respective countries.

As result, SEMC became increasingly integrated with the world economy, according to 2005–2009 figures. The region's share of manufactured exports-to-GDP, at 15 %, placed it third after the euro-area, which was at 26 %, and EAP (30 %), and before ECA (12 %), SSA (10 %), South Asia (9 %) and LAC (11 %).

There are notable differences between countries. Algeria is far behind the remaining countries in the region. Its manufactured exports as a share of GDP are less than 1 %. Jordan, Israel and Tunisia lead the pack with a ratio of more than 25 % each. These three countries' ratios also rose the most between 1995–1999 and 2005–2009 – between 6 and 13 percentage points. The improvements in Algeria and Egypt were mediocre (Sekkat 2012).

In this chapter, we investigated whether there is a link between the evolution of the region's integration in the world economy and the reforms implemented (or not). We focused on manufactured exports and FDI. Drawing on literature (for its survey see Sekkat 2012 and De Wulf and Maliszewska 2009), we sought to disentangle the contribution of trade policy, exchange rate policy, quality of governance and availability of infrastructure. We conducted the analysis on a set of 17 countries (Algeria, Cyprus, Egypt, France, Greece, Israel, Italy, Jordan, Lebanon, Libya, Malta, Morocco, Portugal, Spain, Syria, Tunisia and Turkey) over the period 1985–2009.

The rest of the chapter is organized in three sections. In Sect. 4.2, we estimated of the impact of each determinant discussed above on the variable of interest. In Sect. 4.3 we offered an assessment of the future evolution of these variables of interest under different scenarios. Sect. 4.4 concludes.

4.2 Empirical Analysis

4.2.1 Manufactured Exports

Our basic specification was based on Sekkat and Varoudakis (2000). Assuming that the exporter was small with respect to the market for manufactures, profit maximization led to the following specification of exports of manufactures:

$$\begin{aligned}\mathrm{Log(Xit\ /\ GDPit)} = {} & \alpha 0\mathrm{i} + \alpha 0\mathrm{t} + \alpha 1 * \mathrm{Log(Demandit)} + \alpha 2 \\ & * \mathrm{Log(REERit)} + \mu\mathrm{it} \end{aligned} \tag{4.1}$$

where X_{it}/GDP_{it} was the ratio of manufactured exports to gross domestic product for year t and country i; α_{0i} was country i's fixed effect (i.e. Dummy); α_{0t} was year t's fixed effect (i.e. Dummy); $Demand_{it}$ was demand for manufactures; $REER_{it}$ was

country i's real effective exchange rate for year t, where an increase in $REER_{it}$ stood for an appreciation of the exporter's currency; μ_{it} was the error term.

We scaled down exports by GDP to correct for the differences in countries' sizes. $Demand_{it}$ was defined as the EU's manufactured value added to its GDP. For a given country, $REER_{it}$ was defined such as:

$$Log(REER) = \sum_{j=1}^{j=10} \left[w_j * Log\left(e_j * \left({}^{CPI}/_{CPI_j} \right) \right) \right] \tag{4.2}$$

where CPI was the Consumer Price Index of the country; CPI_j was the Consumer Price Index of the country's partner j; e_j was the nominal bilateral exchange rate of the country as regard partner j; w_j was the weight of the j-th partner in the bilateral trade of the country. The weighting pattern referred to the ten largest trade partners excluding oil exporting countries.

These explanatory variables are standard in the literature. All have a well-defined expected impact on manufactured exports. The coefficient of the real exchange rate should be negative because an increase in $REER_{it}$ means an appreciation of the exporter's currency. We expected a positive coefficient for $Demand_{it}$. We constructed these two variables as well as the dependent using the World Development Indicators of the WB.

We sought to disentangle the impact of trade policy, exchange rate policy, quality of governance, and availability of infrastructure on manufactured exports. There are indicators that can proxy each of these variables (Sekkat 2012). We had to disregard some of them because they consisted of only one observation, or too few, per country (e.g. the WB DB indicator). Using them would have reduced the degree of freedom and the quality of the inference. This still left us with more than one indicator to proxy a given variable. Introducing all of them into the same specification raised multicollinearity issues. It affected the significance of the coefficient and made it difficult to decide which variable had the best explanatory power. Since the purpose of our analysis was to assess the impact of different scenarios of reforms, the specifications had to be as parsimonious as possible (Ledolter and Abraham 1981).

To select among the explanatory variables, we started with a specification which explained the variable of interest in terms of the basic determinants mentioned above, country fixed effects and time fixed effects. Such a basic specification was the one leading to the best quality of the fit (as measured by the Adjusted R^2). Then, we re-estimated the basic specification without the fixed effects but we added an indicator for each of the above-mentioned dimensions. The preferred regression was the one with the combination of indicators that led to the closest quality of fit to the one with fixed effects. We conducted estimations on the set of 17 countries listed in Sect. 4.1 over the period 1985–2009. In the regression without fixed effects, we introduced a dummy which took the value 1 in case of SEMC and zero otherwise.

This empirical strategy led to the selection of the following additional explanatory variables. To gauge of the level of infrastructure, we calculated the ratio of the

number of road kilometers to the surface of a given country. As a proxy for the degree of openness in a given country, we used an indicator published by Economic Freedom Network (Gwartney et al. 2008) called 'Freedom to Trade Internationally'. It covers 140 countries and since 2000, it is published annually. From 1970 to 2000, it was published every 5 years. We used indices developed by Kaufmann et al. (1999) to quantify the quality of governance. The authors classify dimensions of governance into six independent clusters and aggregate them into six indices (government effectiveness, regulatory burden, rule of law, control of graft, voice and accountability, and lack of political violence). We used the simple average of the six indicators to assess the quality of governance. These additional indicators' coefficients were positive.

Table 4.1 presents the estimation results of five specifications of Eq. 4.1. The first specification included only the basic determinants and the country and time dummies. Specifications 2–4 were the same as the first but excluded the dummies and included each of the additional determinants separately. Specification 5 included all explanatory variables but the dummies. Specification 1 had a high quality of the fit (Adjusted R^2 equals 0.93). The estimated coefficients were significant with the expected sign. None of the other specifications had a better quality of the fit than the first but such quality increased as long as additional explanatory variables were included. Specification 5 had the highest quality of fit

Table 4.1 Determinants of manufactured exports (From own estimation based on WBWDI and UNCTAD databases)

Variable	Specif. 1 (Fixed effects)	Specif. 2 (OLS)	Specif. 3 (OLS)	Specif. 4 (OLS)	Specif. 5 (OLS)
Constant		2.132	−4.181	−2.177	−1.103
		2.251	**−4.867**	**−2.806**	**−1.308**
REER	−0.517	−0.975	−0.726	−1.254	−1.047
	−4.043	**−2.139**	**−2.613**	**−3.627**	**−3.773**
Demand	−2.102	1.778	−0.245	0.171	0.770
	−0.566	**3.316**	**−0.508**	**0.379**	**1.787**
Openness		3.204			1.554
		11.473			**4.488**
Governance quality			0.271		0.107
			16.598		**4.067**
Infrastructure				0.842	0.563
				14.844	**8.686**
Dummy: SEMC		0.209	1.433	1.725	2.087
		1.496	**9.726**	**11.331**	**11.854**
Number of observation	278	278	278	258	258
Adjusted R^2	0.93	0.36	0.52	0.47	0.64

Note: The dependent variable is the ratio of manufactured exports to GDP. Specification 1 includes country and time dummies. All variables are in log except Governance quality and Dummies. Standard-Errors are heteroskedastic-consistent. T-statistics are in bold

(Adjusted R^2 equals 0.68) after Specification 1. The former was preferred over the latter because of its better economic meaning. We used it for simulation.

All estimated coefficients of Specification 5 were significant with the expected sign except the one pertaining to foreign demand which exhibited a negative sign. This coefficient was non significant because of a potential co-linearity with one of the other indicators. While it was significant with the expected sign in the first specification, it became non-significant once we introduced any of the additional explanatory variables. Since it was not a variable over which a domestic authority can have control, we disregarded the coefficient of foreign demand. The other estimated coefficients imply that exchange rate depreciation fosters manufactured exports as does a higher openness of the economy, a better quality of institutions, and better infrastructure.

4.2.2 *Foreign Direct Investment*

Empirical studies differ with respect to FDI specifications. The differences concern both the variables to be included in the specification and their definition (nominal versus real measures and levels versus growth rates). A common specification relates the ratio of FDI to GDP to per capita GDP and the growth rate of GDP (UNCTAD 1998):

$$\begin{aligned}\mathrm{Log}(FDI_{it}/GDP_{it}) = \beta_{0i} + \beta_{0t} + \beta_1 * \mathrm{Log}(GDP\,per\,capita_{it}) + \beta_2 \\ * \mathrm{Log}(GDP\,Growth_{it}) + \eta_{it}\end{aligned} \tag{4.3}$$

where FDI_{it}/GDP_{it} is the ratio of FDI inflows to GDP for year t and country i; β_{0i} is country i's fixed effect; β_{0t} is year t's fixed effect; η_{it} is the error term.

We scaled down FDI by GDP to correct for the differences in countries' sizes. The explanatory variables used were in real terms. The relationship between per capita GDP and FDI is debated in the empirical literature (Asiedu 2002). Schneider and Frey (1985) found GDP per capita reflects the wealth of the resident of the host country and, hence, demand effectiveness. The expected sign of the corresponding coefficient is, therefore, positive. Edwards (1990) interpreted GDP per capita as the inverse of the return on capital in the host country. Then the coefficient of GDP per capita in the FDI equation is expected to be negative. A higher real per capita income is supposed to decrease the attractiveness of a country to foreign investors. The growth rate of GDP reflects the dynamism of the host country and its future market size. An increase in this growth rate characterizes a dynamic economy which may be more attractive for investors. The four variables are from the WB's WDI.

To select additional explanatory variables, we adopted the same empirical strategy as in the case of manufactured exports. Equation 4.3 is first estimated as it stands. Then, it is re-estimated without the fixed effects but with an indicator for

each dimension of the investment climate. We added the same indicators as for manufactured exports (road infrastructure, 'Freedom to Trade Internationally', and the quality of governance). Based on findings of Borensztein et al. (1998) and Sekkat and Veganzones (2007), we also introduced a human capital indicator. We used the percentage of population over 25, which has reached secondary school, an indicator borrowed from Barro and Lee (2010). The expected sign of the coefficients of these explanatory variables was positive except for openness. The coefficients of 'Freedom to Trade Internationally' could be positive or negative, depending on the motive of the investors. If the motive was only to serve the host market, the coefficient had to be negative because openness means more competition on this market. This is known as the 'tariff jumping' motivation for FDI. If the objective was to serve external markets, the coefficients had to be positive since openness means easier access to foreign markets. Higher openness can give access to cheaper imported inputs.

Given the volatility of FDI over time, we kept time dummies in order to get precise estimates of the coefficients of interest. The F-test confirms the necessity of having time dummies in the regressions. Table 4.2 presents the estimation results of six specifications of Eq. 4.3.

The first specification included only the basic determinants and the country and time dummies. Specifications 2–5 were the same as the first but excluded country dummies and included each of the additional determinants separately. Specification 6 included all explanatory variables except the country dummies. Specification 1 had a high quality of the fit (Adjusted R^2 equals 0.78). None of the other specifications had a better quality of the fit than the first one but such quality increased as long as additional explanatory variables were included. Specification 6 had the highest quality of the fit (Adjusted R^2 equals 0.62) after Specification 1. The former was preferred over the latter because of its better economic meaning. We used it for simulation in Sect. 4.3.

All estimated coefficients of Specification 6 were significant with the expected sign except the ones pertaining to GDP growth and education which were non-significant. The coefficient of the per capita GDP was significant and negative which was coherent with the interpretation of Edwards (1990), i.e., GDP per capita as the inverse of the return on capital in the host country. The other estimated coefficients implied that a higher openness of the economy, greater availability of infrastructure, and better quality institutions increase the attractiveness of a given country to foreign investors.

4.3 Prospective Analysis

We considered four scenarios of future developments (until 2030) in the area of manufactured exports and FDI in SEMC:

Table 4.2 Determinants of FDI inflows (From own estimation based on WBWDI and UNCTAD databases)

Variable	Specification 1 (Fixed effects)	Specification 2 (OLS)	Specification 3 (OLS)	Specification 4 (OLS)	Specification 5 (OLS)	Specification 6 (OLS)
Constant		3.7473	4.5141	−0.0188	−0.3905	5.1407
		6.6947	**7.3705**	**−0.0300**	**−0.5870**	**9.8103**
GDP per capita	−0.5826	−0.4411	−0.7278	−0.1573	−0.0947	−0.7601
	−1.3377	**−9.2963**	**−10.4115**	**−2.1537**	**−1.4421**	**−11.7014**
GDP Growth	−0.7490	1.7972	−0.2233	3.0604	0.3732	−0.3311
	−0.4915	**1.1463**	**−0.1218**	**1.3957**	**0.1938**	**−0.2310**
Openness		2.4191				1.2093
		6.2936				**2.3748**
Governance quality			0.2618			0.2288
			13.2800			**9.6348**
Education				0.6565		−0.3356
				1.5498		**−0.9850**
Infrastructure					0.1323	0.1432
					9.6467	**6.8797**
Dummy: SEMC		−0.3536	0.5784	−0.3563	−0.1442	0.6933
		−3.7938	**4.5883**	**−3.9456**	**−1.3187**	**6.5068**
Number of observation	368	348	368	348	345	325
Adjusted R^2	0.78	0.32	0.49	0.17	0.25	0.62

Note: The dependent variable is the ratio of FDI to GDP. Specification 1 includes country and time dummies. All other specifications contain time dummies. All variables are in log except GDP growth, education, governance quality, infrastructure and dummy. Standard-Errors are heteroskedastic-consistent. T-statistics are in bold

- Reference scenario, i.e., continuation of present trends: future changes in the explanatory variables were assumed to be the same as between 2005 and 2009
- EU integration scenario, i.e., further integration of SEMC with the EU: future changes in the explanatory variables were assumed to be the same as in the best performing SEMC during the period 2005–2009
- Regional integration scenario, i.e., less integration with the EU but greater intra-regional integration: future changes in the explanatory variables were assumed to equal half the changes in the EU integration scenario
- Pessimistic scenario: future changes in the explanatory variables were assumed to be the same as in the worst performing SEMC during the period 2005–2009

4.3.1 Manufactured Exports

Taking into account the estimated coefficients of Specification 5, we investigated the impacts of possible changes to exchange rates, openness, governance quality, and infrastructure density on the ratio of manufactured exports to GDP.

Table 4.3 presents the results of the four scenarios for eight SEMC. It contains two panels. The first panel gives, for each country, in addition to the observed ratio of manufactured exports to GDP (average for years 2005–2009), the expected ratios

Table 4.3 Observed and predicted (in 2030) ratio of manufactured exports to GDP in individual prospective scenarios (From own estimation based on WBWDI and UNCTAD databases)

Country	Observed (2005–2009)	Reference	EU integration	Regional integration	Pessimistic
Level (% of GDP)					
Algeria	0.57	0.56	0.74	0.64	0.44
Egypt	4.02	4.01	5.24	4.58	3.15
Israel	26.33	26.25	34.36	29.99	20.63
Jordan	25.69	25.61	33.52	29.26	20.12
Morocco	12.08	12.04	15.76	13.75	9.46
Syria	7.42	7.39	9.68	8.45	5.81
Tunisia	30.09	30.00	39.27	34.27	23.57
Turkey	13.54	13.49	17.66	15.42	10.60
Change (Percentage points)					
Algeria		0.00	0.17	0.08	−0.12
Egypt		−0.01	1.23	0.56	−0.87
Israel		−0.08	8.03	3.66	−5.71
Jordan		−0.08	7.83	3.57	−5.57
Morocco		−0.04	3.68	1.68	−2.62
Syria		−0.02	2.26	1.03	−1.61
Tunisia		−0.09	9.17	4.18	−6.52
Turkey		−0.04	4.13	1.88	−2.93

under each scenario in 2030. The second panel gives the change, with respect to the observed average. Under the reference scenario, i.e., continuation of present trends, the ratio of manufactured exports to GDP remained almost unchanged in every country. This implied that for the ratio to increase in the future, policymakers in these countries must do more than in the past. They need to further improve the price competitiveness of their exports, open up their economies, strengthen their institutions, and build and maintain infrastructure. An increase in the price competitiveness of exports (through real effective exchange rate depreciation) can be achieved via nominal exchange rate depreciation, production cost reductions, productivity increases, or a combination of all of the above. Openness means lower tariffs and NTM. If policymakers achieved improvements in these respects, the second scenario (further integration with the EU) suggested an increase in the ratio of manufactured exports to GDP in every country except Algeria.

Algeria's low manufacturing base (the ratio of value added of manufactures to GDP is 9 % in Algeria, 23 % in Jordan and 28 % in Turkey on average over the period 2005–2009) prevented it from benefiting from the above mentioned improvements. We found the increase to be the highest (above 7 percentage points) in Jordan, Israel and Tunisia. Under the third scenario (less integration with the EU but greater intra-regional integration), the increases were less important than under the second scenario but remained economically significant in Jordan, Israel and Tunisia (around 4 percentage points).

The pessimistic scenario showed a negligible deterioration in Algeria and Egypt and a significant deterioration in Jordan, Israel and Tunisia (around 5 percentage points). The deterioration was higher than the improvement expected under the third scenario (less integration with the EU but greater regional integration) and much higher than the improvement under the first scenario, i.e., continuation of present trends. The gains from the above mentioned improvements were high but potential losses from deterioration were even more substantial, demonstrating the risk of delaying reforms.

4.3.2 Foreign Direct Investment

Taking into account the estimated coefficients of Specification 6 in Table 4.2, we investigated the impact of changes to explanatory variables, i.e., GDP per capita, openness, governance quality and infrastructure, on the ratio of FDI to GDP. We considered the same four scenarios as for manufactured exports (see Sect. 4.3.1).

Table 4.4 presents the results of the four scenarios for eight SEMC. It contains two panels. The first panel shows, for each country, in addition to the observed ratio of FDI to GDP (average for years 2005–2009), the expected ratios under each scenario in 2030. The second panel shows the change with respect to the observed average. Under the reference scenario, i.e., continuation of present trends, the ratio of FDI to GDP decreased slightly in every country except Jordan where the decrease was large. If policymakers were to increase GDP per capita, openness,

Table 4.4 Observed and predicted ratios of FDI to GDP across scenarios (From own estimation based on WBWDI and UNCTAD databases)

Country	Observed (2005–2009)	Reference	EU integration	Regional integration	Pessimistic
Level (Percentages)					
Algeria	1.37	1.28	1.51	1.44	1.03
Egypt	7.44	6.98	8.25	7.83	5.62
Israel	6.13	5.75	6.8	6.45	4.63
Jordan	16.71	15.68	18.53	17.6	12.63
Morocco	3.25	3.05	3.6	3.42	2.45
Syria	2.52	2.36	2.79	2.65	1.9
Tunisia	6.21	5.82	6.88	6.54	4.69
Turkey	2.94	2.76	3.26	3.1	2.22
Change (Percentage points)					
Algeria		−0.09	0.14	0.07	−0.34
Egypt		−0.46	0.81	0.39	−1.82
Israel		−0.38	0.67	0.32	−1.5
Jordan		−1.03	1.82	0.89	−4.08
Morocco		−0.2	0.35	0.17	−0.8
Syria		−0.16	0.27	0.13	−0.62
Tunisia		−0.39	0.67	0.33	−1.52
Turkey		−0.18	0.32	0.16	−0.72

governance quality and infrastructure, the second scenario (further integration with the EU) suggested an increase in the ratio of FDI to GDP in every country. The increase was the highest (almost 2 percentage points) in Jordan and non-negligible in Egypt, Israel and Tunisia (above 0.6 percentage points). Under the third scenario (less integration with the EU but greater intra-regional integration), the increases were smaller than under the second scenario but remained non negligible in Egypt, Israel and Tunisia (above 0.3 percentage points) and significant in Jordan (around 0.9 percentage points). The pessimistic scenario showed a decrease in every country. The most affected economy is Jordan's (−4 percentage points) followed by Egypt's, Israel's and Tunisia's (around −1.5 percentage points). The deteriorations were much higher than the improvements expected under the most optimistic scenario (further integration with the EU). It was also much higher than under the first scenario, i.e., continuation of present trends. Much like for manufactured exports, the results support the necessity of reforms.

The increases (or decreases) in the ratio of FDI to GDP did not account for possible increases (or decreases) of the total volume of FDI in the world. On the one hand, there is a mechanical effect by which, other things being equal, higher world FDI translates into a higher ratio of FDI inflows to GDP in each country. On the other hand, Meon and Sekkat (2012) suggested that higher world FDI might benefit countries with weaker business climates more than those with stronger ones. Hence, we may have underestimated our simulated increase (or decreases).

4.4 Conclusions

In this chapter we investigated the link between the evolution of the region's integration in the world economy and the reforms implemented (or not). It focused on manufactured exports and FDI and examined the evolution, determinants and prospects of such integration. Drawing on the literature, we disentangled the contribution in terms of trade policy, exchange rate policy, governance's quality, and infrastructure availability. For each variable of interest, the analysis offered, first, an estimation of the impacts of the determinants and, second, an assessment of their future evolution under different scenarios.

Econometric analysis confirms the role of exchange rate depreciation, degree of openness of an economy, the quality of institutions, and the density of infrastructure in fostering manufactured exports. A more open economy, with availability of infrastructure and quality institutions increases the attractiveness of a country to foreign investors.

Taking into account the estimated coefficients, we investigated the impacts of possible evolutions of the relevant explanatory variables on the ratio of manufactured exports to GDP and the ratio of FDI to GDP. We considered four scenarios: continuation of present trends, deeper integration with the EU, less integration with the EU but greater intra-regional integration and a pessimistic scenario where changes in the explanatory variables were assumed to be the same as in the worst performing SEMC during the period 2005–2009.

We found further integration of SEMC with the EU would have the highest positive impact on the ratio of manufactured exports to GDP and on the ratio of FDI to GDP. The ratio of manufactured exports to GDP increased in every country except Algeria. The increase was the highest (above 7 percentage points) in Jordan, Israel and Tunisia. The ratio of FDI to GDP increased in every country. The increase was the highest (almost 2 percentage points) in Jordan and non negligible in Egypt, Israel and Tunisia (above 0.6 percentage points). Both ratios deteriorated under the first scenario, i.e., continuation of present trends and under the pessimistic scenario. The deteriorations were much higher than the improvements expected under the scenarios of further integration with the EU. The gains from improvements in exchange rate management, openness of the economy, and quality of institutions and infrastructure were found to be high but the losses from deteriorations were even more substantial. We found delaying reforms carries a high risk of deterioration.

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Appendix: Descriptive Statistics

Table 4.5 Manufactured exports equation (From own estimation based on WBWDI and UNCTAD databases)

Variables	Mean	Std Dev	Minimum	Maximum	Median
Manufactured exports/GDP	−2.323	1.078	−6.390	−0.488	−2.017
REER	0.033	0.219	−0.437	1.464	0.000
Demand	−1.577	0.166	−1.820	−1.332	−1.626
Openness	−0.460	0.203	−1.152	−0.190	−0.422
Governance quality	2.942	4.413	−8.051	7.877	4.435
Infrastructure	−0.654	1.400	−3.294	2.270	−0.191

Note: All variables are in log except governance quality

Table 4.6 FDI equation (From own estimation based on WBWDI and UNCTAD databases)

Variables	Mean	Std Dev	Minimum	Maximum	Median
FDI/GDP	−1.868	1.005	−6.997	0.118	−1.845
GDP per capita	8.597	1.058	6.787	10.071	9.053
GDP Growth	0.035	0.033	−0.135	0.187	0.036
Openness	−0.465	0.212	−1.152	−0.190	−0.411
Governance quality	2.194	4.503	−8.051	7.877	3.691
Education	0.289	0.134	0.046	0.587	0.292
Infrastructure	1.098	1.606	0.037	9.675	0.716

Note: All variables are in log except GDP growth, education, governance quality and infrastructure

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Chapter 5
Private Sector Development

Richard Woodward and Mehdi Safavi

5.1 Introduction

This chapter deals with the larger issues of private sector development in the SEMC, and starts with an overview of relevant developments in the region, including a look at the business climate. It then reviews the recent record with respect to FDI before turning to an examination of a number of cultural factors that may influence the development of the private sector, and concludes with a discussion of possible future developments.[1]

Although in all SEMC, governments have passed rules and regulations to ease and accelerate private sector development in 2000s, there have been differences with regard to the pace of change. Additionally, popular uprisings that started in the area in December 2010 in Tunisia and subsequently affected Egypt, Libya, and Syria have changed the countries' priorities, which have shifted to establishing a new political order or stabilizing the current one, with economic reform having to take a back seat at least in a short term horizon. As Table 5.1 demonstrates, the legacy of past policies, combined with the meanderings of more recent ones, has left the SEMC with quite a wide range of private sector shares in GDP.

Among them, Israel has not only the most business-friendly policy environment but also the most developed (in terms of private sector GDP per capita) private sector, accounting for almost 80 % of employment, while the least developed one is in Palestine where, although the share of the private sector is above 60 % of GDP,

[1] In preparing this chapter the Authors have had to rely on ten country background reports (Hatem 2011; IMRI 2011a, b, c; ITCEQ 2011; MAS 2011a, b, c, d, e; hereinafter referred to as 'country reports') and the accuracy of the findings contained therein. Both this chapter and country background reports consist of desk research.

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Table 5.1 Private sector share of GDP, % in SEMC (From country reports)

Country	Share of GDP
Algeria	35[a]
Egypt	na
Israel	74
Jordan	85
Lebanon	79
Libya	na
Morocco	88
Palestine	62
Syria	59
Tunisia	na
Turkey	na

[a]Note: Share of industrial production

that share has actually been falling since 2000. (Moreover, the fragility and dependency of its economy on outside forces – both the Israeli occupation and foreign aid – raise doubts about how meaningful the discussion about that share is). Israel's private sector has attained such a high level of development despite the fact that, like several other countries in the region (including Algeria, Egypt, Libya and Syria), the country followed a socialist, state-led development path for several decades.

Indeed, countries in which private sector development is lagging, such as Algeria, Libya and Syria, continue to follow this course. In the case of Algeria and Libya, this is due largely to the extreme degree in which the state-owned gas and oil industry dominates these countries' economies, and although all three of them have introduced certain reform and liberalization measures, they remain very modest in scope. The Syrian government made some market-friendly reforms in the 2000s, and although the country's business environment remained a very unfriendly one for private sector development, the private sector share in the economy showed impressive growth in that period. The environment for private sector development in Algeria and Libya is not at all favorable. In Algeria private sector development has lagged behind that observed in almost all the SEMC, and in Libya, the other major oil country in the region, some degree of liberalization (accompanied by a privatization program of limited extent) only began in 2003. However, just as in the case of Algeria, the dominance of the state-owned oil sector ensures that the private sector share of the economy remains small.

Developments have been more positive in Tunisia, Lebanon, and Turkey. Tunisia experienced rapid economic growth in 1990s and 2000s; however, the private sector investment has slowed since the 1990s, with development in that period being largely state-led. In Morocco, while the post-colonial period beginning in 1956 saw the creation of a large number of state-owned corporations in many sectors of the economy, since the introduction in 1990 of a policy of economic liberalization and privatization, the public sector share of GDP has been reduced significantly. The private sector dominates the economy of historically conflict-torn

Table 5.2 The ease of doing business ranking for SEMC, 2009 and 2013 (From World Bank 2010, 2013)

Countries	2009	2013
Israel	30	35
Tunisia	58	51
Turkey	60	69
Egypt	99	128
Jordan	107	119
Lebanon	109	111
Morocco	114	87
Palestine	133	138
Algeria	136	153
Syria	144	165
Libya	na	187

Lebanon, but since the mid-2000s subsidies to state-owned entities have been increasing rather than decreasing. Policies implemented in Turkey since 1985 have promoted the privatization of public enterprises, with a sharp increase in the number of privatizations since 2005 – the date of the beginning of Turkey's negotiations on accession to the EU, which necessitates a withdrawal of the Turkish state, in full or in part, from economic activity and also substantially increased investor interest in the country. Summing up, for several countries in the region, the private sector remains rather underdeveloped.

According to the 2011 WB DB report (World Bank 2010), the SEMC are very diverse with respect to the business climate (see Table 5.2). Israel is by far the best-performing country in the region in this respect and ranks 35th in the world. In particular, the Israeli economy excels in the categories of 'getting credit' and 'protecting investors', where it placed 13th and 6th respectively. Tunisia and Turkey are in second and third place in the region, ranking 51st and 69th in the world, respectively. The poorest performing countries are Palestine, Algeria, Syria, and Libya. Table 5.2 also shows how the situation in the SEMC has evolved over the course of 4 years. In eight of the eleven countries we can see a relative decline, which has been particularly dramatic in Egypt, Algeria, Syria, and Jordan. Surprisingly, despite being one of the countries affected by the Arab Spring, the situation has improved in Tunisia, and the most dramatic improvement has come in Morocco.

5.2 Foreign Direct Investment

Recent years have seen a great deal of effort to attract FDI in the SEMC. Figure 5.1 shows the total net inflow of declared FDI into the SEMC along with the number of announced projects between 2003 and 2010, based on data from the most recent ANIMA-MIPO report (unfortunately growing somewhat dated). The global economic crisis negatively affected FDI flows to the region in 2009, and the Arab

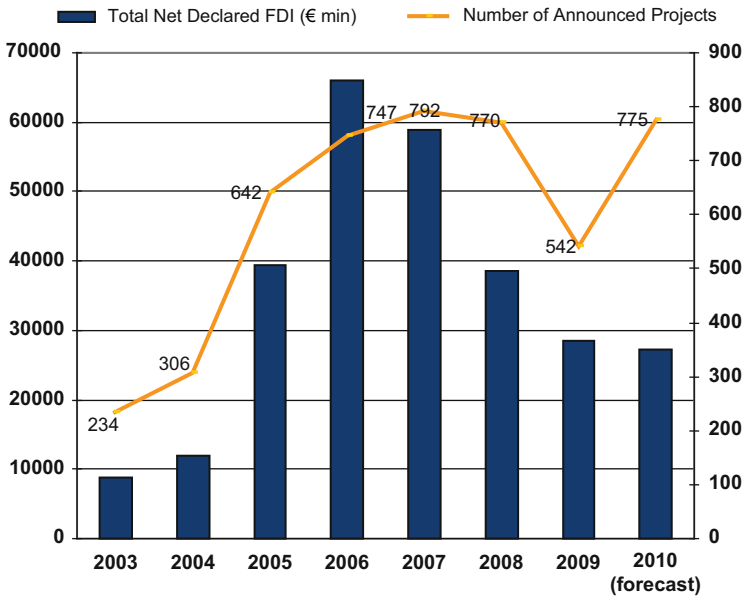

Fig. 5.1 Inward FDI into SEMC (From ANIMA-MIPO 2010)

Table 5.3 SEMC FDI stocks, 2011 (From CIA World Factbook 2012)

Country	FDI stock, USD bn	Country rank in the world	FDI stock per capita (USD)
Turkey	99.0	36	1307.7
Israel	82.8	43	10,927.8
Egypt	75.7	45	896.1
Morocco	45.0	56	1389.7
Tunisia	32.5	60	3084.9
Algeria	24.5	65	691.6
Jordan	22.6	66	3709.2
Libya	19.6	69	2994.4

Spring that followed in 2011 also did not help matters. Although the region recovered in terms of the number of FDI projects at the end of the decade, it had not yet recuperated in terms of the amounts invested (while in 2010 43 % growth in the number of announced projects was forecasted, the amount was forecasted to decline by 8 % in comparison with 2009). Table 5.3 takes us beyond the year-by-year perspective of FDI inflows, showing accumulated FDI stocks (according to CIA estimates) as of 2011 (data were not available for all SEMC; Lebanon, Syria and Palestine are missing). The table shows that countries with the most diversified economies (such as Turkey and Israel) tend to attract more investment than those whose economies are more concentrated in a single sector, even if that sector is very attractive to investor (as in the case of hydrocarbons).

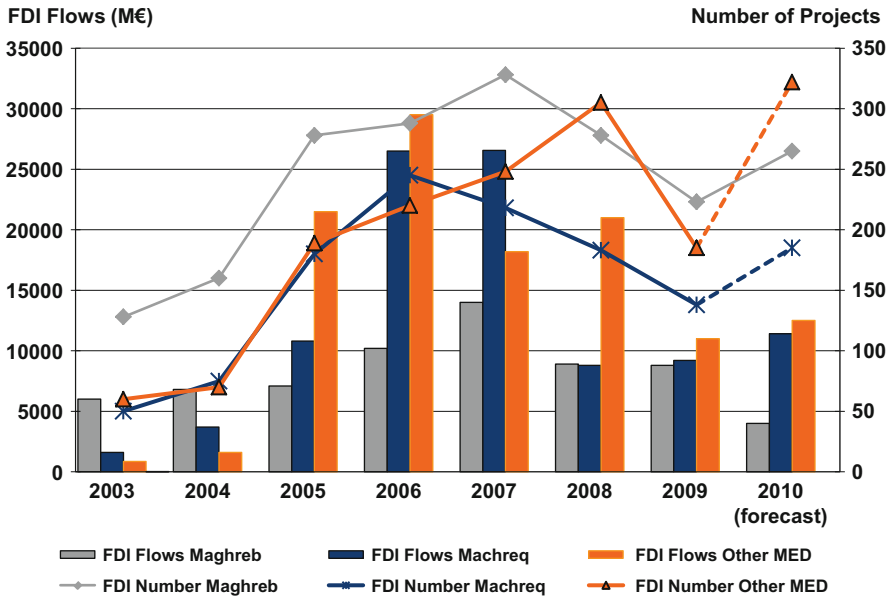

Fig. 5.2 FDI into three different regions of SEMC (From ANIMA-MIPO 2010) (Note: Other MED means Turkey and Israel)

Comparison among the countries in different sub-regions can give us a better understanding of FDI inflows into the area. The Maghreb, consisting of five North African countries (Algeria, Libya, Morocco, Mauritania and Tunisia), is still awaiting recovery from the worldwide credit crunch, while the Machreq[2] and other SEMC (Israel and Turkey) have already recovered and show signs of growth (Fig. 5.2).[3]

Figure 5.3 shows that foreign investors are counting more and more on partnerships with domestic businesses. For example, in the three quarters of 2010, 362 partnership projects (local representatives, franchises, joint production and R&D projects, etc.) were announced, which represented 59 % growth over 303 for the whole of 2009.

While we have seen that overall FDI in the Maghreb has been slower to revive than elsewhere, Table 5.4 shows the strong appetite of European businesses for

[2] Sometimes spelled Mashregh, Machreq, or Machreck, the term refers to a large area in the Middle East bounded by the Mediterranean Sea and Iran. It is the companion term to Maghreb. Although there is no clear definition, it commonly includes Egypt, Sudan, Jordan, Lebanon, Syria, Palestine, Iraq, and the countries of the Arabian Peninsula.

[3] The data used in Figs. 5.2 and 5.3 and Table 5.4 come from the ANIMA-MIPO (Mediterranean Investment & Partnership) Observatory, which, since 2003, has monitored more than 5,000 announcements of FDI and partnerships. The latter are defined by ANIMA-MIPO as projects where a foreign corporation enters a domestic market either through an identified partner or by opening local representation (see ANIMA-MIPO 2011).

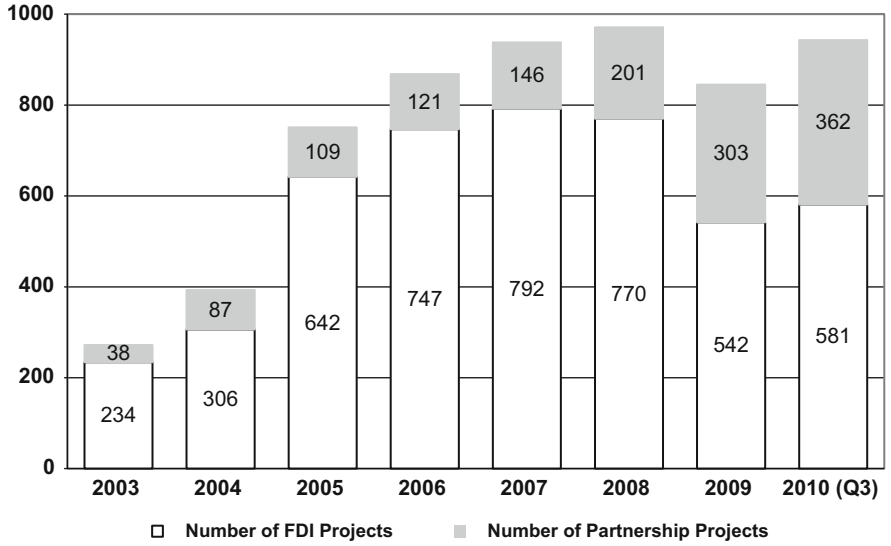

Fig. 5.3 Inward FDI into three different sub-regions of SEMC (From ANIMA-MIPO 2010)

Table 5.4 Total number of detected partnership projects, per region of origin and region of destination (From ANIMA-MIPO 2010)

Origin/target	Machreq	Maghreb	Other SEMC	% of total
Europe	142	392	171	52
Gulf countries	72	40	9	9
SEMC	31	31	16	6
Other countries	56	62	26	11
US and Canada	90	101	128	23
% of total	29	46	26	100

partnerships with Maghreb-based counterparts in terms of the number of detected partnership projects.

As we see in Fig. 5.4, in the Maghreb sub-region, Tunisia and Morocco both show recoveries after initial downturns due to the global crisis in terms of the number of FDI projects, while Algeria continued to show a steady decline in 2012. Mauritania has had some particularly spectacular years, in the mid-2000s and again more recently.

Finally, in Table 5.5 we present data on FDI as a % of GDP for all SEMC since 1997 (inward FDI into the region was very low before the second half of the 1990s – see Chap. 4). The table also shows that the region as a whole was affected by the global downturn toward the end of the 2000s, and that the Arab Spring had a particularly strong effect on Egypt and Tunisia (data are not available for Syria and Libya, the other two countries affected). For two countries, Algeria and Syria,

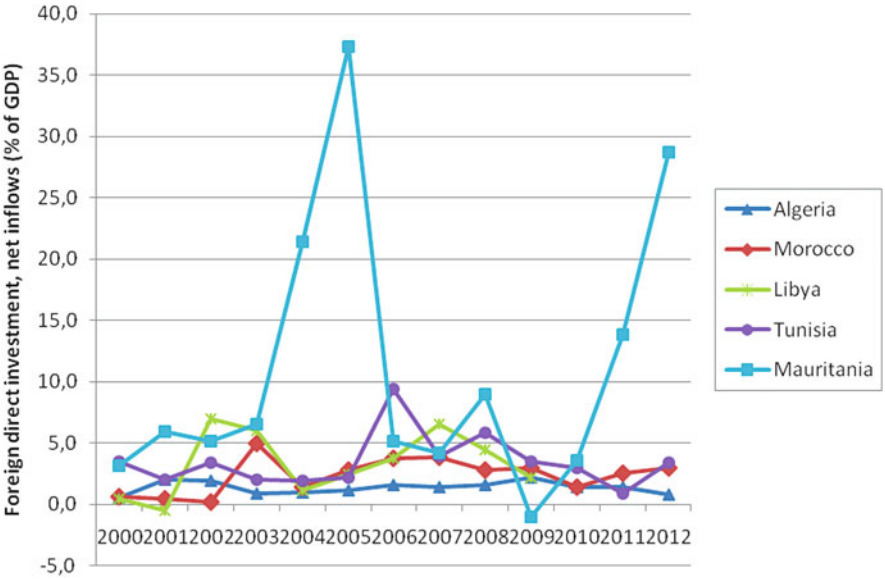

Fig. 5.4 Net Inflow of FDI for the Maghreb Countries, % of GDP (From WB WDI, 2000–2012)

which can perhaps be regarded as the poorest reformers in the group, this situation has not changed since the 1990s. Turkey's FDI boom in the mid- to late 2000s was relatively moderate, measured against GDP. All of the others, including Libya, saw significant increases in FDI as % of GDP at some point during the 2000s. For Palestine, this period came in the late 1990s; the 2000s were rather bleak, although the situation improved again in 2009. Measured in GDP terms, the biggest – and longest – FDI booms were seen in Lebanon and Jordan.

5.3 The Informal Sector

De Soto (1989, 2000) has shown how the barriers bureaucrats place in the way of recognition of the property rights of entrepreneurs (especially poor and middle-class ones) in developing countries force them into the informal sector and impede the growth of firms in that sector. He has also argued that the formalization of the property rights of informals and 'squatters' could lead to the unleashing of enormous potential for growth and entrepreneurship. All too often, however, governments take exactly the opposite route; instead of recognizing squatters' rights, they take away the land and property that tribal peoples have had for hundreds of years (see, for example, Roy 2002, 2010). For these reasons, it is worth briefly considering the role of informal entrepreneurship in SEMC.

Table 5.5 Inward FDI flows, annual, 1997–2012, % of GDP (From UNCTADstat, http://unctadstat.unctad.org)

Country	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Algeria	0.54	1.26	0.60	0.51	2.01	1.87	0.93	1.03	1.05	1.53	1.24	1.52	1.96	1.43	2.57	1.48
Egypt	1.04	1.19	1.11	1.24	0.54	0.72	0.31	2.62	5.47	8.95	8.76	5.76	3.57	2.98	−0.48	2.80
Israel	1.85	1.79	3.78	5.58	1.44	1.40	2.79	2.32	3.59	10.49	5.27	5.38	2.29	2.39	11.08	10.41
Jordan	4.98	3.92	1.92	10.79	3.05	2.49	5.36	8.21	15.76	24.21	15.42	12.46	9.68	6.19	1.47	1.40
Lebanon	11.54	6.71	5.12	5.78	8.50	7.14	14.44	11.57	15.19	13.96	13.47	14.48	13.91	12.77	3.49	3.79
Libya	−0.20	−0.50	−0.38	0.37	−0.33	0.66	0.55	1.07	2.28	3.65	7.48	5.05	4.55	5.35	na	na
Morocco	3.23	1.00	3.43	1.14	7.44	1.19	4.65	1.57	2.78	3.73	3.73	2.80	2.15	1.43	2.57	2.83
Palestine	4.40	5.53	4.51	1.48	0.49	0.27	0.47	1.16	1.00	0.40	0.61	0.87	4.52	na	na	na
Syria	0.49	0.47	1.48	1.37	0.52	0.53	0.77	1.30	2.05	2.02	3.09	2.98	2.66	2.32	na	na
Tunisia	1.93	3.37	1.77	4.01	2.44	3.90	2.34	2.26	2.69	10.64	4.54	6.74	4.27	3.76	1.92	0.35
Turkey	0.32	0.35	0.31	0.37	1.71	0.47	0.56	0.71	2.08	3.80	3.41	2.67	1.37	1.21	12.42	0.72

Information on the individual countries indicates that shares of the informal sector in GDP are generally high in the region, ranging between 20 % and 40 % for the countries on which we have data., Lebanese statistics show a share of 25.3 % (Lebanon Central Administration of Statistics 2007). The situation in Egypt appears to be much more serious. According to Hatem (2011):

> [s]ome recent studies on Egypt have suggested the number of informal enterprises is above 80% of the total number of production units in the country, and the associated employment is about 40% of the workforce. (Attia 2009)

In Syria, the informal sector is growing and is represents about 30 % of employment and 40 % of GDP. It employed about 48 % of the rural poor and 31 % of the urban poor as of 2003–2004 (Bureau for Gender Equality 2010). While some efforts have been made in countries such as Lebanon and Morocco to improve the situation by making it easier to operate small businesses and microenterprises, other countries have adopted a more repressive approach. An example of this can be found in the case of Algeria, which has attempted to combat the growth of informal activity by restrictive regulations on the use of cash in transactions.

5.4 Cultural Factors That May Influence Private Sector Development

In this section we will consider the role of two cultural factors that may influence private sector development: entrepreneurship and the role of Islamic finance and Islamic rules on interest.

Entrepreneurship. Although in the SEMC, the state has often restricted the activities of the private sector, favoring the development of the public sector, entrepreneurship is an age-old tradition in the region, which is the home of the bazaar; maritime merchant trade here dates back thousands of years, to the Phoenicians. Culturally, the region has a high degree of respect for private property and entrepreneurial behavior, although the dominant role of the family business sometimes leads to difficulties for the development and growth of businesses.

The entrepreneurship literature often makes a distinction between necessity-based entrepreneurship, in which individuals are self-employed due to a lack of employment opportunities, and opportunity-based entrepreneurship; i.e., the entrepreneurship described in the work of Schumpeter (1934) and Kirzner (1997), in which a firm is founded as a result of a conscious choice to take advantage of a perceived business opportunity. Typically, it is the latter type that is responsible for employment growth and innovation, whereas the former is oriented exclusively to survival. We expect to see relatively higher shares of necessity-based entrepreneurship in lower-income countries. What is the situation in the SEMC?

Table 5.6 presents the situation in all the countries for which GEM data exist for at least one of the years 2008–2010. In the case of Egypt there is an inexplicable and huge shift from opportunity-based to necessity-based entrepreneurship in the space

Table 5.6 Necessity- and opportunity-based entrepreneurship, % of adults in the economy engaged in relevant activity (From GEM Database)

	Opportunity-based entrepreneurship			Necessity-based Entrepreneurship		
Country	2008	2009	2010	2008	2009	2010
Algeria	–	51	–	–	18	–
Egypt	60	–	25	19	–	53
Israel	53	48	55	20	25	24
Jordan	–	35	–	–	28	–
Lebanon	–	60	–	–	18	–
Morocco	–	57	–	–	25	–
Palestine	–	33	33	–	37	32
Syria	–	43	–	–	37	–
Tunisia	–	57	48	–	20	24
Turkey	41	–	47	39	–	37

of just 2 years (such a jump raises questions about the measurement of the phenomenon; however, fortunately we do not observe such discontinuities for the other four countries for which there are data for two or more years – Israel, Palestine, Tunisia, and Turkey). In Palestine, Jordan, Syria, and Turkey, necessity- and opportunity-based entrepreneurship seem to be roughly balanced. In all other countries (i.e., Algeria, Israel, Lebanon, Morocco, and Tunisia), opportunity-based entrepreneurship clearly dominates necessity-based entrepreneurship.

Islam and finance. Finally, we turn to one factor that might be hypothesized to affect the region's private sector development in the future. Do regulations compliant with Islamic law (shariah), which prohibits the taking of interest, impede the development of private sector capital? In most of the countries (excluding Israel for obvious reasons), shariah-compliant investment and business operate alongside conventional banking. However, solely Islamic banks are increasingly using shariah-compliant financial instrument in business.

Although in some countries Islamic banks are refused licenses on account of perceived political affiliation, in other countries like Jordan, Tunisia, and Sudan, the general population has been receptive to Islamic finance as an alternative means of accessing capital and growing businesses (Ilias 2010). Although there have been clashes in recent years between Islamic fundamentalist groups and government loyalists in which protesters demand shariah law rule in Jordan, the predominant business climate is open to a mix of conventional and shariah-compliant businesses (International Business Times 2011).

Another example can be seen in Egypt, where, after the 2011 uprising, Islamic fundamentalist groups have called for implementing shariah rules in Egypt, while the military authorities resist this. As for Lebanon, the government has started a process of reforming the 2004 shariah-compliant banking law to boost shariah-compliant banks' ability to compete with conventional banks (El Baltaji and Hall 2010). Islamic banking represents less than 1 % of USD251 mn of the total assets of banks in Lebanon. Nevertheless, the central bank of Lebanon is attempting to

access a perceived large demand for Islamic banking that, according to the central bank's first vice governor, can be divided into two groups:

> customers who for religious reasons want to deal with a bank that has an Islamic dimension and customers who benefit from using such a system. (Halawi 2010, p. 3)

In Syria, the establishment of Islamic banks comes as an attempt to diversify the investment sector, and to conform to Shariah laws. In a nationwide survey conducted by Bankakademie International, it was reported that some 34 % of Syrian companies that had not requested a bank loan refused to do so for religious reasons. The size of the Islamic banking market has been steadily increasing year after year. It is estimated that the assets of Islamic banks in Syria were worth over USD265 bn in 2006, with an annual growth rate of 20 %, providing a boost to the Syrian economy (CGAP 2008). In Morocco, to meet hitherto marginal needs, the State has put in place alternative products (with an Islamic reference framework) which banks have recently started using (IMRI 2011a).

It therefore appears that, since none of these countries has banned conventional lending, shariah-compliant banking exists alongside conventional banking and is therefore more likely to have enhanced capital development (by making finance acceptable to people who might otherwise not seek it for religious reasons) than to have impeded it.

5.5 Conclusions

Table 5.7 summarizes some of the key variables for the SEMC.

Looking ahead to what the next two decades may have in store for the SEMC in the area of private sector development, we can consider a number of possible scenarios, which we will now characterize briefly. The decade of the 2000s, as we have seen, brought rapid development in terms of GDP per capita even to the poorer countries of the region. However, the recent political instability in the region, coupled with its general resistance to the democratization trends observed in Latin America and the post-Communist countries of CEE (Woodward et al. 2012), makes the future exceptionally uncertain.

One of the possible political scenarios emerging as a result of the upheaval currently underway in many SEMC is a turn to a more Islamist policy. However, there is no evidence that this would result in policies harmful to the development of the private sector. On the contrary, the experience of Turkey under the relatively moderate Islamist Justice and Development Party (Turkish acronym: AKP) shows that rule by such a party can be pro-developmental in economic terms. The AKP model, in which institutional reform has been driven by the EU accession process, is currently the one that Islamist movements such as the Muslim Brotherhood in Egypt and Hamas in Palestine seek to emulate (Sayigh 2010; Daly 2011; Yezdani 2011). We therefore see no reason to view an Islamist turn in politics as necessarily constituting a threat to private sector development (providing such a turn takes the

Table 5.7 Summary of key variables for private sector development in SEMC (From background reports for private sector share of GDP and employment and share of informal sector in employment, GEM Database for necessity-based entrepreneurship, World Bank 2013 for WB DB rank, WB WDI database for domestic credit to private sector)

Country	Private sector share of GDP (%)	Ease of Doing Business rank (2010)	Share of informal sector in employment	Necessity-based entrepreneurship as share of total entrepreneurial activity
Algeria	35[a]	136	22	18
Egypt	na	94	40	53
Israel	74	29	na	24
Jordan	85	111	na	28
Lebanon	79	113	25	18
Libya	na	na	na	na
Morocco	88	114	37	25
Palestine	62	135	na	32
Syria	59	144	30	37
Tunisia	na	55	na	24
Turkey	na	65	40	37

[a]Share of industrial production

relatively moderate form of Egypt's Muslim Brotherhood rather than the more extreme form of the Salafi/Wahhabi or similar movements), and will ignore this factor in the ensuing discussion of possible scenarios, while noting the importance of EU engagement (as in the case of the Turkish developments).

Rapid development scenario. If peaceful democratic development takes place, with a decrease in corruption and the regulatory burden, then private sector development could take off in an explosive way. This would be signaled by significant increases in the Ease of Doing Business scores, significant progress in privatizing remaining state-owned enterprises, and a fall in the share of the informal sector in GDP, and could entail high rates of entry for new firms, dramatically improved performance of the banking sector in terms of lending to private firms, and diversification of the relevant countries' economies and exports. It would involve dramatically increased FDI, and presumably greater integration with the EU and other world markets as well. It is important to remember, however, that rapid GDP development and rapid private sector development are by no means synonymous (particularly in the case of economies based on oil and natural gas reserves that remain state-owned).

Inertial scenario. Under this scenario, the Ease of Doing Business scores would remain essentially unchanged, further progress in privatization would be stalled, and FDI flows would also remain fairly stable. Such an outcome could be driven by economic policy inertia, which might result from the inability to generate a consensus around a clear political direction in the case of countries which have recently undergone revolutionary uprisings.

Regression scenario. Regression appears to be relatively unlikely for the region as a whole, though we have seen areas of regression for individual countries in

recent years that could continue. A return to a statist or socialistic development model seems unlikely; however, if the polity were to develop along despotic lines, one could expect an increase in corruption and deterioration in the business environment (which could be accompanied by rapid GDP growth in an oil-rich state). This scenario would resemble the development of Russia under Putin in the last decade. Countries in which particularly poor trends have been noted in the last decade and which for that reason might be particularly at risk for regression include Algeria, Lebanon, Libya, Palestine and Syria. Of course, political destabilization could lead to developments that are currently unforeseeable in other countries as well. As a result of deterioration of the business climate and a turn to nationalism and/or protectionism in economic policy, one could expect a decrease in FDI under this scenario (though again, the presence of oil resources in some countries might override this tendency, as has been the case in Putin's Russia). While new firm entry might not vanish, the growth prospects of entrepreneurial start-ups would be limited, start-up activity could largely be limited to necessity-based entrepreneurship, and the share of the informal sector in GDP would rise.

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Part II
Sectoral Studies

Chapter 6
Transport Infrastructure

Robin Carruthers

6.1 Introduction

In this chapter, we estimate the cost of bringing SEMC transport infrastructure to specified standards, and the macroeconomic benefits of those investments. Our estimates have been done for four scenarios. Scenario 1 has benchmarks based on global averages, Scenario 2 - on those of the EU27 countries, Scenario 3 – on the average of countries with the same per capita income, and Scenario 4 - on continuing the insufficient historic rates of transport infrastructure investment as a % of GDP. Our hypothesis is that the outcome of each scenario will be greater if it is associated with an appropriate level of infrastructure investment.

The analyses were made for four transport modes (inter-urban roads, including both paved and unpaved roads, railways, and port berths and airports, including runways and terminals), and four types of investment expenditure:

- improving the condition of current transport infrastructure to bring it up to standards compatible with the relevant scenario;
- upgrading the category of existing infrastructure (such as expanding the capacity of some two lane roads to four lanes) to achieve the standards of the relevant scenario;
- expanding the capacity of infrastructure facilities (such as ports and airports) or extending the length of transport networks (such a road and railways) so as to provide the capacities and quantities indicated by the benchmark values for each of the scenarios, and;
- maintaining the improved, upgraded and expanded facilities and networks in the condition indicated in the scenario benchmarks.

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6.2 Transport Infrastructure Benchmarks for the SEMC

Transport infrastructure is expensive both to construct and maintain, but once in place it delivers economic and social benefits by connecting agricultural, mining, and manufacturing producers to markets. Without reliable and competitively priced freight transport infrastructure and services, nations have little chance of trading their goods on advantageous terms; if they cannot transport products to domestic markets, GDP growth is difficult. Adequate transport infrastructure and services are needed to make both international and domestic markets work.

Infrastructure benchmarks are used to assess whether the quantity and quality of transport infrastructure are compatible with those of similar countries. If the quantity and quality are less than the benchmarks, a second stage of analysis measures the deficiency and how much additional infrastructure would be needed to achieve them. The third stage estimates the cost of the additional investment and whether it is compatible with the funding likely to be available. The last stage is to see whether the additional GDP and international trade is greater than the investment cost.

Previous applications of benchmarking to transport infrastructure have used only one measure of density - per km^2 of area, per capita, or per unit of GDP – although using any one of them yields different results. We combined the three measures into a single index of infrastructure density.

As the data sources for numbers of port berths and airport terminal capacities are insufficiently comprehensive to estimate density standards, different approaches were used for these facilities. For port berths, a benchmark of between 175,000 and 400,000 TEU per berth per year was used, depending on the scenario. Estimates of the demand for TEUs were based on GDP, trade projections, and the share of maritime trade that would be containerized.

For many airports the critical capacity constraint is no longer the number of runways but the capacity of the passenger terminals measured in floor space per peak hour passenger. We projected the peak hour air passenger movements in each of the SEMC, and translated that demand into that for airport passenger terminals.

The quantities of all the types of additional infrastructure that would be needed for each scenario are summarized in Tables 6.1 and 6.2. These are the infrastructure needs that are taken forward into Sect. 6.3 where we estimate the costs of improving, upgrading, expanding, and maintaining the infrastructure networks.

Table 6.1 Transport infrastructure benchmark values (Author's estimates based on data from WB databank and CIA Factbook)

Indicator/ Number of scenario	Scenario 1	Scenario 2	Scenario 3				Scenario 4
	All countries	EU-27	Low-income	Lower-middle-income	Upper-middle-income	High-income	SEMC
Per unit of land area (1,000 km^2)							
Paved roads	170	1,054	20	182	66	363	61
Unpaved roads	75	195	76	100	58	77	58
Railways	8	50	3	7	6	15	4
Runways	0.05	0.18	0.02	0.04	0.03	0.10	0.02
Per unit of population (mn)							
Paved roads	3,261	8,928	336	1,451	2,941	11,636	1,494
Unpaved roads	1,440	1,650	1,294	799	2,609	2,466	1,419
Railways	76	425	44	54	270	487	86
Runways	0.97	3.81	0.29	0.31	1.46	3.15	1.56
Per unit of GDP (USD mn)							
Paved roads	352	243	589	655	368	293	260
Unpaved roads	156	45	2,271	361	326	62	247
Railways	17	12	77	24	34	12	15
Runways	0.11	0.04	0.51	0.14	0.18	0.08	0.10
Normalized value							
Paved roads	100	301	60	107	75	209	49
Unpaved roads	100	132	540	138	155	104	110
Railways	100	311	169	85	145	183	61
Runways	100	234	185	81	127	199	48

Note. Paved roads, unpaved roads and railways are measured in km, and runways in number

Table 6.2 Summary of additions to transport infrastructure for each Scenario (Author's estimates based on WB databank and CIA Factbook)

Type of infrastructure	Units	Scenario1	Scenario 2	Scenario 3	Scenario 4
Paved roads	km	175,000	307,000	301,000	119,000
Unpaved roads	km	33,000	59,000	88,250	30,200
Railways	km	4,275	16,500	4,700	2,250
Runways	km	11	92	17	7
Passenger terminals	m^2	888,000	975,000	888,000	735,000
Container berths	number	45	42	64	38

6.3 Investment Costs and Affordability

6.3.1 Types of Transport Infrastructure Investment

For each scenario we estimated the costs of four different infrastructure investments, and compared the sum of their costs with the GDP projected for the 20 year period when the investments would be made. The investment were for:

- Improving the condition of current infrastructure, i.e., to minimize maintenance costs of the infrastructure itself and the operating costs of the vehicles using it.
- Upgrading categories of current infrastructure to a level adequate to the demands made upon it. Upgrading activities include widening existing roads or upgrading their surfaces, lengthening airport runways, expanding port berths, and increasing the permissible axle load of railways.
- Extending the length of networks or increasing the number of facilities: these costs were estimated by applying the unit costs of new infrastructure to the additional quantities (lengths, sizes, or numbers) needed to reach the benchmarks of each scenario as in Table 6.1. The sums of the additional infrastructure needed to achieve the benchmarks are shown in Table 6.3.
- Maintaining infrastructure, otherwise the benefits of improving the condition, upgrading the category, or expanding the quantity of transport infrastructure will be temporary. For most transport infrastructure we considered two types of maintenance – annual and periodic. The quantities of infrastructure that will need to be maintained are also those in Table 6.3.

6.3.2 Results of the Cost Analysis

The results of the analysis are presented for the total and types of investment, by country and by mode.

As seen in Table 6.4, total investment in Scenario 1 is almost USD675 bn (USD34 bn per year). Scenario 4 has the lowest total investment, just over USD500 bn (USD26 bn per year), about three quarters that of Scenario 1. Scenario 2 would need more than USD1,200 bn (USD60 bn per year), about double that of

Table 6.3 Total transport infrastructure for each Scenario (Author's estimates)

Type of infrastructure	Units	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Paved roads	Km	590,442	723,151	717,240	534,924
Unpaved roads	Km	428,495	455,194	484,512	426,351
Railways	Km	28,895	41,073	29,330	26,867
Runways	Km	164	245	170	160
Passenger terminals	m^2	1,575,407	1,664,214	1,575,407	1,419,997
Container berths	Number	126	123	145	119

Table 6.4 Investment total and shares by type of activity (Author's estimates)

Scenario	Maintenance	Upgrading	Improvement	Expansion	Total
	Total investment USD bn				
1	306	61	112	195	674
2	381	111	133	588	1,213
3	362	61	137	343	903
4	238	56	69	147	510
	Annual investment USD bn				
1	15.3	3.0	5.6	9.8	33.7
2	19.0	5.5	6.7	29.4	60.6
3	18.1	3.0	6.9	17.1	45.1
4	11.9	2.8	3.4	7.4	25.5
	Share of total investment (%)				
1	45	9	17	29	100
2	31	9	11	48	100
3	40	7	15	38	100
4	47	11	13	29	100

Table 6.5 Country shares of total investment, % (Author's estimates)

Country	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Algeria	16.7	16.5	9.8	14.6
Egypt	20.0	15.9	19.5	16.8
Israel	2.1	2.4	1.6	2.7
Jordan	2.3	2.0	2.2	2.0
Lebanon	0.8	1.1	0.6	1.0
Libya	5.5	8.9	12.6	9.7
Morocco	9.3	8.6	8.8	8.5
Palestine	0.5	0.3	0.4	0.7
Syria	5.8	5.0	5.9	5.6
Tunisia	4.1	3.6	2.6	3.4
Turkey	33.0	35.7	36.0	34.9
SEMC	100.0	100.0	100.0	100.0

Scenario 1. Scenario 3 would require more than USD900 bn (USD45 bn per year), about one third more than for Scenario 1.

Although Scenario 2 has the highest actual investment, it has the lowest share of investment in maintenance. This is attributable to the 50 % of investment needed for new infrastructure. In contrast, Scenarios 1 and 4 need only 29 % of their investment in new facilities. Scenario 4 compensates by having a high investment share in upgrading (11 %) the existing infrastructure.

Turkey accounts for the highest share of investment (more than one third) in all four scenarios (Table 6.5). Algeria and Egypt have the next highest shares of between 10 % and 20 % but show more variation between scenarios; Egypt has a

higher share in Scenarios 1, 3, and 4 and Algeria has a higher share in Scenario 2. Palestine consistently has the lowest share, ranging only between 0.3 % and 0.5 % of the total. Libya has the highest range of its investment share, from a low of just over 5 % in Scenario 1 to more than 12 % in Scenario 3.

There are two ways of looking at mode shares (Table 6.6): the total investment for each mode, and the share of investment for each mode. Although there are differences in the total investments for each mode, the shares of investment going to each mode are similar between scenarios.

6.3.3 Affordability of Total Transport Investments

We look at the transport investment share of GDP, recognizing that what could be affordable for one country might not be for another with different economic and social objectives.

The investment shares of GDP for the SEMC (Table 6.7) are highest in Scenario 3, with an average of 2.4 % of GDP and a high of more than 4 % for Algeria and Libya. Scenario 4 has the lowest shares with an average of only 0.9 % of GDP. Libya, Algeria, and Syria have the highest shares.

The analyses presented here refer only to levels of investment in transport and their impact on GDP and trade. But the investment impacts will not be fully realized unless they are accompanied by policies that encourage transport operators to use the infrastructure that is available and transport users to afford those services. We assume that the quality of transport policies vary in line with the quantity of investment in each of the scenarios.

6.3.4 International Comparisons of Transport Investment

One criterion that is often used to assess affordability is to compare the needed investment with the actual investment shares of other countries.

According to ITF (2011), Western European countries reduced their transport investment share of GDP from about 1.5 % of GDP in the 1970s to about 1 % of GDP in the 1980s and to about 0.8 % in 2000s. By 2009, Denmark had the lowest share at about 0.5 % and Spain had the highest at about 1.1 %. Investment of more than 2 % of GDP has rarely been achieved for more than a decade by any country.

The transport investment shares of GDP for the SEMC are comparable to those of the SSA countries (Carruthers et al. 2008 and Table 6.8) rather than to Western Europe. Unlike the ITF countries that have well-developed transport networks, the SEMC and SSA countries are still developing and need investment, particularly in upgrading and expansion.

Table 6.6 Investment by mode and mode shares (Author's estimates)

	Roads	Railways	Airports	Ports	Total	Roads	Railways	Airports	Ports
Scenario	Total investment USD mn					Share of investment, % of total			
1	600,018	37,111	24,585	11,859	673,574	89 %	6 %	4 %	2 %
2	1,097,044	67,509	36,398	11,585	1,212,537	90 %	6 %	3 %	1 %
3	826,171	37,146	25,440	13,759	902,515	92 %	4 %	3 %	2 %
4	600,018	37,111	24,585	11,859	510,343	89 %	6 %	4 %	2 %

Table 6.7 Transport investment as a share of GDP, % (Author's estimates)

Country	Reference	Common	Polarized	Failed
Algeria	2.1	4.5	1.7	1.4
Egypt	1.6	2.3	2.1	1.0
Israel	0.2	0.6	0.2	0.2
Jordan	1.5	2.6	2.0	1.0
Lebanon	0.4	1.2	0.4	0.4
Libya	1.3	4.3	4.0	1.7
Morocco	2.0	3.8	2.6	1.3
Palestine	1.5	3.0	1.5	1.4
Syria	1.9	2.5	2.7	1.4
Tunisia	1.8	3.1	1.5	1.1
Turkey	0.9	2.1	1.3	0.7
SEMC	1.2	2.4	1.6	0.9

Table 6.8 Projected transport infrastructure investment for SSA, % of GDP (From Carruthers et al. 2008)

Country group	Base scenario
Low-income (fragile)	8.2
Low-income (not fragile)	2.9
Resource-rich	1.7
Middle-income	0.7
Average for all SSA	2.0

For the SEMC, the share of total investment allocated to expansion of the transport networks is small (between 20 % and 40 % of the total, with the exception of Scenario 2 with 70 %).

Routine and periodic maintenance expenditure would account for the largest share by type of activity, at 40–50 %. Closer examination of the ITF results shows that much of the maintenance expenditure is underreported.

When the improvement share (about 20 %), which is really deferred maintenance, is added to that of routine and periodic maintenance, the share comes to about 60 %. This is closer to the share estimated for 44 SSA countries by Carruthers et al. (2008).

The balance between road maintenance and investment has remained constant over time in many regions, with maintenance making up 30 % of total road expenditure on average.

The volume of maintenance for road infrastructure in the EU27 increased more rapidly than the volume of investment; the former grew by 25 %, while the latter by around 21 % from 1995 to 2008. This resulted in an increased share of maintenance in total road expenditure: from 26 % in 1997 to 30 % in 2009.

Similar to the growth in volume of investment, the volume of maintenance has grown in CEE. The share of maintenance in total road expenditure declined, from 30 % in 1997 to 27 % in 2009. The increase in maintenance volumes in 2006 and 2007 was partly due to a major increase in road maintenance in Hungary during

those years. In North America, the volume of maintenance has been relatively constant over time, declining from 33 % in 1997 to 31 % in 2009.

The costs of providing transport infrastructure for Scenarios 2 and 3, expressed as a % of GDP, are higher than those achieved by developed counties but comparable to those of other developing countries.

6.4 GDP and Trade Growth Impacts of Transport Investment

Transport activities (as opposed to transport investment) typically account for between 6 % and 10 % of GDP, although this does not include those undertaken on their own behalf by enterprises in other economic sectors.

In addition to these impacts of investment in transport infrastructure on the value of final goods produced within a country, there is a secondary impact via any net increase in international trade (X-M). If the impact on trade is skewed in favor of imports, the impact on GDP will be negative. So if the objective of the transport investment is to bring about higher GDP (or higher GDP growth) then it is important to distinguish between impacts on exports and imports.

6.4.1 Investment in Transport Infrastructure and Economic Growth

Most attempts to assess the impact of transport infrastructure on economic wealth (or of changes in transport infrastructure on changes in economic wealth) make use of a version of the Cobb-Douglas production function. Application of the function consists in estimating the parameters of an infrastructure augmented production function and assumes constant elasticities.

Hurlin (2006) postulated that the elasticities of GDP with respect to quantities of infrastructure investment are not constant, but are based on what are termed network effects. The premise is that the creation of an infrastructure network, not investment in individual links of a network, generates the basis for economic growth. If the elasticities are not constant, application of a Cobb-Douglas type model risks yielding misleading results.

He found that when the stock of infrastructure is low, prior to the creation of a network, investment in infrastructure has the same productivity as investment in non-infrastructure. Once a minimum network is available, the marginal productivity of infrastructure investment is greater than that of other investments. Once the network is well established, the marginal productivity of further investment becomes similar to that of non-infrastructure investments. The boundaries between the productivity levels are known as thresholds, and the model based on them is a ‘threshold effects’ model.

6.4.2 Choice of Threshold Effects Model

We used a version of Hurbin's model that has three development stages (and two thresholds). The thresholds are defined in terms of km per employee of network length, this parameter giving significant break points, these then being used to indicate the stages of network maturity.

The use of network density per employee does not coincide with any of our three benchmark parameters of area, population, and GDP. By adapting the population benchmarks and using some of the results presented in Chap. 1, we can convert Hurlin's elasticities per worker into elasticities per network km. The changes in GDP per worker can then be applied to the network lengths to estimate the changes in GDP that come with network expansion (see Table 6.9).

We adapted the version of the trade gravity model presented in Chap. 2 that uses the LPI as one of the independent variables to relate changes in quantities of transport infrastructure to economic growth and volumes of international trade.

6.4.3 Estimates of Infrastructure Investments Impact on Growth

To derive indications of the impact of the investments on GDP, we applied the GDP growth elasticities to the difference between the current and projected benchmark values (quantity/number of employees) for paved roads and railways for each scenario.

The GDP data does not distinguish between its various components (consumption, government purchases, gross investment and net trade flows), so the GDP growth factors estimated here are inclusive of those estimated for the trade impacts in Sect. 6.4.4. The growth rates are the average annual impact on GDP over the 20 year planning period (Table 6.10).

The largest impact comes from Scenario 2, an average impact of 1.7 % per year on GDP growth. The smallest impact comes from Scenario 4, 0.3 %. The largest impacts by country are for Libya (Scenarios 1–3), Tunisia, Jordan, and Turkey for

Table 6.9 Three stage model: infrastructure thresholds (in km per worker) and elasticities (From Hurlin 2006, Annex Table 4)

Network development	Paved roads	Railways
Thresholds in km per worker		
First threshold	0.360	0.240
Second threshold	0.520	0.423
Elasticities		
First stage	1.140	1.165
Second stage	0.509	0.497
Third stage	1.168	0.854

Table 6.10 Road and rail investment impacts, increase in GDP annual growth rate, % (Author's estimates)

Country	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Algeria	0.8	1.9	1.4	0.5
Egypt	0.7	1.3	0.6	0.3
Israel	1.2	0.5	0.0	0.0
Jordan	1.2	2.1	1.4	0.6
Lebanon	0.0	0.4	0.0	0.0
Libya	0.7	2.2	3.8	0.9
Morocco	1.4	1.6	0.6	0.3
Palestine	0.8	1.9	1.4	0.5
Syria	1.7	1.6	0.6	0.2
Tunisia	1.5	2.4	0.3	0.2
Turkey	0.4	2.0	1.0	0.4
SEMC	0.7	1.7	0.9	0.3

Scenario 2, Algeria, Jordan, and Palestine for Scenario 3, and Jordan, Algeria, and Palestine for Scenario 4. Only in Scenario 2 is there an impact on Lebanon's GDP.

The cumulative sum of increases in GDP over 20 years is greater than the investment cost. The largest ratio of GDP increase to investment costs occurs in Scenario 2, with an average over all of the SEMC of more then 8.5, while the smallest ratio occurs in Scenario 4, less than 3.5. For Scenarios 1 and 3 the ratio is about 6.0.

6.4.4 Estimates of Trade Impacts of Infrastructure Investments

We estimated the average increase for the infrastructure component of the LPI based on the increase (in %) in the quantity of infrastructure: 16 % (Scenario 1), 28 % (Scenario 2), 22 % (Scenario 3), and 13 % (Scenario 4).

The differences in the percentage changes in the total LPI between countries are small as the transport infrastructure component is only one of six that make up the LPI, and the 2010 LPI transport scores (Table 6.11) for each country cover a small range of values (a minimum of 2.06 for Algeria and a maximum of 3.60 for Israel).

By applying elasticities used in Chap. 2, we derive the percentage changes in imports and non-oil and gas exports for each country. Egypt stands to gain the most across all Scenarios, with an average of almost double the SEMC average (20.2 % against 12.4 %). Algeria has the next highest average improvement in its trade balance, mostly attributable to its performance in Scenario 2, from which it gains as much as Egypt. Tunisia, Morocco, and Jordan are the other counties that have a higher-than-average improvement in their average trade balance.

Table 6.11 LPI 2009 and its component values (From LPI 2010)

Country	LPI	Customs	Infrastructure	International shipments	Logistics competence	Tracking and tracing	Timeliness
Algeria	2.3	1.9	2.06	2.7	2.24	2.26	2.81
Egypt	2.6	2.1	2.22	2.56	2.87	2.56	3.31
Israel	3.4	3.1	3.60	3.17	3.50	3.39	3.77
Jordan	2.7	2.3	2.69	3.11	2.49	2.33	3.39
Lebanon	3.3	3.2	3.05	2.87	3.73	3.16	3.97
Libya	2.3	2.1	2.18	2.28	2.28	2.08	2.98
Morocco	2.5	2.3	2.51	2.89	2.24	2.10	3.00
Syria	2.7	2.3	2.45	2.87	2.59	2.63	3.45
Tunisia	2.8	2.4	2.56	3.36	2.36	2.56	3.57
Turkey	3.2	2.8	3.08	3.15	3.23	3.09	3.94
MENA	2.6	2.3	2.36	2.65	2.53	2.46	3.22
Lower middle income	2.5	2.2	2.27	2.66	2.48	2.58	3.24
Upper middle income	2.8	2.4	2.54	2.86	2.71	2.89	3.36
SEMC9	2.8	2.5	2.68	2.96	2.84	2.73	3.52
World	2.8	2.5	2.64	2.85	2.76	2.92	3.41
Mashreq	2.6	2.3	2.38	2.60	2.78	2.52	3.27
Maghreb	2.93	2.52	2.78	3.21	2.69	2.66	3.63

Table 6.12 Increase in trade balance (exports-imports) as % of GDP (Author's estimation)

Country	2008 Non-oil trade balance	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Average, all scenarios
Algeria	−3.8	6.7	26.5	11.2	5.2	12.4
Egypt	−2.4	16.8	26.5	25.4	12.1	20.2
Israel	1.6	3.0	8.1	3.6	2.3	4.2
Jordan	−22.5	9.3	15.7	11.2	5.4	10.4
Lebanon	−20.7	5.6	10.0	9.3	5.5	7.6
Libya	−7.3	4.8	13.1	12.6	5.3	8.9
Morocco	−8.2	7.7	22.2	8.1	4.1	10.5
Syria	0.0	5.7	13.5	8.4	4.5	8.0
Tunisia	−1.9	8.2	22.9	7.7	4.6	10.9
Turkey	−0.6	6.4	13.2	8.6	4.9	8.3
Average	−2.6	7.4	17.2	10.6	5.4	10.1

Table 6.12 shows that implementing transport infrastructure investments would change the trade balance from a −2.6 % of GDP in 2006 to an average of +7.5 % (that is, 10.1–2.6 %). Jordan and Lebanon would continue with a negative non-oil balance, but Algeria, Egypt, Libya, Morocco, Tunisia, and Turkey would change to a positive balance.

Morocco stands to gain the most in terms of exports, with a greater excess (nearly four percentage points) over the SEMC and scenario average than for imports. Jordan, Algeria, and Tunisia are next in gains in exports, and Libya and Lebanon have the least to gain.

6.5 Conclusions

Investment in transport infrastructure will increase the annual average economic growth rate of the SEMC by between 0.3 % per year and 1.7 % per year, depending on the scenario. Transport investment will also increase the total volume of trade and the positive trade balance, the latter by between 5.4 % and 17.2 %. While the increase in GDP is an annual impact and so is cumulative over the 20 year analysis period, the increase in trade and the trade balance is an average over the whole period. The ratio of total GDP increase to transport investment costs varies between 3.5 for Scenario 4 and 8.5 for Scenario 2. Investment in transport is worthwhile in all the scenarios and marginal increases in investment have positive returns. The higher investment in Scenario 2 brings greater per unit benefits than the lower, but still worthwhile, investment in the other scenarios.

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Chapter 7
Agriculture

Saad Belghazi

7.1 Introduction

This chapter analyzes agriculture trends and policies in the SEMC since 1994 based on reviews published by the FAO and the WTO. Section 7.2 contains basic economic characteristic of the agriculture sector in the SEMC. Section 7.3 analyzes agriculture trade. Section 7.4 offers and overview of agriculture policies, including public support to agriculture and trade protection. Section 7.5 deals with productivity and employment in the SEMC's agriculture sector and Sect. 7.6 concludes.

7.2 Economic Trends in the SEMC Agriculture Sector

7.2.1 Share of Individual SEMC in the Region's Agriculture Output

The agricultural production of the SEMC-9 (all SEMC except Palestine and Libya) amounted to USD73.5 bn at constant 2000 prices in 2007. Its share in the world agricultural production remained constant at 5.5 % between 1994 and 2007.

In 2005–2007, five countries - Turkey, Egypt, Morocco, Algeria and Syria – contributed more than 91 % of the total agricultural output of the SEMC-9, of which Turkey accounted for about 39 %, Egypt for 25.5 %, Morocco for nearly 10 %, and Algeria for slightly more than 9 % of the SEMC-9 total. Average growth of agricultural output between 1994–1995 and 2005–2007 was highest for Algeria

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Table 7.1 Consumption of ten major vegetal foods, 2003–2005 (From the FAO Statistical Yearbook 2009)

Regions/ countries	Dietary energy consumption (kcal/person/day)					2007 GDP per capita (USD constant 2000 prices)
	Cereals and pulses	Sugar raw eq.	Potatoes	Soybean oil	Animal foods	
Israel	1,243	273	86	386	728	21,994
Libya	1,255	355	65	43	320	7,360
Lebanon	1,140	324	187	219	505	5,273
Turkey	1,721	243	102	56	360	5,114
Tunisia	1,651	328	60	292	301	2,693
Jordan	1,338	413	48	118	295	2,233
Algeria	1,680	286	106	85	287	2,159
Egypt	2,164	263	45	41	225	1,697
Morocco	1,740	356	77	153	183	1,673
Syria	1,441	350	51	38	430	1,269
Palestine	1,025	213	23	82	283	
SEMC	1,774	286	76	86	303	
World	1,996	196	62	84	429	5,924

and Syria, slower for Egypt, Israel and Tunisia and the slowest for Morocco, Jordan, Turkey and Lebanon.

7.2.2 Demand Patterns

The food demand structure in the SEMC depends on average per capita income, distribution, and the dietary habits of the societies (Table 7.1). Although the availability of food is sufficient (2,700–3,500 cal per person per day), the primary energy content of food intake is low (only 20 % is composed of animal products).

Between 1965 and 2005, food consumption in the SEMC grew considerably: by 800 kcal per person per day. Cereal products represent a greater share in the consumption basket of the poorest households as compared with the better-off population groups, due to their lower prices and the policies of several governments to subsidize wheat flour and barley grains as a tool to fight poverty. However, it comes at expense of the consumption of fruit, vegetables, meat and fish, i.e. food products recommended for health reasons.

7.2.3 Production Pattern

Except for fresh fruit and vegetables, almost all agricultural products consumed in the SEMC are subject to agro-industrial processing. Agro-industry production and commercial chains have rapidly replaced family production and the informal sector. The development of logistics and transportation has allowed for economies of scale and the technical opportunity of packing has allowed for preserving the quality of food products. As a result of subsidies granted to basic food products such as cereals, oil, sugar and powdered milk, rural consumers have progressively abandoned self-consumption and traditional products in favor of manufactured food purchased on the market.

Between the 1960s and 1980s, the competitiveness of manufactured food products relied largely on imports, made cheaper by subsidies granted by the big exporting countries such as the US and EU. In subsequent decades, the government policies in the SEMC were driven by food self-sufficiency objectives.

Compared to domestic demand, four SEMC have a surplus in cereal production, while seven have deficits (Table 7.2). All SEMC have a surplus in roots and tubers. Animal production is almost balanced with consumption needs. The SEMC are experiencing a huge shortage in vegetable oils and sugar.

The situation differs across countries, however. While some SEMC like Turkey enjoy food self-sufficiency, others, like Syria and Egypt, have achieved this objective only partially; progress in self-sufficiency in cereals was accompanied by deficits in sugar and vegetable oil. Algeria and Morocco were cereal exporters in the 1950s but in the early 1960s they became structural importers.

Table 7.2 Ratio of production to food supply, 2003–2005 (From FAO Statistical Yearbook 2009)

Regions/ countries	Cereals	Vegetable oils	Sugar and sweeteners	Roots and tubers	Meats	Milk
Algeria	0.54	0.16	0.00	1.12	0.87	0.43
Egypt	1.13	0.45	0.86	1.45	0.91	1.21
Israel	0.29	0.67	0.02	1.81	0.90	0.98
Jordan	0.10	0.31	0.00	1.16	0.77	0.61
Lebanon	0.32	0.44	0.02	1.32	1.00	0.57
Libya	0.23	0.13	0.00	1.07	0.85	0.39
Morocco	0.89	0.60	0.47	1.20	1.00	1.24
Palestine	0.13	0.49	0.00	1.12	0.88	0.89
Syria	1.84	0.86	0.16	1.20	1.00	1.15
Tunisia	1.09	1.02	0.01	1.09	0.98	0.95
Turkey	2.18	0.82	1.16	1.25	1.02	1.22
SEMC	1.28	0.64	0.57	1.27	0.94	1.01
World	2.15	1.66	1.15	1.74	1.02	1.21

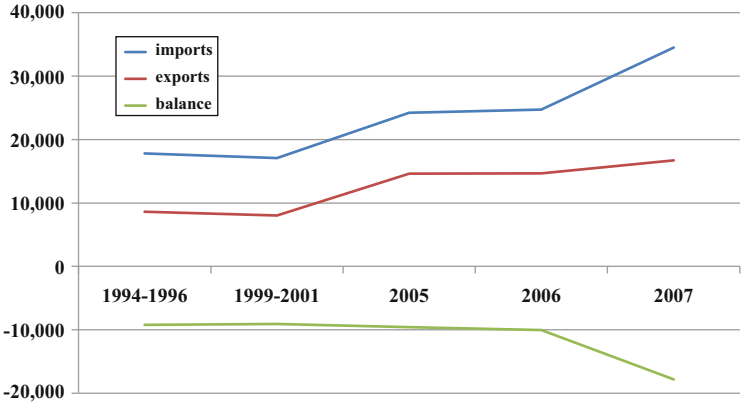

Fig. 7.1 SEMC's agricultural trade, USD mn, 1990–2009 (From www.faostat.org)

7.3 Agriculture Trade

7.3.1 Agricultural Trade Balance of SEMC

The SEMC are net importers of agricultural products (Fig. 7.1).

Between 2000 and 2009, the trade balance in agricultural products improved for Turkey, Syria, Tunisia, Jordan, Lebanon and Egypt and thus for the SEMC as a whole, given Turkey's regional weight. However, the trade balance deteriorated in Morocco.

In terms of individual countries' shares, Turkey represented 43 % of total SEMC exports in both 2000 and 2009. Egypt's share in total exports rose from 7 % in 2000 to 11 % in 2009, while Morocco's share decreased from 19 % to 13 %. The import shares of some countries did not change, such as Turkey (21 %), Algeria (15 %), Lebanon (6 %) and Jordan (5 %). Slight decreases were noted for Israel (from 12 % to 9 %), Egypt (from 22 % to 20 %), Tunisia (from 5 % to 4 %) and Morocco (from 10 % to 9 %). Increases were recorded for Libya (from 0 % to 4 %) and Syria (from 4 % to 7 %).

7.3.2 Agricultural Trade Between the SEMC and the EU

The SEMC-10 (all except Libya) accounted for 6.8 % of total EU agricultural product imports in 2008 (Table 7.3). The shares of the largest exporters, Turkey (3.2 %) and Morocco (1.7 %), increased as compared with 2006. Israel's share approached 1 %, at about EUR1 bn, while EU imports from Egypt increased from EUR512 mn in 2006 to EUR603 mn in 2010 (0.5 % of total EU import). Tunisia's

Table 7.3 Share of SEMC in EU agriculture imports and exports, % of total, 2008 (From Eurostat, Comext, DG Trade, March 2011)

Country	Imports (%)	Exports (%)
Algeria	0.0	2.5
Egypt	0.5	2.2
Israel	0.9	1.1
Jordan	0.0	0.5
Lebanon	0.0	0.7
Morocco	1.7	1.5
Palestine	0.0	0.0
Syria	0.1	0.5
Tunisia	0.4	0.8
Turkey	3.2	3.2
SEMC-10	6.8	13.0

agriculture exports to the EU fell from EUR745 mn in 2006 to EUR438 mn in 2010, i.e. by more than 41 %. Exports from Jordan, Syria, Lebanon and Palestine are very small.

Shares of agricultural products in total exports to the EU are high in Palestine (59.6 % in 2010, even if it was less than EUR6 mn) and Morocco (24.8 % in 2010). In 2010, these shares amounted to 8.4 % in Turkey, 9.1 % in Israel, 8.5 % in Egypt and 7.8 % in Jordan.

EU exports to the SEMC-10 amounted to 13 % of total EU agricultural exports in 2008. Turkey was the main food importer from the EU. The share of agricultural products in the region's total imports from the EU increased.

EU exports to the SEMC face tough competition from other countries and regions, especially for cereals (where the US, Canada, Argentina, Russia, Ukraine and Australia are the main competitors). The bulk of EU exports to the SEMC is destined for Egypt, Algeria and Morocco. But the amounts may vary from year to year, depending on the domestic production of these commodities, importers' strategies and trade policy arrangements. For instance, access to the Moroccan internal market is restricted by customs duties, which increase when the domestic cereal harvest is high.

The EU's agricultural trade balance with the SEMC was negative in 2006 but became substantially positive in 2008 and 2010 (Table 7.4). In 2010 it was negative only with Turkey and Morocco. Changes in this balance result, to a large extent, from fluctuations in Algeria's import of cereals from the EU which depends on weather conditions that affect domestic cereal production. The same concerns fluctuation in cereal production in other SEMC.

Table 7.4 EU agricultural trade with the SEMC, EUR mn, 2010 (From Eurostat, Comext, DG Trade, March 2011)

Country	Imports	Exports	Balance
Algeria	34.6	2,333.1	2,299
Egypt	602.9	2,057.2	1,454
Israel	1,009.2	1,037.0	28
Jordan	18.6	440.6	422
Lebanon	54.4	671.2	617
Morocco	1,912.0	1,330.8	−581
Palestine	5.5	10.8	5.3
Syria	80	452.4	372
Tunisia	438.2	715.1	277
Turkey	3,519.4	2,907.3	−612
SEMC-10	7,674.8	11,955.5	4,275

7.4 Agricultural Policies, Trade Protection and Public Support

Six SEMC – Egypt, Israel, Jordan, Morocco, Tunisia and Turkey - are members of the WTO. Algeria, Lebanon, Libya and Syria only have observer status. Based on the WTO country reviews (WTO 2005, 2006, 2008, 2009), this section analyzes long-term strategies in agricultural policies, domestic market protection measures, agricultural support policies and market control and regulatory institutions.

Under the WTO rules, member countries are committed to keeping their import tariffs below the bounded tariffs, renouncing NTM and reducing the level of protection of their agricultural production, even if the bounded tariffs applied to key products stands at high levels. Applied tariffs are often lower than the bounded rates. However, the SEMC frequently use variable import tariffs and quotas as well as producer incentives and subsidies. The majority of SEMC also provide consumer subsidies that lower prices for consumers at the cost of undermining producer incentives. The export sector is supported through direct subsidies and administrative support. But the main export incentives come from selective preferential access to the EU market as a result of complex trade negotiations with the EU.

7.4.1 Long-Term Trends in Agricultural Policies

The SEMC have long-term strategies for their agricultural sector. The agriculture sector plays a key role in the growth model of Morocco, Turkey, Egypt, Syria and Tunisia. Government policies support productivity and technical upgrading. Even if SEMC general economic policies include privatization, increased competition in local markets and the development of competitiveness, governments continue to

resort to the selective protection of some key agricultural products on the domestic market and support their exports.

In **Egypt,** the strategy of agriculture development 1997/1998–2016/2017 aims at increasing the annual growth rate of agricultural production, encouraging domestic and foreign investment in the agriculture sector (especially in the newly reclaimed areas), developing animal production (particularly small ruminants, poultry and fisheries) and intensifying agricultural research. To achieve these objectives, the government provides financial assistance to the agricultural sector in the form of subsidized electricity and water, the latter provided almost free of charge to farmers.

In **Israel**, historically, agriculture has been regulated by strict production and water quotas for each crop. The government supports and supervises the sector through, inter alia, price support, direct support for investments, R&D, SPS measures, planning, and marketing.

In **Jordan**, the government adopted the National Strategy for Agricultural Development for 2002–2010. Its objectives were to create a suitable environment for private sector investment in agriculture, improve processing and marketing of agricultural products, conserve Jordan's natural resources, improve employment and income opportunities and reduce the deficit in the agricultural trade.

In **Morocco**, the main agricultural policy objectives are food security, the improvement of farmers' incomes and the conservation of natural resources. The *Plan Maroc Vert* adopted in 2008 aims to make agriculture the engine of economic growth in the next decade through two pillars: (i) support to high value-added activities, including a strong export performance, and (ii) the 'Agriculture Solidaire' oriented towards the small farm sector.

Historically, **Tunisian** agriculture policy has involved public investment in infrastructure, subsidies for private investment, price stabilization, training and extension, import protection in the interests of rural development, food security and self-sufficiency, and social stability. With the exception of wheat, agricultural production has been substantially liberalized; input and interest rate subsidies have been practically eliminated, the price of water continues to be adjusted towards cost recovery, and marketing boards have partially lost their monopolies.

Turkey's key policy objectives for agriculture are increasing producers' welfare, promoting rural development, ensuring food security and safety and improving efficiency, productivity, quality, and competitiveness. The Turkish agricultural strategy has included four objectives: (i) phasing out price support and credit subsidies and replacing them with a less distortionary DIS system to farmers, (ii) withdrawing the government from direct involvement in crop production, processing, and marketing, (iii) reducing output intervention purchases financed from the budget, and (iv) facilitating the transition from the diverse crops value chain to efficient production patterns.

Table 7.5 Trade protection in SEMC in 2010, simple average of import duties (From WTO Trade Profiles and Tariff Profiles www.wto.org, October 2010)

Countries	Algeria	Egypt	Israel	Jordan	Lebanon	Morocco	Tunisia	Turkey
WTO accession date	Observer	1995	1995	2000	Observer	1995	1995	1995
MFN tariffs (final bound)								
All goods		36.8	22.0	16.3		41.3	57.9	28.3
Agricultural goods (AOA)		96.1	73.3	23.7		54.5	116.1	60.1
Non-agricultural goods		27.7	11.2	15.2		39.2	40.5	16.9
Non ad-valorem duties (% tariff lines)		0.2	5.9	0.1		0.0	0.0	0.1
MFN tariffs (applied 2008)								
All goods	18.6	16.7	6.8	10.8	6.8	21.4	21.5	9.7
Agricultural goods (AOA)	23.3	66.4	17.9	18.1	19.5	42.4	40.9	42.2
Non-agricultural goods	17.8	9.2	5.1	9.8	4.9	18.3	18.6	4.8
Non ad-valorem duties (% tariff lines)	0.0	0.2	4.7	0.1	6.0	0.0	0.0	0.6
MFN duty free imports (% of imports)								
in agricultural goods (AOA)	0.0	. . .	67.3	51.6	. . .	27.4	13.3	30.6
in non-agricultural goods	0.6	. . .	76.7	45.6	. . .	1.2	35.2	38.4

7.4.2 Trade Protection and Subsidies to the Agricultural Sector

The six SEMC that are WTO members have generally high bounded tariffs (Table 7.5). They are higher for agricultural products than for manufactured ones. The agricultural bounded tariffs range from 23 % (Jordan) to 116 % (Tunisia) while those for non-agricultural products range from 11.2 % (Israel) to 40.5 % (Tunisia). Average applied rates are lower than the bounded rates, but still higher than those applied to industrial products.

In **Egypt** the simple average tariff on agricultural goods (ISIC Rev.2 definition) and the applied weighted average tariff on agricultural goods amounted to 66.4 % and 5.8 %, respectively, in January 2005. Applied tariffs were relatively high on meat and edible meat offal (21.2 %), and edible fruits and nuts (14.4 %). The highest agricultural tariff of 40 % is applied to various fruits (apples, apricots, bananas, and pears). Lower tariffs are charged on oilseeds and oleaginous fruits, at an average rate of 2.9 %, and on cereals at 3.3 %. Egypt does not maintain TRQ.

The government has been actively encouraging private sector participation in agriculture. Investment in the sector is eligible for benefits provided by the Investment Guarantees and Incentives Law (8/1997). The program to encourage the use of local cotton was terminated in 2003. Financial assistance to the agriculture sector is provided in the form of subsidized electricity and water, the latter being provided almost free of charge to farmers. The government subsidizes a number of food products for low-income groups, most notably bread, sugar, and oil. Subsidies for fertilizers and pesticides were removed in the mid-1990s.

Farmers in **Israel** benefit from relatively high tariff protection. In 2005, the average MFN applied tariff (including the *ad valorem* equivalents of specific, compound, and alternate duties) on agricultural products was 41 %. Around 40 % of agricultural goods enter Israel duty free compared with around 51 % of non-agricultural products (due to the FTA with the EU). MFN-applied tariffs are higher than the overall average rate in six subsectors: live animals (with an average tariff of 29.0 %), meat products (64.6 %), dairy products (120.6 %), edible vegetables (63 %), edible fruit (87.1 %), and preparations of cereals, flour, starch or milk products (42.3 %). Domestic support for agriculture, as measured by the current total AMS, amounted to USD282 mn in 2003. At that time, around 76 % of product-specific AMS (plus *de minimis* support)[1] was for milk production, while around 19 % was for eggs. Price support constitutes the main instrument of income support. It accounted for 88.1 % of total product-specific AMS in 2003.

In **Jordan** the simple average applied MFN tariff on agricultural products was 17.1 % in 2008. Applied MFN tariffs averaged 16.7 % on agricultural products. The

[1] For developing countries, *de minimis* support under the AMS encompasses product-specific support that does not exceed 10 % of the value of production of the product concerned, and non-product-specific support which does not exceed 10 % of the value of total agricultural production.

applied MFN import duties for vegetables were in the range of 0–30 % with a simple average of 16.7 %, but for tomatoes and cucumbers they amounted to 30 %. For fruit they were in the range of 10–35 %, with a simple average of 25.6 %. However, in the case of oranges, they were 35 % from May to the end of February. Imports of bananas, grapes and apples were subject to even higher compound duties. Applied MFN tariffs in the livestock subsector were in the range of 0–30 % with a simple average of 5 % for live animals and 12.9 % for meat (incl. edible offal). They amounted to 5 % on beef, lamb, and goat meat, with the exception of ground meat for hamburgers (21 %), 22 % for pork and 0–30 % for poultry meat. Live bovine animals, sheep and goats are subject to compound duties.

As part of its WTO accession commitments in agriculture, Jordan agreed to reduce its trade-distorting domestic support, measured in terms of the total AMS, by 13.3 % over a six-year implementation period starting in 2000.

In **Morocco** agriculture is the most heavily protected sector with a simple average tariff of 29.0 %, and rates that vary from 2.5 % (for most agricultural equipment) to 304 % (on live sheep and goats and their meat). Variable duties are applied to sugar and cereals. In the case of sugar, the *ad valorem* equivalent of the duty (inversely proportional to the import price) may vary from a constant (minimum) rate to infinity. On numerous agricultural tariff lines, the applied rates exceed the bound rates.

Tariff preferences and preferential TRQ are granted to imports of certain agricultural products, such as red meat and poultry meat, apples, almonds, and wheat and wheat products from the US under the FTA (since January 2006) or from the EU under the FTA with the EU. With the exception of common wheat, for which the annual quota volume varies with domestic production, the import quantities for other cereals are fixed.

In **Tunisia** customs duties are very high on most agricultural goods that compete with domestic production. TRQ for imports fluctuate enormously from year to year, except for cheese, soft wheat and sugar, the quotas for which are completely used every year. Tunisia applies preferential TRQ to several agri-food products imported from the EU under the FTA. With respect to meat, dairy produce, cereals and sugar, which are also covered by the WTO TRQ, exports from the EU may draw either on the WTO quota or on the preferential quota. However, imports from the EU under TRQ are zero-rated; moreover, these quotas also cover other agricultural products such as eggs, poultry, potatoes, hazelnuts, maize (corn), goats and goats meats, malt, starch, certain flours, fats, oils, glucose, and dog and cat food. Tunisia also intends to open additional preferential TRQ under its bilateral FTA with EFTA countries. Tunisia's last notification to the WTO concerning domestic support was in 2002.

In **Turkey** the simple average MFN tariff in agriculture remains relatively high, at 28.3 % (up from 25 % in 2003, partly due to the increase in tariffs on grains and vegetable oils). Imports of some agricultural products, such as live animals for breeding purposes, are duty free. Tariff rates on some processed meat products reached the level of 225 %, while for some dairy products (e.g. buttermilk, and cream) - up to 170 %.

Under the WTO Uruguay Round, Turkey agreed to reduce its budgetary outlays for export subsidies for 44 products by 24 %, and the volume of subsidized exports by 14 % in equal installments over a 10-year period starting in 1995.

Turkey and the EU have agreed to work towards bilateral free trade in agricultural goods to complement their CU that applies to trade in industrial products (see Chap. 3). Processed agricultural products imported from the EU are subject to customs duties comprised of an industrial and an agricultural component: all industrial components enjoy duty-free treatment and customs duties applicable to agricultural components are below MFN rates. Some processed agricultural products are subject to zero duty but are under quota. The limited coverage of agricultural products under the FTA with the EU and other partners delay the exposure of these products to greater competition.

7.5 Productivity and Employment in Agriculture

The growth of agriculture productivity depends on the modernization of traditional production structures and the ability to address natural resource, environmental and climate change constraints.

7.5.1 Productivity Trends Per Agricultural Worker

Apparent agricultural productivity can be measured as the value added per active worker at constant prices. Table 7.6 shows the average annual rate of growth of apparent productivity in the SEMC-9 from 1990 to 2008. The trend was estimated using the OLS regression of Eq. 7.1:

Table 7.6 Agricultural apparent productivity growth in SEMC, 1990–2008 (Own estimates based on the World Bank data base www.worldbank.org)

Country	Trend	R^2
Algeria	0.015	0.543
Egypt	0.028	0.995
Israel	0.039	0.816
Jordan	0.010	0.066
Lebanon	0.063	0.985
Morocco	0.024	0.340
Syria	0.031	0.806
Tunisia	0.014	0.446
Turkey	0.024	0.918

Note. The estimated productivity trend numbers are annual increases for the entire period 1990–2008

$$V = bT + C + u \tag{7.1}$$

where V stands for the logarithm of the agricultural value added per worker at constant 2000 USD, T for the time, C for the constant and u for the estimation error.

Productivity rose in all SEMC-9. The highest increase was observed in Lebanon, Israel and Syria (6.3 %, 3.9 % and 3.1 %, respectively). A slower increase (between 2.4 % and 2.8 %) was observed in Egypt, Turkey and Morocco and the slowest one was observed in Tunisia, Jordan and Algeria. From 1994 to 2007, SEMC-9 average productivity increased from USD2,300 per year to USD3,000 in constant 2000 prices. These numbers reflect large cross-country disparities, from USD42,600 for the Israeli worker to 2,100 USD per Moroccan worker in 2007. The pace of apparent productivity growth in the agricultural sector in SEMC-9 was higher than in the world (2 %) during the 1994–2007 period.

Apparent productivity (value added per active worker at constant prices) is highly unstable in countries where the share of irrigated land is low (Algeria, Morocco, Turkey and Tunisia). But, apparent productivity rose in all SEMC, even in Morocco and Tunisia after 2002. This change is related to technical changes and the growth of irrigated land shares.

7.5.2 Productivity Growth Determinants: Land, Water and Capital

Irrigation and equipment are the main factors that affect productivity growth in SEMC agriculture. These factors can compensate for structural rain scarcity in the region and climate change effects. Judicious investments are the main solution to limit the decreasing returns of land exploitation. This also applies for fishing activities and others based on sea exploitation.

The share of irrigated land in the total cultivated land increased slowly from 17.3 % in 1994–1996 to 18.5 % in 2007. The highest relative increases were observed in Israel, Morocco, Turkey and Syria, i.e., the countries with the biggest arable land areas.

The change in the weight of irrigated land share is correlated with the change of the agricultural capital stock per active worker. Table 7.7 shows that in all SEMC, the capital stock per worker rose from 6,099 USD (at constant 1995 prices) in 1979–1981 to 8,029 USD in 2003, an average annual increase of 3.5 %. Egypt, Algeria and Palestine remained below the SEMC average, Morocco and Jordan stayed close to this average and Turkey stood at a slightly higher level. Syria and Tunisia had a level that was nearly twice the average, Israel and Lebanon were at five to six times the average and Libya was at more than ten times the average level.

Table 7.7 Agricultural capital stock per worker and structure of the capital stocks (FAO Statistical Yearbook 2009 www.faostat.fao.org)

Countries/ regions	Agricultural capital stock per agricultural worker, USD thousand constant 1995 prices			Share in capital stocks, %			
				Machinery	Land	Livestock	Other
	1979–1981	1989–1991	2003	2003	2003	2003	2003
Algeria	3,158	3,389	3,999	16.1	69.6	13.2	1.1
Egypt	3,723	3,966	5,308	2.7	76.3	20.6	0.4
Israel	37,143	45,365	42,142	17.0	64.4	14.7	3.8
Jordan	5,262	7,738	8,642	9.9	65.3	23.3	1.6
Lebanon	21,477	40,100	40,910	5.8	83.5	10.2	0.5
Libya	44,406	91,763	84,429	8.1	77.6	13.8	0.5
Morocco	6,161	7,096	7,420	4.1	71.1	24.1	0.6
Palestine	4,042	4,471	5,725	18.3	61.2	19.3	1.2
Syria	11,729	11,010	16,867	8.3	77.8	13.5	0.4
Tunisia	11,524	13,222	14,945	3.3	85.9	10.3	0.6
Turkey	6,716	8,472	8,710	32.6	52.2	14.8	0.4
SEMC	6,099	7,020	8,029	16.6	66.4	16.5	0.5

7.5.3 *Social Factors: Demography, Poverty and Rural Employment*

The development of agricultural productivity is challenged by social factors, especially continued illiteracy, poor education quality (which limits the incentives and capacities to innovate – see Chaps. 16 and 17), and a high rate of population growth.

The working age population in the SEMC is growing rapidly while job creation lags behind labor supply. The number of net entries into the labor market in the Arab SEMC between 1995 and 2025 can be estimated between 80 and 85 mn, with some 45 mn for the period 2005–2020, i.e. an average of 3 mn entries annually over these 15 years. Hence, a huge number of jobs would have to be created in these countries to prevent unemployment from increasing further above its already high levels. But tension in the labor market is felt mainly by urban youth and graduates. The active population in rural areas has a very low reservation wage so they accept low wages, thus dampening rural unemployment. In urban areas, on the other hand, reservation wages are high, particularly for educated youth, and unemployment is high.

The permanent social crisis in the small farm agricultural sub-sector is the cause of the unstoppable expansion of towns with all of its corollaries such as overpopulation, uncontrolled urban sprawl cutting off agricultural land, destruction of the coasts, growth of unregulated spontaneous housing, the development of squalid marginal districts, environmental pollution, land speculation, unplanned urbanism, rising crime, and inadequate or inappropriate infrastructure.

The active population in agriculture in the SEMC was nearly 25 mn in 1994–1996 and 24.5 mn in 2007 (Table 7.8). Thus it fell by only 0.2 % per year on

Table 7.8 Economically active population in agriculture (From FAO Statistical Yearbook 2009)

	Economically active population in agriculture, thousand					Share in total economically active population, %				
Countries	1994–1996	1999–2001	2005	2006	2007	1994–1996	1999–2001	2005	2006	2007
SEMC	24,955	24,827	24,593	24,597	24,461	34	30	27	26	26
Algeria	2,336	2,717	2,996	3,039	3,092	26	25	23	23	22
Egypt	6,483	6,573	6,839	6,847	6,900	35	31	28	28	27
Israel	66	62	57	56	54	3	3	2	2	2
Jordan	130	120	120	121	120	11	9	8	7	7
Lebanon	61	48	37	36	34	5	4	3	2	2
Libya	116	105	88	84	82	8	6	4	4	4
Morocco	3,351	3,339	3,218	3,215	3,135	37	33	29	29	28
Palestine	128	125	123	123	122	15	12	10	9	9
Syria	1,157	1,184	1,308	1,349	1,389	28	24	22	21	21
Tunisia	718	757	779	785	787	25	24	22	22	22
Turkey	10,411	9,796	9,028	8,942	8,746	46	41	36	36	35

average. However, Lebanon, Libya, Israel and Turkey experienced a more substantial reduction in the agricultural population. Morocco, Palestine and Jordan experienced a small decrease while in Algeria and Egypt, the growth rates were positive. They were particularly high in Algeria (2.6 % per year), which may be explained by the improvement of the political situation in this country and the return of the bulk of farmers to their lands.

7.6 Concluding Remarks

The agricultural sector is important for the SEMC because it employs a large share of their economically active population. It is also the main source of income for the poorer segments of the population. It generates a large share of export revenues.

However, agriculture is the least open sector of the SEMC economies. Agricultural and trade policies try to reduce social impact and show a firm bias towards food security and self-sufficiency. Productivity growth leads to a reduction of demand for labor in agriculture and contributes to rural–urban migration. The migration of small and poor households enables land concentration, which generates economies of scale.

Looking towards the future, free trade will help increase production and generate revenues while an inward orientation will lead to lower productivity growth, less migration of agricultural workers to other sectors, and a smaller reduction in poverty in rural areas.

The EU is the main SEMC partner in agricultural trade. Therefore the EU agricultural policy can seriously influence the future evolution and performance of SEMC's agriculture sector.

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Chapter 8
Tourism in the Mediterranean

Robert Lanquar

8.1 Introduction

During 1990s and 2000s, the SEMC recorded the highest growth rates of inbound world tourism. The countries were not negatively affected by the global financial and economic crisis of 2008–2010, which confirms the resilience of the tourist industry and its major potential in the SEMC. However, the Arab Spring managed to slow down the growth trend, especially in the areas directly or indirectly affected by conflicts.

This chapter analyzes the development of the tourism sector in the SEMC since the beginnings of the 1990s, its competitiveness, and some environmental issues which have a direct impact on its sustainable development. The WTTC/OE (2010) methodology and the UNWTO data are used to present the economic contribution of travel and tourism in the SEMC. This methodology is anchored in the international standard for TSA developed by the UNWTO and approved by the Statistics Commission of the UN in 2000 and revised in 2008. It concerns the direct, indirect and induced impact of tourism on GDP and other economic variables.

Beyond political and social concerns, the Arab Spring did not generate noticeable changes in the tourism configuration of the SEMC, confirming the resilience of this sector, especially when peace and stability allow for its development.

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8.2 International Tourism Arrivals

In the SEMC, international tourism rose by 455 % between 1990 and 2013 (Table 8.1), nearly twice as fast as world tourism. After the start of the Arab spring, contrary to some predictions, the entire Mediterranean region (Northern and Southern rims) did not lose its significant share in the world tourism market. However, the SEMC suffered losses in 2011, which were reversed, to some extent, in 2012 (except Lebanon, Syria and Egypt).

In the case of the SEMC, Europe is the main originating region of incoming tourism (UNWTO 2009). Tourist arrivals from new emerging markets such as Russia, India or China are still small but are growing. Only Turkey and Egypt attract a substantial number of Russian tourists.

The average length of international overnight stays, which reflects, to some extent, the revenue potential of tourism, dropped from 6 nights in 1980 to 5.4 nights in 1990 and 4.5 in 2010. This reveals the improvement in transport facilities which allow for the multiplication of shorter stays.

Another significant trend is the growth of intra-regional tourism, which doubled from 2005 to 2010. In 2010, its share amounted to around 50 % in the Mashrek, but only 10 % in the Maghreb. In Morocco, in 2012, the slight decline in European tourists (due to the economic crisis) was compensated by more arrivals from MENA. Correspondingly, hotels following Sharia practices (halal food and separation between men and women) are growing rapidly in the region (DinarStandard 2012).

The visa restrictions in Europe for Maghreb and Mashrek tourists have amplified this trend. The main reason for the rise in intra-regional regional tourism is a shared Arabic language and geographic proximity which makes travel by car possible. In the Maghreb, Tunisians, Algerians and Libyans may travel without constraints. However, the land border's closure between Morocco and Algeria (as of 1994) hinders travel between these two countries. Since 2008, more than 40 % of overnight visitors in Tunisia have come from MENA countries.

Political concerns seriously limit intra-regional tourism. In Palestine, less than 1 % of tourist arrivals originate from neighboring countries but this number has been growing since 2010. In Libya, less than 1 % come from the Maghreb and Mashrek. In Algeria, less than 3 % of incoming tourists are from Mashrek and around 10 % are from other African countries.

Table 8.1 SEMC's international tourist arrivals, in thousands (From UNWTO Barometer, META Estimates for 2013, National Tourism Administration)

Countries	1990	1995	2000	2005	2009	2010	2011	2012	2013
Algeria	137	520	866	1,443	1,912	2,070	2,395	3,200	2,395
Egypt	2,411	2,871	5,506	8,608	11,914	14,051	9,497	11,200	10,210
Israel	1,063	2,215	2,672	1,916	2,321	2,803	2,820	2,880	36[a]
Jordan	572	1,075	1,427	2,987	3,789	4,557	3,975	4,160	3,891
Lebanon	210	450	742	1,140	1,851	2,168	1,655	1,300	1,365
Libya	96	56	174	170	260	271	26	104	50
Morocco	4,024	2,602	4,420	6,077	8,341	9,288	9,342	9,450	9,993
Palestine	..	..	1055	88	391	522	446	482	448
Syria	562	815	3,015	5,838	6,092	8,546	5,070	2,000	20
Tunisia	3,204	4,120	5,244	6,975	6,904	6,902	4,782	6,000	6,258
Turkey	4,799	7,083	10,428	21,125	25,506	27,000	31,456	35,700	39,517
Total SEMC	17,078	21,807	35,549	56,367	69,281	78,178	71,359	76,576	77,730

[a]Data of the Ministry of Tourism of Israel (February 2013)

8.3 Domestic Tourism

To measure the importance of the whole tourism sector in a given economy, domestic tourism data needs to be included. Data gathered by the UNWTO on 'resident overnight stays in hotels and similar establishments' can be used to calculate it. The average length of stay of resident tourists in all accommodation establishments is about twice the length of stay of non-resident tourists but their daily spending is significantly lower. The SEMC would do well to improve their understanding of the contribution of domestic tourism, among others, through better data collection that would guide their marketing policies and strategies. There were at least 30 mn domestic guests in hotels and similar establishments in 2010–2012 and they generated a third of the tourist expenses in the SEMC. In Turkey, for example, the number of total domestic guests was 12.1 mn, less than a third of international tourist arrivals.

8.4 Economic Importance of Tourism in SEMC

During the 1990–2010 period, international tourism receipts (excluding the effects of price changes) in the whole Mediterranean region (North and South) increased by 384 %. When compared with the number of international arrivals (Table 8.1), this means that receipts per tourist gradually fell. This data originates from the balance of payments statistics and includes spending on travel and passenger transport services provided to non-residents. The share of SEMC in world tourism receipts rose from 3.7 % in 1990 to 7.5 % in 2010, and then declined until 2013.

8.4.1 Share of Tourism in GDP

The weight of tourism (defined as the activities of traditional tourism providers (e.g. accommodation, transportation, etc.) plus tourism-related investment, public spending and export of goods) includes both direct and the indirect effects via the tourism value chain spending (Table 8.2). The total contribution of travel and tourism to GDP is 2.5 times greater than its direct contribution. The significance of changes in the relative importance of the tourism sector in particular countries must be seen in the context of their overall economic development and the growth of other sectors.

The share of tourism in the GDP in the SEMC was slightly higher than in the overall world economy (9 % in 2010): averaging 10 % between 1990 and 2005 and then dropping to 9 % and under after 2010.

Table 8.2 Share of tourism and travel in SEMC's GDP, % (From WTTC 2011/2012/2013)

Country	1990	1995	2000	2005	2010	2011	2012
Algeria	5.5	5.6	7.5	6.5	7.9	7.7	7.6
Egypt	8.8	10.2	11.4	15.7	17.5	14.8	15.1
Israel	7.8	8.4	8.3	6.7	8.2	8.0	7.8
Jordan	24.3	21	16.3	18.5	21.9	18.8	22.0
Lebanon	9	9.6	9.3	31.2	33.9	35.1	25.1
Libya	–	–	–	3.5	3.3	3.2	4.0
Morocco	10.4	10.3	12.3	14.9	19.4	18.9	18.7
Syria	7.5	12.5	11.5	14.0	15.3	13.1	11.1
Tunisia	16.5	17.5	18.4	18.5	17.8	14.2	15.1
Turkey	7.9	10.5	9.9	11.4	10.6	10.9	10.9
Average	10.8	11.3	10.4	14.1	15.6	14.5	13.6

8.4.2 Tourism Receipts in the Balance-of-Payments

In 2010 tourism-related export earnings (goods and services) generated 6.1 % of total export earnings in the SEMC. Except for the oil-exporting countries (Algeria and Libya) and for industrialized Israel and Turkey, tourism is a major component of the total service receipts in the balance of payments of most of the SEMC.

Until 2011, tourism in Egypt, Jordan, Morocco, Tunisia and even in the industrially emerging Turkey gradually increased its weight in the balance of services. Tourism receipts amounted to more than two thirds of total services' receipts in these tourism-oriented economies.

8.4.3 Employment

Direct and indirect tourism employment contributes substantially to total employment in the SEMC. Tourism employment grew by 152 % between 1990 and 2000 and by 144 % between 2000 and 2010, at which point it amounted to 10.3 mn persons. Nevertheless, over 1990–2010, total tourism and travel related employment grew at a slower pace than tourist arrivals, reflecting a doubling of productivity per employee, particularly in the cases of Turkey and Israel. Large tourist companies operate with higher productivity than the myriad SME.[1]

Turkey and Morocco are the countries with the greatest numbers of people working in the tourism industry. Tourism contributed to about one fifth of total employment in Jordan, 15 % in Tunisia, only slightly less in Syria until 2012, and more than one tenth of total employment in Morocco and Egypt.

[1] According to the UNWTO, the SME represent more than 95 % of the number of tourism enterprises in the Mediterranean but only 80 % of sector employment.

8.4.4 Capital Investment

After the Arab Spring, FDI in tourism and passenger transportation represented less than 10 % of overall investment in the SEMC. This share increased from 8.6 % in 1990. Nonetheless, it was twice as high as the world average during two decades.

These investments have been primarily in transportation infrastructure, tourism equipment and technological innovations. Algeria increased these investments tenfold between 2005 and 2010, mainly thanks to its transportation policy (rail and road) which, in the long run, may facilitate the take-off of tourism.[2] Egypt was steadily increasing its investment in tourism until 2011, even though investment in other sectors grew at a faster rate, as is the case for several other SEMC. However, in Turkey and Israel investment in tourism has stagnated since 2008.

According to De Saint-Laurent et al. (2011), from 2008 onwards, tourist investment in the region has attracted fewer projects: 19 in 2009, as compared to more than 40 per annum on average in 2004–2008. Since the beginning of the new millennium, Morocco has been the preferred destination for tourist FDI.

The positive trend in investment in the tourism sector is also reflected in the increasing number of beds in hotels and similar establishments (Table 8.3). Turkey recorded the highest number of beds and the highest increase since 2000.

Table 8.3 Hotels and similar establishments (number of bed-places) (From UNWTO and Statistics and Satellite Tourism Accounts)

Countries	1995	2000	2005	2007	2008	2009
Algeria	63,614	67,087	82,808	84,559	85,000	86,383
Egypt	128,957	227,222	341,552	380,382	421,694	429,066
Israel	75,100	106,782	126,831	128,356	128,350	125,455
Jordan	20,613	34,433	39,674	41,359	42,542	42,842
Lebanon	16,419	25,450	28,953	29,071	30,062	32,217
Libya	12,000 (est.)	19,969	21,404	26,423	27,334	30,000 (est.)
Morocco	90,511	94,652	124,270	143,221	152,936	164,612
Palestine	6,434 (1994)	10,063	7,923	8,901	8,985	11,308
Syria	31,449	34,209	43,262	47,077	48,585	50,903
Tunisia	161,498	197,453	229,837	235,727	238,495	239,890
Turkey	280,463	322,334	481,704	530,763	563,252	600,986
Total	606,595	817,320	1,046,514	1,125,076	1,183,983	1,212,676

[2] However, it will also require developing the hospitality industry and tourist promotion.

8.4.5 Public Sector Policies Towards Tourism

Government expenditure for world tourism quadrupled between 1990 and 2010, from USD 1.5 mn to USD 6.1 mn (OMT-UNWTO 2008). All SEMC launched ambitious development programs after 1995 "based especially on the diversification of the offer, the modernization of the local tourist sector, and an enlarged opening to the private sector and to foreign investors." (De Saint-Laurent et al. 2011)

The SEMC average public expenditure in the tourism sector has amounted to 4.4 % of total budget expenditure since 1990. In 2012, it ranged from a low 0.1 % in Turkey to more than 9.2 % in Lebanon and 10.5 % in Jordan[3] (Table 8.4). These levels must be evaluated against a detailed knowledge of the sector and the strategies chosen. In line with modern budget management, monitoring should apply not only to spending levels but also to the results obtained.

Government priorities should relate to regulations of the quality of service, safety, land planning and environment as well as the introduction of a legal and institutional framework conducive to private initiatives and development of FDI. Today, emphasis is put on the implementation of ICT subsidized programs, the opening up of air-transport regulatory systems, investment in airports and the launch or reinforcement of national and regional airlines, traditional flag carriers, and low-cost carriers.

Tourism marketing and promotion constitutes a significant share of government expenditure. In 2008, the UNWTO surveyed the structure and budgets of the

Table 8.4 Government tourism expenditure in SEMC, % of total government expenditure (From WTTC)

Countries	1990	1995	2000	2005	2010	2011	2012
Algeria	0.9	0.9	1	1	1.1	1.1	1.1
Egypt	4.3	6.3	6.5	6.5	6.7	6.7	6.7
Israel	2.1	2.1	2.0	2.0	2.0	2.0	2.0
Jordan	11.5	10.4	10.1	10.3	10.4	10.5	10.5
Lebanon	13.5	8.9	9.0	9.0	9.1	9.1	9.2
Libya	1	2.5	2.7	2.6	2.6	1.9	1.4
Morocco	4.1	3.8	3.4	3.5	3.5	3.6	3.6
Syria	1.9	2.7	3.0	3.0	3.1	n.a.	n.a.
Tunisia	6.5	6.6	7.0	7.2	7.3	7.3	7.3
Turkey	0.7	0.7	0.5	0.5	0.5	0.1	0.1
SEMC average	4.65	4.49	4.52	4.56	4.63	4.4	4.4

[3] These figures reflect the preference for tourism considered as one of the very sectors which can bring peace and prosperity in these two countries.

national tourism organizations around the world. At that time, Tunisia spent USD 7.60 per tourist arrival (compared to the world average of USD 2.90) and USD 4.50 per inhabitant (compared to the world average of USD 2.90). For one USD of budget spending for tourism, international tourist receipts are estimated to amount to USD 52.00 for the SEMC, while the world average is USD 383.00 (OMT-UNWTO 2008).

8.5 Tourism in Individual SEMC

Until 2010, tourism developed particularly rapidly in Turkey and Egypt. These two countries surpassed the tourist growth experienced in Morocco and Tunisia and became the champions of regional tourism.

In its record year (2010), **Egypt** welcomed 14.8 mn visitors. Arrivals and tourism receipts dropped by one third and one half respectively as of 2011, especially the cultural tourism to Luxor, Aswan, and other archaeological areas. Arrivals recovered somewhat in 2013, mainly because of price reductions in new markets (Poland and Russia). Egypt seeks to restore tourist numbers to 2010 levels by 2015. To reach this optimistic objective (that is dependent on political and social stability), government and private sector plans of action have been elaborated, especially for the Red Sea and Sharm el-Sheikh resorts. This plan includes incentives for international (mainly low-cost) airlines and visa facilitation.

Turkey was the seventh top destination in the world in 2010. It received a record 40 mn international tourists in 2013. Turkey's political choice to make tourism a national priority in the early 1980s is showing encouraging results that are being reinforced with the extensive use of internet. Investors and promoters engage in tourism through different associations.

Turkey's cruise market strategy brought 2.2 mn cruise passengers in 2011. In 2012, a 'platform cruise' was created with close cooperation of Greek cruise ports, which included 13 Turkish city ports which can accommodate very large ships. Izmir has set the objective of more than 2 mn cruise passenger arrivals by 2020, while in 2003, the port received none on a regular basis.

Morocco has been quite successful since 2010. In particular, 2013 was considered a very good year, with a 6.6 % growth in international tourist arrivals (10 mn). More than 700,000 arrivals came from Algeria by plane or ferry (through Spain). If the borders were opened between both countries, this number would have been substantially higher. Direct spending by international tourists reached USD8.3 bn (2011) and spending by domestic tourists reached USD3.5 bn. The total direct and indirect tourism contribution reached 19.3 % of GDP. There were 834,000 direct jobs in the tourism industry and the total direct and indirect employment (expanded to non-tourism businesses linked to the sector) reached 1,798,000 people. Morocco is promoting the use of ICT in the tourist sector; more than half of reservations will be soon made online, without the use of international travel agencies and tour

operators, thus retaining a larger share of tourist expenditure inside the country. In addition, Morocco is developing a strong domestic tourism policy.

Tourism in **Algeria** has experienced a sharp decline, especially in the southern Sahara, because of al-Qaeda terrorist attacks in the Islamic Maghreb. However, due to its economic growth and high oil prices, business tourism is expanding. The new government policy is to put emphasis on transport infrastructure such as highways and rail and equipment in services along the new highways. Its tourist promotion now seems more oriented towards CEE countries such as Poland and the Gulf states. However, Algeria still suffers from the lack of priority given to tourism and an insufficient political vision to cluster tourism with other economic sectors such as agriculture, communication, and transportation.

In **Tunisia**, tourism is marked by a predominance of hotel resort packages for European tourists. The lack of diversity of its products and services explains the quasi-stagnation of the tourist sector since 2005 and its decline after 2011, in spite of a massive price reduction. In 2010, the sector covered 56 % of the deficit in the trade of goods, provided 19 % of foreign currencies and employed, directly and indirectly, more than 400,000 people out of a population of 10.5 mn. Some hotel prices have fallen as much as 40 %. Tourists have been choosing low-cost transportation, they have reduced the length of their vacations, and they have abandoned tours and daily trips that could bring up to 15 % of the initial package. So, international tourism export earnings dropped by 14 % in 2012 in comparison with 2010.

In **Libya**, the growth in international arrivals was estimated at more than 182 % between 1990 and 2010. It then dropped by 90 % in 2011, reaching only 26,200. The new Libyan authorities see tourism as a significant potential factor for the sustainable development of their country. Nevertheless in 2013, no more than 50,000 international tourists, mainly businessmen, were received; their average expenditures (REVPAR) exceeded USD 1,300 per person as compared with less than USD 365 for Tunisia and USD 713 for Morocco.

Reliable statistics for tourism in **Palestine** have only been available since 2001. They show a very encouraging level of growth in international arrivals, especially from 2003 (370,000) to 2010 (520,000). International arrivals dropped in 2011 but then rose by 8 % in 2012. Visits to the Holy Places recorded significant declines in 2012, and then rebounded in 2013. One problem noted by international tour operators relates to the rather poor quality of tourist services rendered as well the interference of Israeli ground operators in visits to the Holy Places.

Israel, a mature destination since the early 1970s, recorded a 270 % growth rate in the 1990s and 103 % in the 2000s. The number of international tourist arrivals reached a record of 3.6 mn in 2013. The government has made efforts to improve the quality of the tourism industry, with significant investments as of 2009 and an increased emphasis on responsible and sustainable tourism. In 2010, 206,000 people (or 7 % of the total workforce) were employed directly or indirectly in the tourism sector. Five markets account for approximately two-thirds of international tourist arrivals: the US, Russia, France, Germany and the UK. There has been an impressive growth of arrivals from Latin America and the FSU. More than 600,000

tourists are reported to have arrived from Russia, Ukraine, Moldova, Belarus and the Baltic states in 2010.

Turmoil in **Syria** makes international leisure tourism impossible. No more than 20,000 visitors entered Syria in 2013, mainly for humanitarian and diplomatic motives. The backlash of the Syrian civil war on **Lebanon** is also huge: arrivals in Lebanon decreased by 23.6 % in 2011 and again by around 20 % in 2012; a slight revival was experienced in 2013, with 1.365 mn arrivals, mainly due to business tourism and humanitarian organizations using the Lebanese corridors. The international tourism receipts declined by almost a third.

In **Jordan**, despite its political stability and economic development, the number of international arrivals dropped by 12.7 % to reach 3.970 mn in 2011. In 2012, they reached 4.2 mn but went down again in 2013 to 3.9 mn. The political instability in Syria has also greatly affected tourism in Jordan.

8.6 Tourism Competitiveness of the SEMC

Tourism competitiveness is defined by the WEF (2013) as

> the destination's ability to create and integrate value-added products that sustain its resources while maintaining a market position relative to competitors.

The TTCI aims to measure the factors and policies that make it attractive to develop tourism in different countries (WEF 2013). The SEMC are not among the most competitive tourism destinations in the world. Since 2007, they fell in the rankings, particularly after 2011 (Table 8.5).

Table 8.5 WEF travel & tourism competitiveness index 2007–2009 (From WEF 2009, 2011)

Countries	Rank 2007	Rank 2009	Rank 2011	TTCI Global 2011	Sub – index Regulatory framework rank 2011	Sub – index Business environment/ infrastructure rank 2011	Sub – index Human, natural and capital resources rank 2011
Algeria	93	115	113	3.3	101	109	113
Egypt	58	64	75	3.96	70	74	71
Israel	32	36	46	4.41	41	42	65
Jordan	46	54	64	4.14	37	72	74
Lebanon	n.a.	n.a.	70	4.03	78	63	69
Libya	n.a.	112	124	3.25	122	107	125
Morocco	57	75	78	3.93	69	77	73
Syria	n.a.	85	105	3.49	101	109	113
Tunisia	34	44	47	4.39	31	54	59
Turkey	52	56	50	4.37	66	55	28

8.7 Environmental Issues and Sustainable Tourism Development

Most tourist impact on the Mediterranean environment is accentuated by the seasonal nature of this activity: accommodation, facilities, transport networks, water supply and waste services. There is a serious scarcity of statistical data, especially in a time-series format, and a lack of homogeneous and reliable statistics concerning the impact of tourism on the environment. Yet, an agreement is emerging that the sector's future will be greatly affected by the success or failure to mitigate the impact of climate change.

SEMC ecosystems encounter seasonal stress with regard to water resources. As the peak tourist season coincides with the dry season, the tourist industry competes strongly with other industries and agriculture. This affects, among others, tourist facilities such as thalassotherapy, swimming pools, golf (which requires 10,000 m^3/ha/year) and the lifestyle of tourists (high daily water consumption).

However, the overall impact of water scarcity on the tourism sector must be seen in the context of its limited water consumption (tourism uses only 2 % of total water consumption in Morocco and Tunisia, and less than 1 % in Syria, Algeria or Libya) as compared with the agricultural sector, which accounts for more than 70 % of total water consumption. On the other hand, the tourism sector is able to pay more for its water consumption and finance desalination plants. For instance, in the project of the Canal RED-DEAD to bring back water to the Dead Sea between Israel, Jordan and Palestine, desalinization for the tourist resorts of Eilat, Aqaba and the Dead Sea has been retained as a feasible and economically viable option. Water shortage is therefore not likely to be a binding limiting factor for tourism development in general. Yet there are localized shortages, especially in oasis, where local solutions will need to be found to safeguard the prospects for the tourism sector there.

The spread of urban tourism through the creation of resorts on virgin natural territories (such as regional or national parks) or the extension of built-up areas around existing towns or resorts presents challenges for urban planning, that so far has been inadequate. The phenomenon of illegal constructions of secondary residences has spread progressively in the SEMC. The consequence of the latter is that marinas have developed very rapidly, which has had a very negative impact on the coastal environment. Dikes upset the coastal currents and reduce the natural protection of beaches by destroying the Posidonia sea grass beds, which are essential for the Mediterranean fisheries resources. The disposal of untreated waste water presents another major problem that deserves more attention.

8.8 Determinants of Tourism Development in the SEMC

The future of tourism in the SEMC will be determined by population and GDP growth, the price elasticity of tourist services, the growth of ICT and marketing, climate change, FDI, and Euro-Med cooperation.

8.8.1 The Need for Innovative Tourism Policies

Despite popular opinion, the decline in tourist arrivals and receipts in the SEMC are not only a consequence of the Arab Spring, but are also linked to the decline of their traditional European clientele. New strategies need to be defined and put in place, such as intra-regional and domestic tourism. This tendency may be reinforced in 2014 and after.

In Tunisia, the acceptance of a democratic Constitution in early 2014 significantly improved the country's international image and could augur well for the future of the tourism sector. Several innovative tourism promotion initiatives were accepted by the Ministry of Tourism in coordination with other government departments. In Libya, tourism is considered a factor that will help consolidate the country and mitigate climate changes. In Egypt, the new constitution approved in January 2014 may open a period of greater stability, a prime requirement for the development of the tourism sector.

Increasing international competitiveness is not only required to recover from the negative impact of the Arab Spring on the tourism sector but to ensure its potential contribution to income growth and employment generation. Pricing policies are often used to compensate for low competitiveness. Unfortunately, such practices reduce overall receipts, and reduce the funds available for investment, maintenance, renovation and innovation.

How can competitive forms of tourism be designed in the SEMC? Tourism in the SEMC is still highly dependent on European tour operators. Price competition is intense. Tourism development projects have been increasingly shaped by coastal resort complexes and all-inclusive package tours, providing a range of on-site services dominated by few international tour operators. As a result, standardized tourist services of this kind do not provide visitors with direct contact with the local culture and one destination can easily be exchanged for another. ICT tools could change this paradigm, reducing the intermediation between producers of tourist services and potential tourists and offering more information on the natural and cultural attractions in the SEMC.

Two subsectors, maritime tourism and religious tourism, can be seen as competitive advantages in the SEMC. The Mediterranean Sea is an important area for maritime traffic and it is currently witnessing strong development of cruising and, to a lesser extent, yachting, although growth has been slowing due to the negative environmental impacts. The sea is a 'tourist product' with enormous potential, that

has not been very well exploited by the SEMC until now. The Mediterranean Sea, with 3.3 mn cruise passengers in 2013 is now the second largest world cruising zone after the Caribbean. It experienced more than 10 % annual growth from 2005 to 2013. The economic crisis had little impact on this sector. Yachting in the SEMC is also developing rapidly because of the saturation of harbors in the North-West of the Mediterranean Sea. As a result, there is high demand for berthing places in the SEMC. Also, boat rental at competitive prices is another SEMC opportunity.

Religious tourism already accounts for 15–20 % of international tourist arrivals to the SEMC. These are not only visitors or pilgrims from Europe or other long-haul destinations but also intra-regional travelers. Religious tourism, particularly pilgrimage routes and religious inspired itineraries, revitalize territories by aiming for multiple, better quality partnerships between local and national authorities as well as fruitful cooperation among the SEMC.

There is also a need for greater diversity in SEMC tourist destinations, especially in North Africa, with the widespread opening of Algeria and Libya for coastal tourism.

National policies addressing climate change must take into consideration the interests of the tourism sector. Four environmental issues will be particularly important: (i) rising sea levels and the adjustments will require protecting the coastline, including beaches, harbors and other infrastructure; (ii) a shift in tourist demand in reaction to rising temperatures which bring milder winters and hotter summers; (iii) competition for natural resources between the tourism sector and the rest of the economy, particularly with respect to water and space, in light of further urbanization in the SEMC; (iv) the impact of the expected rise in energy costs on tourism.

The big picture of the future of tourism until 2030 was set up in the UNWTO (2011). Its main postulate is that global tourism may reach its peak of growth before this date. Transport costs could increase at a faster rate than before 2010. If GDP growth is slowing down, especially in Europe, world tourist arrivals may reach only 1.4 bn in 2030. If GDP growth is the same as in the last two decades, the UNWTO predicts 1.6 bn tourist arrivals.

8.8.2 The Importance of Tourism Cooperation

An improvement in international competitiveness will require a series of structural changes, which can benefit from greater integration with the EU. Democratization in SEMC may increase Europe's interest for close cooperation with their Southern neighbors.

Under such a scenario, the SEMC should harmonize their norms and standards applicable to health and security, environment, social and human resources, jurisdiction, etc., with those in the EU. This would increase confidence in the SEMC tourism sector and improve the business and investment climate, as well as job creation. Nevertheless, cooperation among national associations in charge of norms

and standards is not sufficient. A Mediterranean tourism organization or agency could contribute, in partnership between the private and the public sectors, to the elaboration of common policies and programs among all the Mediterranean partner countries. Such an agency could deal principally with destination planning and management and the local and regional governance of tourism. Numerous links could be created with actual and future projects, focusing on civil protection, renewable energies, maritime and land highways, the region's unique cultural heritage, a Euro-Med bank, higher education and research, a Euro-Mediterranean University, etc.

As Mediterranean enterprises are mainly small and very small, they could benefit from the assistance of tourism boards and destination marketing organizations (similar to export or trade promotion agencies). Their main objective should be to promote incentives favorable to sustainable tourism and demand-driven strategies. Under such an approach, the government sets the rules of the game but the private sector does the work of proposing and selling sustainable tourist products and services (De Wulf 2001). This means ensuring quality staffing, providing adequate funding, and evaluating results.

Concerning the environmental issues and the planning of tourism, the debate remains on two major tendencies: mega-destinations or diffused tourism in SEMC. With mega-destinations, it is possible to control the impact of pollution in a specific area. Diffused tourism may require more self-discipline on environmental issues and carbon emissions, but it would increase employment. Local authorities, bonded to international norms and standards on the quality of environment, have to decide case by case. They need to be strengthened to articulate an adequate regulatory framework and ensure its implementation. International experience and support can be very helpful and dedicated impact studies should provide guidance.

8.9 Conclusions

In 2014, the total average contribution of tourism to GDP in the SEMC amounted to ca. 12.5 %, confirming its key economic importance. Tourism employment, including jobs indirectly supported and induced by the industry, significantly contributed to overall employment in the SEMC (13 % of the total). The disruption caused by the Arab Spring and its sequels did not undermine the resilience of tourism in these countries but structural reforms and more innovative tourism policies are critically needed for their healthy and sustainable future.

The future of the tourism sector depends on policy options to increase its international competitiveness concerning governance, the environment, tourism and hotel education and training as well as to adopt EU norms and standards. With powerful support from the EU, tourism will remain one of the key sectors of SEMC economies. Cooperation among the SEMC should be strengthened. At the same time, well managed public and private investments, not only in infrastructure, buildings and tourism equipment, but also in ICT, may offer a more equitable

distribution of the benefits coming from tourism among the various actors. Setting up adequate hotel and tourism training policies can help avoid the scarcity of skills and technological abilities which undermine the sector's competitiveness.

The level of capital investment, especially in transport and ICT (see Chaps. 6 and 10) may have to increase further to ensure a sustainable development. The inadequate advance in ICT limits the creation of SME, which are more labor-intensive than large international or national companies more oriented towards increasing productivity and reducing employment. In the long term, these large enterprises may be counterproductive for the development of tourism and the image of SEMC destinations.

Tourism authorities in the SEMC need to radically amend their promotion and marketing policies. The hegemony of tour operators should end as they prefer to promote mass tourism on mass seaside accommodation. The impact of mass tourism on the littoral environment is quite negative. The development of hinterland tourism has better consequences for local populations: an increase in employment opportunities, the creation of a network of local enterprises, the improvement of public services in security, health, transportation and education, the creation of clusters with other local activities such as agriculture, handicrafts, artistic design, and advanced technologies.

Three other major areas need policy-makers' focused attention. First, Mediterranean tourism is changing and there is a need to ease policies that discourage FDI in tourism and that limit SEMC integration with the EU and the rest of the world. The vision of the Mediterranean market must go beyond the Western and Eastern European outbound markets, and take into account China, India, Indonesia, Brazil, Japan and North America. It should put more emphasis on domestic and intra-regional tourism, which has very promising prospects. Investment in tourism equipment and infrastructure should reflect this tendency, with specific characteristics that are attractive for this clientele.

Secondly, the spectacular development of new products and services such as nautical, medical, religious and cultural tourism and maritime cruises should lead to the reexamination of the homogenous brand identity of the Mediterranean as only a sea, sand, and sun destination. The SEMC have to innovate in products and services that do not offend their own values and identities and highlight their own customs and traditions. Such a shift in perception would particularly benefit the SME (which create more employment), and would have the support of local authorities, mainly in the hinterland.

Thirdly, climate change will seriously impact the environment, primarily the sea level as well as water and energy availability. The paradox is that rising temperatures will by no means disappoint tourists seeking sun and heat. Tourism strategies must take an active role in the mitigation of climate change. They will require in-depth research and well-targeted policy responses which should reflect the specificities of each country in respect to the sustainable and responsible development of its tourism. This means the development of renewable energies, eco-building, eco-mobility and eco-transportation, coastal management, oasis and desert development.

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Chapter 9
The Textile Industry

Christiane Haberl

9.1 Introduction

This chapter assesses the competitiveness of the textile industry in the SEMC and identifies changes that have to take place in order for it to remain competitive in the future. The textile industry is largely representative of the manufacturing sector and is undergoing important transformations. According to Woodard (2011), the global textile industry is at a 'tipping point' mainly caused by five factors: rising raw material prices due to shortages, rising labor costs in traditionally low-cost countries, increasing transportation costs as a consequence of rising oil prices linked with political instability, delivery reliability from MENA affected by political instability and concerns related to fair trade and environment.

To evaluate the current situation of the textile industry, we look at SEMC textile trade flows in a global context. This is complemented by a snapshot of FTA and NTM which affect the competitiveness of the region. We then benchmark competitiveness to the WBDB ranking and the LPI, and analyze the strengths and weaknesses of a few selected countries as well as the threats and future opportunities of the entire region. The conclusion outlines potential changes and how they are expected to impact the future success of the SEMC textile industry.

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9.2 Global Competition in Textiles

As the textile market is becoming more global, the competitiveness of a specific country or region needs to be assessed in a world-wide context. Ideally, we could compare the international production statistics of the global textile industry. However, since this type of data is not readily available, we examine global exports.

Table 9.1 presents data on global textile exports disaggregated by HS-code two-digit product groups for the 2008–2012 period, including annual growth rates. In 2012, total global exports of textile products amounted to USD739 bn.

Globally, the most important types of exported textiles in 2012 were articles of apparel and clothing accessories, with knitted and crocheted articles accounting for 29 % of world trade in textile and non-knitted and crocheted articles (26 %). Apart from these two product groups, cotton accounted for 9 % of global textile exports followed by other man-made articles with an 8 % share.

The fluctuations in global textile exports are less intense than in total world exports (except 2012), suggesting that textile trade is more stable than global trade flows in general. For instance, total exports declined by −23 % in 2009 as compared to 2008 whilst textile exports only suffered a −14 % loss. That means textiles have been less affected by the global crisis than other sectors. On the other hand, textile exports do not grow as fast as global exports. In 2012, they even declined while global exports stagnated.

To identify the most resilient textile product groups, we track how textile exports were impacted by the crisis of 2009. In other words, the decline in exports between 2008 and 2009 can be interpreted as the vulnerability of each product group to a downward movement in the business cycle. Interestingly, wool products seem to be the most vulnerable as they experienced an exports decline of 26 % during this period. They were followed by special woven fabrics (−25 %) and silk, which decreased by 21 %. From a global perspective, however, only wool and special woven fabrics fared worse than overall exports, which declined by 23 %. This means the textile industry has been relatively resilient to the downturn in world trade.

To understand situation of the SEMC, the relative positions of countries need to be analyzed. China is the most important textile exporter (more than one third of global textile exports). China is the export leader in all textile product groups apart from wool, wadding and textile floor covering where Italy, Germany and Belgium lead, respectively. Since articles of apparel and clothing accessories accounted for almost two thirds of textile exports in 2012, leaders in these two HS groups also score best at the global level. Apart from Turkey, which is the third most important textile floor-covering exporter (after Belgium and China), no other SEMC is among the top three textile exporters in any product group.

Turkey is the largest textile exporter among the SEMC. It ranks sixth internationally with 4 % share in global textile exports based on its strong position in textile floor coverings, knitted or crocheted articles of apparel and clothing accessories as well as other made-up textile articles. Egypt is second. It ranks 27th in

Table 9.1 Global textile exports by product type, USD mn (From ICT 2014)

Product group	2008	2009	2010	2011	2012
50 Silk	3,539	2,788	3,270	3,401	3,146
Annual growth, %		−21 %	17 %	4 %	−7 %
51 Wool	13,905	10,349	12,696	16,230	14,452
Annual growth, %		−26 %	23 %	28 %	−11 %
52 Cotton	52,337	42,264	58,021	70,521	66,845
Annual growth, %		−19 %	37 %	22 %	−5 %
53 Vegetable	3,317	2,733	3,712	4,314	3,824
Annual growth, %		−18 %	36 %	16 %	−11 %
54 Man-made filaments	42,964	34,209	40,818	48,802	46,079
Annual growth, %		−20 %	19 %	20 %	−6 %
55 Man-made staple fibers	32,760	27,291	33,744	41,884	38,825
Annual growth, %		−17 %	24 %	24 %	−7 %
56 Wadding, felt and nonwovens	19,759	17,232	20,215	23,374	22,366
Annual growth, %		−13 %	17 %	16 %	−4 %
57 Textile floor coverings	14,128	11,789	14,073	15,457	14,550
Annual growth, %		−17 %	19 %	10 %	−6 %
58 Special woven fabrics	14,096	10,536	11,535	12,789	12,563
Annual growth, %		−25 %	9 %	11 %	−2 %
59 Impregnated, coated textile	21,284	18,156	22,479	25,768	24,336
Annual growth, %		−15 %	24 %	15 %	−6 %
60 Knitted or crocheted fabrics	24,955	21,949	26,338	30,692	30,183
Annual growth, %		−12 %	20 %	17 %	−2 %
61 Knitted or crocheted articles	179,570	160,623	180,335	210,800	212,135
Annual growth, %		−11 %	12 %	17 %	1 %
62 Not knitted or crocheted	182,777	157,375	168,762	198,927	193,400
Annual growth, %		−14 %	7 %	18 %	−3 %
63 Other made-up textile articles	45,184	42,626	48,424	55,909	55,922
Annual growth, %		−6 %	14 %	15 %	0 %
Textile exports	650,575	559,917	644,422	758,867	738,627
Annual growth, %		−14 %	15 %	18 %	−3 %
World exports	15,973,654	12,320,927	15,048,352	18,001,381	18,058,027
Annual growth, %		−23 %	22 %	20 %	0 %

global textile exports, with a mere 0.5 % share, mainly due to its substantial exports of textile floor coverings.

To take advantage of larger value added and growth potential in textile exports, the SEMC may need to aim for a larger share in (i) apparel and clothing accessories with knitted or crocheted articles that account for 29 % of total world trade in textiles and (ii) non-knitted and crocheted articles that constitute 26 % of total world textile exports. Strengthening the textile sector is a good strategic decision, bearing in mind that the sector is relatively resilient to fluctuation in global output and would help absorb the growing labor force. The most important global competitor is China; gaining competitiveness versus China will thus be the litmus test of this strategy. Turkey appears best positioned to take on this role in the region due to the fact that it already ranks among the top ten textile exporters.

9.3 Trade Agreements Related to the Textile Industry

All of the SEMC except Libya and Syria have bilateral FTAs with the EU that aim to gradually establish reciprocal duty free access for industrial products to the markets of the signatories (see Chap. 2). Agricultural products are subject to different regulations than industrial products. Turkey went beyond an FTA by establishing a CU with the EU and obtaining EU candidate status. Libya's relationship with the EU takes place outside of a bilateral legal framework. Syria concluded FTA negotiations with the EU but the FTA was never signed due to the internal conflict in Syria. Apart from Algeria and Libya, all of the SEMC have an FTA with EFTA countries.

Regarding the region itself, all of the SEMC apart from Turkey and Israel are part of the PAFTA that achieved full trade liberalization of goods in 2005. Additionally, Egypt, Jordan, Morocco and Tunisia are linked through the Agadir Agreement – currently a FTA. Egypt and Libya are linked with each other through an FTA within the COMESA. Turkey has signed a separate bilateral FTA with Tunisia, Palestine, Syria and Israel.

Three of the SEMC, namely Israel, Jordan and Morocco, have FTAs with the US. Furthermore, products manufactured in Israel, Jordan, Egypt and West Bank/Gaza are allowed to enter the US duty-free if they are produced in QIZ. Israel and Jordan also have FTAs with Canada.

The MFA governed world textile trade from 1974 to 2005 by imposing quotas on the amount of textiles that developing countries were allowed to export to industrialized countries. Its expiration in 2005 had an important impact on the region as the quotas were lifted. The MFA had somewhat protected the textile industry of the SEMC against low-cost producers from China, India and Pakistan. Some of the SEMC try to limit their losses by exploring better trade relations with selected Asian countries. For instance, Syria and China are discussing possible joint ventures in textile (Fibre2fashion 2010).

In conclusion, the SEMC are trying to integrate as much as possible with each other and with two major trading blocks, i.e., the EU and NAFTA.

9.4 Non-tariff Measures

NTM also affect textile exporters in the SEMC and are not fully addressed in the trade agreements mentioned in Sect. 9.3. De Wulf et al. (2009) report on the experience of SEMC exporters in their trade with the EU. The study relies on numerous interviews with entrepreneurs from five SEMC (Egypt, Morocco, Tunisia, Jordan, Israel).

Within TBT, textile exports from the SEMC are negatively affected by standards and conformity assessments in the EU, the lack of harmonization with EU legislation, labeling, marking and packaging (special packaging, parcel weight clauses), technical controls/product testing and product certification (quality norms, cumbersome test requirements to obtain compliance certification, chemical testing) and differences in the implementation of EU regulations.

The lack of expertise of customs agents in the partner countries (who are unaware of existing agreements), the lack of standardization with EU customs regulations (inspection before clearance) and the resources needed for customs clearance (high shipping costs) represent further NTM. ROO also hinder exports to the EU for SEMC textile exporters due to their complexity (restrictiveness, complicated documentation, difficulties in appraisal of product value, certifications, double transformation rule).

Further trade barriers were revealed in unstructured interviews with SEMC exporters. They include: IPR (only products under the EU IPR are considered to be high quality), public procurement (preference for European suppliers) and cultural/social/political barriers (social conformity).

Based on a detailed analysis of NTM in Chap. 2, one finds that there is major potential for enhancing trade among the SEMC themselves and between the SEMC and the EU if (i) logistics are improved, (ii) trade costs are decreased and (iii) NTM are reduced. SEMC textile exporters may benefit from a reduction of the high NTM.

9.5 Competitiveness Benchmarked

In addition to the analysis of trade flows, we explore the WB DB survey (World Bank 2014a) and WB LPI (World Bank 2014b) to evaluate the competitiveness of the manufacturing sector in general, which impacts the textile subsector.

Table 9.2 suggests that Israel is by far the easiest country to do business in, followed by Tunisia and Turkey. Other countries are ranked much lower, making them business-unfriendly places.

Table 9.2 Ease of doing business ranking (From World Bank 2014a)

Country	Israel	Tunisia	Turkey	Morocco	Lebanon	Jordan	Egypt	Algeria	Syria	Libya
Ease of doing business rank	35	51	69	87	111	119	128	153	165	187
Starting a business	35	70	93	39	120	117	50	164	135	171
Dealing with construction permits	140	122	148	83	179	111	149	147	189	189
Getting electricity	103	55	49	97	51	41	105	148	82	68
Registering property	151	72	50	156	112	104	105	176	82	189
Getting credit	13	109	86	109	109	170	86	130	180	186
Protecting investors	6	52	34	115	89	170	147	98	115	187
Paying taxes	93	60	71	78	39	35	148	174	120	116
Trading across borders	10	31	86	37	97	57	83	133	147	143
Enforcing contracts	93	78	38	83	126	133	156	129	179	150
Resolving insolvency	35	39	130	69	93	113	146	60	120	189

The ranking pertaining to trading across borders reflects the importance of NTM. This variable is in line with the overall ranking, with slight variations. Applying the ranking to the textile industry, there seems to be no apparent relationship between the 'trading across borders' ranking and the importance of the textile industry. For instance, Turkey is the most successful textile exporter in the region as it is ranked sixth in the global textile trade but only 86th in 'trading across borders'. One of the possible explanations is insufficient standardization in labeling and packaging requirements (see Chap. 2). This leads to increasing costs of textile exports in Egypt, Israel, Morocco, Jordan, and Tunisia.

The WB LPI (Table 9.3) measures the actual logistical environment faced by traders. This measure summarizes countries' performance in six areas: customs, infrastructure, international shipments, logistics competence, tracking and tracing as well as timeliness, with the maximum score per indicator of 5.

Amongst the textile intense SEMC, Turkey was ranked best at 27th, followed by Israel at 31st, Tunisia at 41st, and then Morocco, Egypt, Syria and Lebanon ranked 96th or higher. No data was available for Palestine.

Efforts to improve the overall competitiveness of a given sector (which would result in a higher ranking in both surveys) have been addressed in a number of countries. Macroeconomic factors that impact external competitiveness are discussed in Chap. 1. Here we will briefly discuss the potential role of Trade Promotion Agencies. These have been created at significant cost, yet have often underperformed in their attempt to assist exports. The few successful exceptions share seven features. They promote incentives favorable to exports, represent autonomous operations, support a demand-driven strategy, strike a balance between offshore and onshore objectives, ensure quality staffing, provide adequate funding and evaluate results (De Wulf 2001).

Table 9.3 Logistics performance index 2012 (From World Bank 2014b)

Rank	Country	Year	LPI	Customs	Infra-structure	International shipments	Logistics competence	Tracking & tracing	Timeliness
27	Turkey	2012	3.51	3.16	3.62	3.38	3.52	3.54	3.87
31	Israel	2010	3.41	3.12	3.6	3.17	3.5	3.39	3.77
41	Tunisia	2012	3.17	3.12	2.88	2.88	3.12	3.25	3.75
50	Morocco	2012	3.03	2.64	3.14	3.01	2.89	3.01	3.51
57	Egypt	2012	2.98	2.6	3.07	3	2.95	2.86	3.39
92	Syria	2012	2.6	2.33	2.54	2.62	2.48	2.35	3.26
96	Lebanon	2012	2.58	2.21	2.41	2.71	2.38	2.61	3.11
102	Jordan	2012	2.56	2.27	2.48	2.88	2.17	2.55	2.92
125	Algeria	2012	2.41	2.26	2.02	2.68	2.13	2.46	2.85

9.6 Industrial Development: Level on the Value Chain

The level of development of a textile industry can be measured by the proportion of raw and processed materials in total textile exports. In other words, as a rule of thumb, the more developed the industry, the higher its position on the value chain. The value chain can be defined as

> [i]nterlinked value-adding activities that convert inputs into outputs which, in turn, add to the bottom line and help create competitive advantage. (Business Dictionary 2014)

In general, the specialization in more advanced textiles, product diversification, R&D activities, training and other activities are indicators that an industry is moving up the value chain.

Applied to the textile industry, processors of raw textiles such as cotton fibers can be considered as operating at the lower end of the value chain, while producers of finished products like shirts, trousers, carpets, workers outfits have moved up the value chain. Regarding the application of textiles, traditional textiles include fibers like cotton, yarn and wool processed with techniques like spinning, dying, embroidering and weaving mostly used for decorative applications like clothing. In contrast, technical textiles represent high performance fabrics to be used in industrial specialized applications and are usually divided into twelve sub-industries (Teonline 2011). Usually, a move up the value chain is related to increased specialization, profits and R&D.

The SEMC textile industry is still focusing on products that are quite low on the value chain. In 2012, the share of textile exports in total exports amounted to 24 % in Tunisia, 22 % in Jordan, 19 % in Syria, 18 % in Turkey, 17 % in Morocco, and 10 % in Egypt. In the other five SEMC, textile exports only accounted for 3 % or less of overall exports.

In six SEMC with significant textile exports, there is variation concerning their position in the textile value chain. A high percentage of raw textile exports (silk, wool, cotton, fiber, wading) indicate a rather low position and of processed textiles a higher one. Raw textile exports from the traditional cotton producers (Egypt and Syria) account for over 20 % of total textile exports. Meanwhile countries like Jordan, Morocco and Tunisia seem to operate much higher up the value chain with only 1–3 %. With 10 % of its textile exports being raw, Turkey is also in this category. In conclusion, since they are positioned lowest on the value chain, Syria and Egypt would profit from moving up the value chain. Efforts to move up the value chain in Turkey might have the biggest effect on the regional textile exports due to Turkey's share in international textile exports and its trade integration with the EU.

Table 9.4 General challenges and threats (based on author's analysis)

Opportunities	Threats
Lowering NTM with the EU under the AA	Relatively low WBDB ranking
FTA negotiations with Turkey, which would give better access to the EU due to the Turkey-EU CU albeit limited through ROO	Relatively low WB LPI
Strong demand from the US and EU	Competition from Asia due to expiration of MFA
Shift/stronger movement up the value chain (e.g. towards technical textiles)	Vulnerability due to openness to EU imports based on AA
Successful modernization of industry	(Further) escalation of political tensions
	Stagnation in terms of modernization
	Signature of FTA with Turkey delayed
	NTM with EU unchanged

9.7 SWOT Analysis

To gain qualitative insights into the situation of the SEMC textile industry, we have been interviewing local industry experts and the public authorities of six countries where textile exports represent a two-digit share in total exports: Egypt, Jordan, Morocco, Syria, Tunisia and Turkey. We have also reviewed the selected literature, including Limanthour (2008), the ANIMA Investment Network (2010), and De Wulf et al. (2009).

Tables 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, and 9.10 present a summary of the findings in the form of a modified SWOT analysis. Whereas Table 9.4 summarizes future challenges and opportunities for all SEMC, Tables 9.5, 9.6, 9.7, 9.8, 9.9, and 9.10 contain country-specific characteristics.

Table 9.5 Egypt's strengths and weaknesses (based on author's analysis)

Strengths	Weaknesses
Important role in high quality varieties (long/extra long staples)	Low rank in WB DB, especially in dealing with construction permits and enforcing contracts
90 % of the industry is private	Low LPI mainly due to weakness in customs
Included in the industrial modernization program	Need to increase productivity to remain competitive
Strong domestic market	Political tensions
Efforts for vertical integration of the industry	Reliance on immigrant workers
Attempts to create Egyptian brands	Low safety and health standards
Strengthening local design and pattern-making capabilities	
Capabilities to specialize in bio-cotton	
Technical fibers: packtech, clothtech	
Tax rebate for exports	
Low labor and energy cost	
Relatively high usage of e-commerce	
QIZ with the US	
Investment by UK to introduce cleaner production practices in industry	
Good image of Egyptian cotton	

Table 9.6 Jordan's strengths and weaknesses (based on author's analysis)

Strengths	Weaknesses
Mostly in hands of private companies	Low rank in WB DB, especially in enforcing contracts and getting credit
Tax exemptions for export income	Low LPI score due to customs and infrastructure
Most open market in the Agadir countries	Reliance on exports because of small size of domestic market
Orientation towards exports	Dependency on China for raw textiles (80 % of imports, threads, fabrics)
Qualified low-cost workforce	Dependency on exports to the US as main clients (88 % of Jordan textile exports went to the US)
Economies of scale – large series	Shortage of skilled workers
Developments of new apparel designs	Limited training possibilities in other textile-related areas than design
Training in design (24 vocational centers)	Need for more marketing activities
Industrial modernization program	Low levels of FDI and vulnerability to external changes
Respect for international work and safety standards	
Emergence of technical textile industry	
Crisis in the past has led to the survival of the fittest, who currently make up the industry	
QIZ with the US	

Table 9.7 Morocco's strengths and weaknesses (based on author's analysis)

Strengths	Weaknesses
2005 Public recovery plan for the reorganization of manual operations	Low rank in WB DB, especially in protecting investors
Public marketing support	Need of exports for economic growth
Geographical proximity to Europe	Relatively low productivity
Responsiveness, flexibility, lead time	Reliance on imports of raw material: 61 % of imports are textiles from the EU
Outstanding image with trading partners	Relatively high cost of labor and energy
Integration of new technologies	
Qualified and motivated labor force	
Industry highly active in promotion like trade shows and exhibitions	
Proximity to Europe assists just-in-time production	

Table 9.8 Syria's strengths and weaknesses (based on author's analysis)

Strengths	Weaknesses
Tax advantages for the agricultural sector (related to textile raw materials)	Low rank in WB DB
Investment Promotion Law (foreign ownership rights, etc.)	Low LPI score mainly due to customs and infrastructure
Government support to become the most significant economic-industrial sector (funds towards the development of clothing, cotton, blended and denim fabrics)	Focus on traditional textiles
Relatively low dependence on EU, US and SEMC for exports as 33 % of textile exports go to other regions	Rural–urban balance artificially upheld with public investments
Modernization of textile industry through Industrial Modernization and Upgrading Program	Lowest proportion of processed textiles in SEMC (43 % of textile exports are raw)
	Political situation

Table 9.9 Tunisia's strengths and weaknesses (based on author's analysis)

Strengths	Weaknesses
Progress in economic reforms	Room for improvement in WB DB ranking, especially in dealing with construction permits and getting credit
FDI inflow to the textile sector, which upgraded its production qualitatively to respond to competition from Asia	Room for improvement in LPI score, mainly in logistics competence and customs
Monastir El Fejja Competitiveness Pole	Almost all exports to the EU
Benefits to 100 % export-oriented firms (tax benefits, etc.)	Missed opportunity to further move up value chain by diversifying product range
Training and research –schools and training centers	Lack of designers
Proximity to Europe helps just in time production	Relatively low motivation of labor (high number of absences)
Good price-quality balance	Relative dependence on textile exports
High textile exports share	Not enough focus on technical textiles
Relatively high usage of e-commerce	
Availability of skilled labor	
Focus on processing of textiles rather than raw textiles	
Movement from subcontracting to co-contracting	
Progress in specialization (e.g. already present in technical textile – autotech, aeronautic)	

Table 9.10 Turkey's strengths and weaknesses (based on author's analysis)

Strengths	Weaknesses
Most modern textile sector in SEMC	Room for improvement in WB DB ranking, especially in dealing with construction and closing a business
Availability of skilled labor	Room for improvement in LPI score, mainly related to customs
Detailed and sophisticated strategic planning at public level	Highest labor costs in the region
Strong technical textile industry	Highest energy costs in the region
CU with the EU	
Strong industrial relationships with the EU	
Flexible textile sector, small lots	
Quick response time	
Proximity to the EU market	
High political stability	

9.8 Future Developments

Below we analyze three potential scenarios of future developments in the textile sector in the SEMC: status-quo, best-case and worst-case scenarios.

9.8.1 Status-Quo Scenario

In the status-quo scenario, current trends would continue, implying a lack of empowering policies, a lack of technological and social changes, and no greater integration with the rest of the world and the EU in particular.

In this case, while the textile industry is likely to continue to play an important role in some SEMC (Egypt, Turkey, Syria, Morocco and Tunisia), it would stagnate and continue losing ground to Asian manufacturers due to its inability to modernize and move up the value added chain quickly. Rather, short-term efforts would aim at countering competition from Asia and would cave into protectionist measures. The latter might successfully maintain the trade balance in the short-run but would lead to a decrease in trade with the EU in the long run. Egypt and Syria could remain trapped in the manufacturing of raw textiles, accounting for over 20 % of their textile exports, while other countries would continue to focus on processed textiles. The large regional discrepancies in the WB LPI and DB scores would remain unchanged, with Turkey and Israel performing quite well and other SEMC facing challenges.

As Turkey is the only country that could compete at the international level, it would do rather well, benefiting from the CU and FTA with the EU. It might actually benefit from the relatively slow progress in other SEMC and take over their European and American customers despite its relatively higher labor and energy costs. While most SEMC remain rather low-cost production countries, Turkey might slowly move towards European standards and productivity and would thus build on its recently developed strong position in technical textiles.

9.8.2 Best-Case Scenario

The best-case scenario assumes successful EU-SEMC integration, including Turkey's accession to the EU. In the case of SEMC other than Turkey, this would involve a substantial upgrade of their trade and economic relations with the EU beyond the current 'shallow" FTA (see Chap. 2) and perhaps establishing a CU with the EU following the experience of Turkey (see Chap. 3). In turn, this would require major reforms in the SEMC, including a social transition and adopting specific measures such as meeting EU import standards and the creation of local conformity assessment capacities.

Trade with the rest of the world would also benefit from an improvement in the WB DB indicators and LPI. In particular, NTM would create less trade impediments and the FDI would increase.

The relative importance of the textile industry would likely stabilize in percentage terms but would grow in size following the growth of the total market. Since the textile sector is labor intensive, its expansion would absorb the labor force and thereby contain growing unemployment.

This scenario implies a higher interest of European companies in the SEMC as production centers with labor and product quality instead of simply cheap labor. Competition from Asian manufacturers would remain rather marginal. The shift towards technical textiles would move the SEMC out of the low wage sweatshop style of textile production. Due to the availability of additional resources and the greater attraction of FDI, the SEMC would be able to increasingly engage in research and training and invest in technical textile capital and skilled labor, which, in turn, would strengthen their competitive advantage as global players in processed textile production.

9.8.3 Worst-Case Scenario

This scenario would imply backsliding from present achievements, lower integration both regionally and with the Rest of the World (including the EU). This could happen as a result of political instability in the region and it would render any trade agreement inactive and seriously disturb textile production processes. On the other hand, growth stagnation in the EU and the continuation of the Eurozone debt and financial crisis could also further jeopardize trade integration between the EU and the SEMC. This would have disastrous effects on the SEMC textile industry as most of the countries are quite dependent on textile exports for their overall economic standing.

The WB DB and LPI scores would be expected to decline in such a scenario. Increased political risk would make the SEMC less attractive as FDI destinations and hamper international competitiveness. Intra-regional integration would also be unlikely, as SEMC would become inward looking and would compete with each other rather than cooperate, opting for protectionist measures.

9.9 Conclusions

In conclusion, the successful development of the textile industry in the SEMC requires several measures: a movement up the added value chain by focusing on processed textiles and by engaging in activities such as marketing, R&D, specialization or diversification of the product range. Measures that improve the WB DB ranking and LPI will especially assist in rapid development as they are essential for

increasing external competitiveness. A general improvement of the business climate would greatly contribute to the overall progress of the textile sector. NTM should be reduced and the trade integration process with the EU and the US should be fostered.

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Chapter 10
Information and Communication Infrastructure

Jawad J. Abbassi

10.1 Regulatory Framework and Privatization

There is a global tendency towards establishing independent regulators to oversee the telecom sectors. In most of the SEMC, there are telecom regulatory bodies whose responsibilities include issuing licenses, allocating spectrum and numbers and/or regulating competition and prices. Despite claims of independence, many regulatory authorities remain closely tied to their governments, with ministers and other government officials heading and holding seats on their boards. Some regulators, e.g. in Lebanon, must obtain the Ministry's approval for all of their decisions. Moreover, in a number of countries, the telecom sectors remain under the control of people close to the ruling regimes who can influence tender outcomes.

Still, the establishment of regulators came with a general policy of privatization and liberalization. As a result, most SEMC opened up their markets for multiple players, enhancing competition and increasing the number and quality of services. With the exception of Lebanon and Syria, which have cellular duopolies under government control, other SEMC have fully competitive cellular markets, with three or more operators. Fixed-telephony lags, however, with only four countries having competitive markets. All of the SEMC except Libya have competitive internet markets, most of which are service-based, not infrastructure-based competition (Table 10.1). It must be noted that post-Qaddafi Libya has a feeble central government and the internet market is now in a state of flux.

All of the SEMC except Libya have attracted FDI and local private investment in their telecom sectors. In Algeria, the public sector has taken ownership away from foreign investors (probably related to the dispute between the government and Orascom Telecom).

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Table 10.1 Status of competition in ICT 2013 (From the AAG)

Country	Cellular	Fixed	Internet
Algeria	Competitive	Monopoly	Competitive
Egypt	Competitive	Monopoly	Competitive
Israel	Competitive	Competitive	Competitive
Jordan	Competitive	Competitive	Competitive
Lebanon	Controlled Duopoly	Monopoly	Competitive
Libya	Competitive	Duopoly	Monopoly
Morocco	Competitive	Competitive	Competitive
Palestine	Competitive	Monopoly	Competitive
Syria	Controlled Duopoly	Monopoly	Competitive
Tunisia	Competitive	Competitive	Competitive
Turkey	Competitive	Competitive	Competitive

As in the rest of the world, regulators have found it easy to liberalize the cellular markets. Fixed and internet markets have proved to be trickier. For example, in Algeria, the second fixed-line operator exited after incurring massive losses. And ILD competition, where it exists, as in Jordan, Israel, Turkey, Morocco, Tunisia and Egypt, has resulted in a rapid decline of ILD revenues. But infrastructure-based fixed services competition has not been a stellar success in any SEMC.

While most SEMC have opened up their markets to competition, the incumbent telecommunication operators in more than half of them are still controlled by the government (Table 10.2). In 2012, five governments continued to own over 50 % of shares in the incumbents for fixed and mobile services. In Algeria, Lebanon, and Syria there is full state ownership and control of the incumbent operators, while Egypt and Tunisia have majority ownership (80 % and 65 % respectively).

10.2 Telecom Services Coverage

In terms of telecom service coverage in individual SEMC, in 2012, Libya represented the highest cellular services penetration rate (calculated as % of population) at 146.4 % followed by Jordan at 140.6 %. Meanwhile, the Syrian market had the lowest cellular penetration rate of 60.2 % by the end of 2012. This could be a result of lagging behind other countries in the liberalization of its cellular telephony market.

In terms of fixed telephony, Israel topped the list with 45.5 % fixed line penetration by the end of 2012 and Syria came in second at 20.3 %. Jordan had the lowest penetration rate at 6.3 %, which can be explained by fixed-cellular substitution due to the boom in the low cost prepaid cellular market which gives households an alternative to main lines.

Table 10.2 Privatization of telecom operators, 2012 (From the AAG)

Country	Operator	Government sector	Public sector (indirect government sector)	Private sector
Algeria	Djezzy	–	–	100 %
	Nedjma	–	–	100 %
	Mobilis	100 %	–	–
Egypt	Telecom Egypt	80 %	–	20 %
	Mobinil	–	–	100 %
	Vodafone Egypt	36 %		64 %
	Etisalat Misr	–	17 %	83 %
Jordan	Zain	0	–	100 %
	Orange	3 %	29 %	68 %
	Umniah	–	4 %	96 %
Lebanon	MTC Touch	100 %	0 %	0 %
	Alfa	100 %	0 %	0 %
	OGERO	100 %	0 %	0 %
Morocco	Maroc Telecom	30 %	0 %	70 %
	Meditel	0 %	0 %	100 %
	Wana	0 %	0 %	100 %
Palestine	Paltel	0 %	19.61 %	80.39 %
	Jawwal	0 %	9.4 %	90.7 %
	Wataniya Mobile	0 %	36.6 %	63.4 %
Syria	Syriatel	–	–	100 %
	MTN Syria	–	–	100 %
	Syrian Telecom	100 %	–	–
Tunisia	Tunisie Telecom	65 %	–	35 %%
	Tunisiana	–	–	100 %
	Orange Tunisie	–	–	100 %

Israel and Lebanon topped the list in fixed internet penetration rates by the end of 2012, while Egypt and Morocco came in last with penetration rates of 2.8 % and 2.1 %, respectively.

The bottom row of Table 10.3 presents average penetration rates for the entire region: 104.1 % in the case of cellular telephony, 13.5 % for fixed-line telephony and 6.2 % for fixed internet accounts, all by the end of 2012.

As compared to other regions, the Arab states, which comprise the majority of the SEMC, rank below the Americas and Europe but above Africa in terms of cellular, fixed and internet penetration rates.

Table 10.3 Cellular, fixed and internet coverage, 2012 (From AAG, ITU and WB)

Country	Cellular lines (000s)	Cellular penetration	Fixed lines (000s)	Fixed lines' penetration	Fixed internet accounts (000s)	Fixed internet accounts' penetration
Algeria	37,202	98.2 %	3,199	8.4 %	2,241	5.9 %
Egypt	97,372	116.4 %	7,300	8.7 %	2,330	2.8 %
Israel	9,225	116.7 %	3,594	45.5 %	1,937[a]	24.5 %
Jordan	8,984	140.6 %	400	6.3 %	301	4.7 %
Lebanon	3,700	86.2 %	865	20.2 %	488	11.4 %
Libya	9,587	146.4 %	814	12.4 %	725	11.1 %
Morocco	39,016	119.7 %	3,279	10.1 %	685	2.1 %
Palestine	3,287	76.6 %	396	9.2 %	186	4.3 %
Syria	13,167	60.2 %	4,452	20.3 %	782	3.6 %
Tunisia	12,841	119.1 %	1,106	10.3 %	572	5.3 %
Turkey	67,681	91.5 %	13,860	18.7 %	7,858.20[a]	10.6 %
Total	302,062	104.1 %	39,238	13.5 %	18,106	6.2 %

Notes: Algeria's internet accounts include the ADSL accounts only
[a]Broadband accounts only

Despite high cellular penetration rates in some countries, the average regional penetration rate (101.6 %) is lower as compared to developed markets across the world; in Europe, for instance, penetration rates are 123.3 %. This means that quite a large part of the population remains unserved or underserved in some SEMC (Fig. 10.1).

Similarly to cellular services, Arab countries had low fixed telephony and internet penetration when compared to Europe, the Americas and the CIS. Europe had the highest fixed line penetration rate, followed by the Americas, the CIS and the Asia and Pacific region. Fixed-line coverage in the Arab region is a quarter of that in Europe (Fig. 10.2).

Europe, the Americas, and the CIS also took the lead with respect to internet users penetration rates. However, Arab countries had higher penetration rates than the Asia and Pacific region and Africa. The internet service coverage in Arab countries is less than two thirds that of Europe (Fig. 10.3).

10.3 Infrastructure Indexes

This section provides a summary comparison of the SEMC to the rest of the world with respect to global indices such as the TII, GeGDI and WMI.

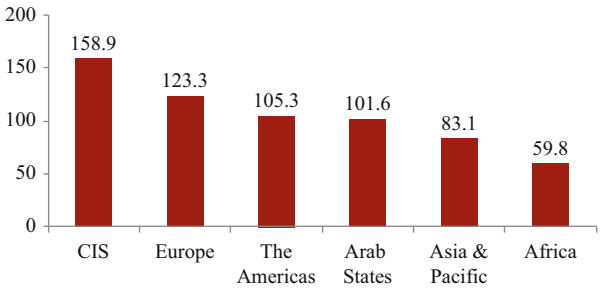

Fig. 10.1 Cellular ranking: subscription estimates per 100 inhabitants, 2012 (From ITU)

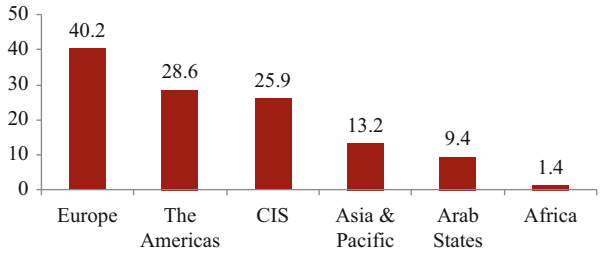

Fig. 10.2 Fixed line ranking: estimates of number of lines per 100 inhabitants, 2012 (From ITU)

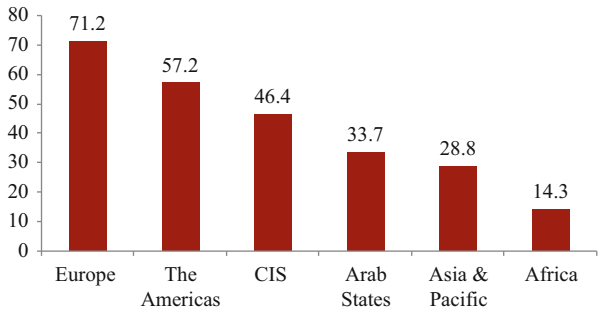

Fig. 10.3 Internet users ranking: estimates of users per 100 inhabitants, 2012 (From ITU)

10.3.1 The Telecommunication Infrastructure Index

The TII is a weighted average index of six indices of a country's ICT infrastructure capacity, which includes the number of PCs, internet users, fixed-telephony lines, online population, mobile phones and TV sets, all per 1,000 inhabitants.

Of the SEMC, only Israel, Libya and Turkey have TIIs above the world average. Israel scored the highest TII at 0.686, followed by Libya and Turkey, with indices of 0.374 and 0.348, respectively. The TII of the remaining seven SEMC is comparable to the world average, except for Algeria which has an index of 0.181 (Fig. 10.4).

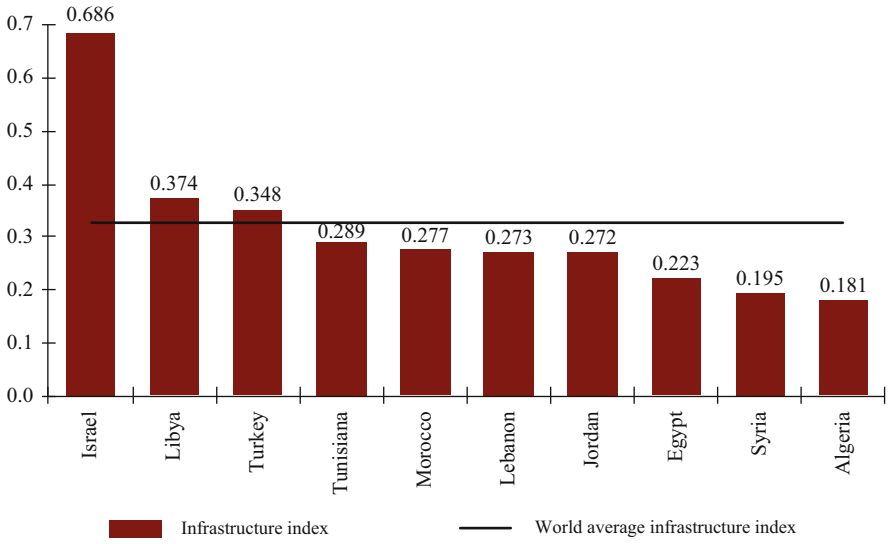

Fig. 10.4 The telecommunication infrastructure index, 2012 (From www2.unpan.org)

10.3.2 Global e-Government Development Index

The GeGDI is a measure created by the UN to assess e-government initiatives. It shows the level of development of e-government services and measures the capacity and willingness of individual countries to use them for ICT-led development.

According to Fig. 10.5, all SEMC made some progress in this area. However, the GeGDI varies among individual SEMC. Three of them (Israel, Turkey and Lebanon) rank above the global average.

AAG (2013) compared the main e-government portals of the Arab countries (by August 2013) based on the presence of various features dealing with information availability, service delivery, and public access. Features assessed included: mobile messaging services, social networking presence, online publications, e-mail registration, user payments, presence of online services and online database availability on the website. The comparison was done for eight SEMC: Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Syria and Tunisia.

Based on this comparison, all of the analyzed portals provided users with online services and online databases, 50 % of them offered online publications, and only three portals offered user payment options. Five e-government portals gave the user the option of either registering an email account or submitting their personal e-mail to receive periodic updates from the government. Furthermore, only two out of the eight analyzed e-government portals provides mobile messaging services. Meanwhile, five portals were present on social networks such as Facebook and Twitter. Overall, Morocco and Tunisia had the most advanced e-government websites.

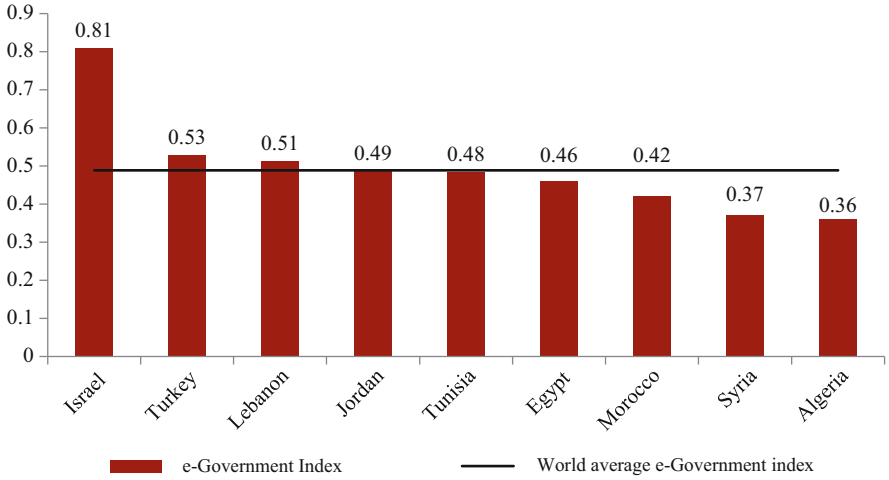

Fig. 10.5 Global e-government development index, 2012 (From UN e-Government For The People)

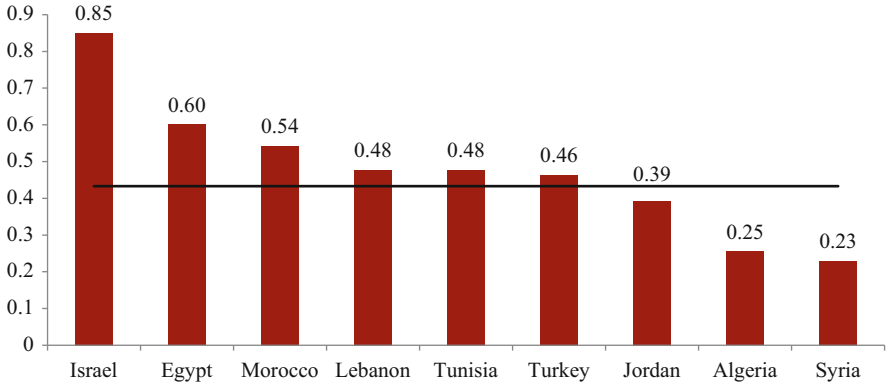

Fig. 10.6 Web measure index, 2012 (From www2.unpan.org)

10.3.3 Web Measure Index

The WMI illustrates the development of a country's e-services which encompass e-commerce and e-government. The e-government index depends on three indices, which are the WMI, TII and Human Capital index. The WMI measures how developed a country is in terms of e-services. When a country progresses on the telecom and internet fronts, it is ranked higher in the ranking.

According to Fig. 10.6, Israel, Egypt, Morocco, Lebanon, Tunisia and Turkey score above the global average, while Jordan, Algeria, and Syria fall below this average.

According to the AAG online surveys, 49.2 % of internet users in Egypt and 52.8 % in Jordan declared that they used e-government services. However, the use of some e-government services by internet users does not necessarily mean that the country has an advanced e-government system.

10.4 E-commerce

We define electronic commerce, commonly known as e-commerce or e-business, as the process of buying and selling products or services through electronic systems such as the internet and other computer networks.

E-commerce is also witnessing an expansion, as evidenced by the increasing number of e-commerce portals in Arab countries. The availability of alternative payment options such as prepaid cards and phone payments motivate a population that is less willing to use credit cards to shop online.

Figure 10.7 shows that the UAE and Egypt house the largest share of the analyzed e-commerce portals that target the Arab world, i.e. e-commerce portals that are focused on the Arab consumers (AAG 2012a).

According to the AAG survey conducted in 2012, 17 % of Jordanian respondents and 15 % of Egyptian ones used e-commerce services. Despite their rapid increase, e-commerce services in the Arab region still lag behind the rest of the world.

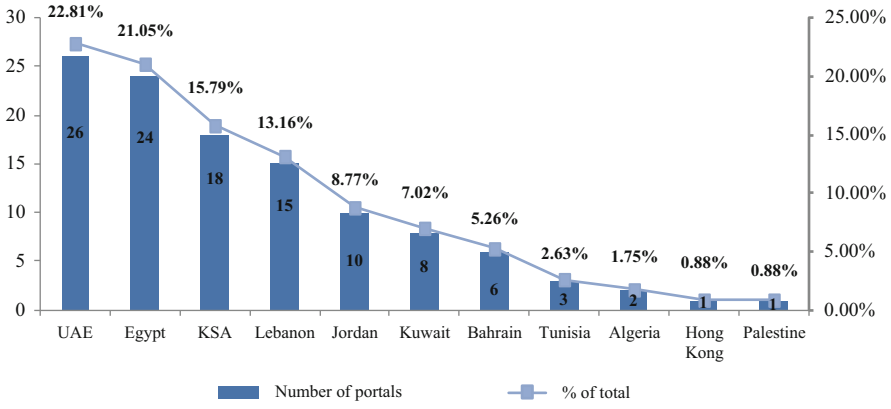

Fig. 10.7 E-commerce portals targeting the Arab World; locations of headquarters, August 2012 (From AAG 2012a) (Note: Percentages are calculated from 114 analyzed e-commerce portals)

10.5 Prices and Relative Pricing Status

The AAG (2012b) calculated the 'relative pricing status' (high cost, fair, low cost) for the individual SEMC. It depends on whether the regional status of a country's GDP per capita matches that of the regional status of the average minute rate. For example, a country with an above-average GDP per capita and above-average minute rate would represent a fair relative pricing status.

This analysis of post-paid and prepaid tariffs in Arab countries revealed that Morocco had the highest cellular rates while Egypt had the lowest across both subscription types. As Tables 10.4 and 10.5 reveal, the differences in pricing are quite high between the countries and have more to do with the competitive situation in each country than the income level of its citizens.

However, it must be noted that we are comparing the published rates and are not accounting for the promotions, offers of unlimited calls to specific numbers, seasonable offers, on-net traffic as opposed to off-net traffic rates, etc. While the ARPM rates would more accurately reflect relative prices in each country, they

Table 10.4 Postpaid average minute rates, July 2012 (From AAG 2012b)

Country	Postpaid average peak and off-peak minute rate (USD)	Regional status	GDP per capita (USD)	Regional status	Relative pricing status
Morocco	0.17	Above average	2,838	Below average	High cost
Palestine[a]	0.14	Above average	1,421	Below average	High cost
Palestine[b]	0.11	Above average	1,421	Below average	High cost
Lebanon	0.1	Above average	8,757	Below average	High cost
Tunisia	0.11	Above average	4,189	Below average	High cost
Jordan	0.08	Below average	4,334	Below average	Fair
Algeria	0.09	Below average	4,415	Below average	Fair
Syria	0.09	Below average	2,867	Below average	Fair
Egypt	0.04	Below average	1,938	Below average	Fair
Average	0.10		4,105		
Median	0.1		3,601		
Minimum	0.04		1,421		
Maximum	0.17		8,757		

Notes (a) The rates include the off-net minute rates of Jawwal and Wataniya with the Israeli operators; (b) The rates do not include the off-net minute rates of Jawwal and Wataniya with the Israeli operators

Table 10.5 Prepaid average minute rates, July 2012 (From AAG 2012b)

Country	Prepaid average peak and off-peak minute rate (USD)	Regional status	GDP per capita (USD)	Regional status	Relative pricing status
Morocco	0.4	Above average	2,838	Below average	High cost
Lebanon	0.31	Above average	8,757	Below average	High cost
Palestine[a]	0.17	Above average	1,421	Below average	High cost
Tunisia	0.12	Below average	4,189	Below average	Fair
Libya	0.04	Below average	12,285	Below average	Fair
Palestine[b]	0.14	Above average	1,421	Below average	High cost
Algeria	0.1	Below average	4,415	Below average	Fair
Syria	0.12	Below average	2,867	Below average	Fair
Jordan	0.06	Below average	4,334	Below average	Fair
Egypt	0.03	Below average	1,938	Below average	Fair
Average	0.149		4,447		
Median	0.12		3,528		
Minimum	0.03		1,421		
Maximum	0.4		12,285		

Notes: (a) The rates include the off-net rates of Jawwal and Wataniya with the Israeli operators; (b) The rates do not include the off-net rates of Jawwal and Wataniya with the Israeli operators

were not available. Not all operators are ready to share them and they change frequently as a result of seasonal promotions and offers. However, it must be noted that the ARPM in virtually all countries would be lower than the simple average rates.

As for the internet market, the AAG (2012c) compared residential rates for the ADSL 1,024 Kbps download speeds (the most common speed offered in the Arab region) towards the end of 2012. The total annual cost of using the broadband services (the column 2 of Table 10.6) was divided by GDP per capita (column 1), obtaining a measure of relative cost (cost of broadband as a % of GDP per capita). Total annual cost was calculated by adding the connection fees and yearly subscription fees. It was assumed that the connection fees were amortized over the first year of subscription.

A high ratio in Table 10.6 indicates that the broadband cost is high relative to GDP per capita, making its unaffordable for large sections of the population. The lower the ratio, the more affordable the service is.

Table 10.6 Total annual costs of 1,024 Kbps ADSL as a % of GDP per capita, September 2012 (From AAG 2012c)

Country	GDP per capita 2012	Total annual cost (USD)	Annual cost as a % of GDP per capita
Algeria	4,415.00	316	7.2 %
Egypt	1,943.00	243	12.5 %
Jordan	4,499.00	370	8.2 %
Lebanon	8,757.00	373	4.3 %
Morocco	3,130.00	146	4.7 %
Palestine	1,415.00	435	30.7 %
Syria	2,867.00	684	23.9 %
Tunisia	4,177.00	202	4.8 %
Average	3,900	346	12.0 %
Median	3,654	343	7.7 %
Minimum	8,757	146	4.3 %
Maximum	1,415	684	30.7 %

Among the analyzed countries, the total annual cost of residential ADSL services ranged from USD 146 per year in Morocco (4.7 % of GDP per capita) to USD 435 per year in Palestine (31 % of GDP per capita). Thus Palestine had the most expensive services relative to GDP (30.7 %), followed by Syria (23.9 %), Egypt (12.5 %), Jordan (8.2 %), Algeria (7.2 %), Tunisia (4.8 %), Morocco (4.7 %) and Lebanon (4.3 %).

10.6 Perspectives of ICT Services in the SEMC

Economists have done extensive research on the effects of a well-developed telecom and broadband infrastructure on social and economic wellbeing. An increase in ICT services penetration levels leads to enhanced economic growth and poverty alleviation.

For example, Qiang (2009) and Qiang and Rossotto (2009) studied the impact of telecommunications penetration on economic growth rates at the country level. According to their analysis of 120 countries, for every 10 percentage point increase in the penetration of mobile phones, there is an increase in economic growth of 0.81 percentage points in developing countries versus 0.60 percentage points in developed countries. This was confirmed by a study by Lee et al. (2009). Badran (2011) conducted a similar study in the context of the Arab world and her results also showed positive GDP growth effects correlated with enhanced penetration levels of telecom services.

Examples of the beneficial impact of mobile phone penetration are numerous. For instance, a cellular line in the hands of farmers or fishermen helps them follow

market prices which allows them to sell their products for the best possible price rather than be locked into what the middlemen in their villages can offer. Similarly, a reliable internet connection would allow a translator to expand his potential client base to the whole world rather than his immediate neighborhood.

The studies also found that ICT promotes growth more effectively in developing countries than in developed ones. This is because telecommunication services help improve market functioning, reduce transaction costs, and increase productivity through better management in both the public and private sectors. Additionally, reliable broadband connectivity is a major prerequisite for export-oriented service industries such as call centers, outsourcing and financial services.

Broadband is considered a general purpose technology, which is a prerequisite for many vital services, and is a necessary condition for innovation and growth worldwide. For example, Badran (2011) refers to the opinions of many economists and policymakers who argue that broadband access can help in the move towards a knowledge based economy.

The telecom sector itself is a major job creator. Telecom operators generate jobs both directly and indirectly through their large retail networks. In addition, the sector is a major taxpayer, in terms of income taxes, revenue sharing and indirect taxes. It has also proven to be able to generate major FDI flows.

The telecom sector, including broadband, facilitates the development of other sectors. It allows for efficient communication which is essential for businesses. Reliable connectivity is a prerequisite for strong and viable financial, manufacturing and service-based businesses. Moreover, it has contributed to the creation of a new system of broadband-dependent businesses that includes major success stories such as the Google, Skype, eBay, Amazon, Facebook and Twitter.

The importance of social networks in terms of enhancing transparency and social mobilization was clearly demonstrated during the Arab Spring in 2011, especially when access to the government-controlled media was restricted.

To sum up, ICT development has an impact on job creation and enhancing aggregate demand and, possibly, on better governance. Competition is not only vital for the growth of the telecom sector, but it is also important for the development of the whole economy. Competition in the telecom industry induces innovation, reduces costs and prices, and improves the quality of its services in the long run.

In the ICT sector, individual countries represent various degrees of market sophistication. We define a sophisticated ICT market as one that is competitive and offers liberalized telecom services with multiple large operators (at least three or four) without the dominance of one operator in any segment and with effective participation of the private sector. Such a market should have vast international connectivity through multiple routes and technologies, for example, terrestrial FO, terrestrial microwave, submarine FO, satellites, etc. It should operate under a well-structured and effective regulator that ensures high competitiveness and service standards. With a favorable investment climate (including low inflation), it would attract the necessary financing at competitive costs.

On the other hand, sustained economic growth and the fair distribution of its results among various population groups (with a reduction in poverty and unemployment) can underpin the further development of the ICT sector.

Multiple factors affect the level of ICT sophistication. They include the country's legal structures and a degree of respect for the rule of law. A consistent law enforcement and a fair, independent and efficient judiciary contribute to enhancing business confidence in a given country and encourage foreign and local investments. Unfortunately, the SEMC vary significantly in terms of judiciary independence and rule of law.

A favorable political context is also a prerequisite for a sophisticated ICT sector. Such an ideal context means a fully democratic system of government with a free press and periodical elections that are free and fair and lead to a rotation of governments. Such a context can enhance the regulatory framework and demand for advanced ICT services, and encourage investments leading to a virtuous cycle that will benefit a sophisticated and expanding ICT sector. On the contrary, political strife and unrest can make the ICT sector one of its early victims.

In 2011, Israel and Turkey led in the sophistication of ICT markets among the SEMC. The countries' ICT market sophistication coincided with a favorable business climate as measured by the WB DB rankings (see Chap. 5).

Jordan, Morocco, Egypt and Tunisia follow Israel and Turkey when it comes to ICT market sophistication. They have been pioneers in ICT market liberalization among Arab countries. Algeria and Palestine are next in terms of sophistication of their ICT markets, followed by a distant Syria and Lebanon. The Libyan ICT market remains the least sophisticated and is still subject to central governmental planning.

The region evidently lags in the development of broadband markets. For example, Syria continues to lag in terms of broadband penetration despite increasing demand for such services as demonstrated by the popularity of dialup internet.

10.7 Concluding Remarks and the Role of the EU

The SEMC have lagged behind other regions in terms of market liberalization of their telecom sectors. And the MENA has been ranked as the most restrictive region in trade of fixed telecom services among a group of Asian and transition economies according to World Bank (2011). Yet this can change fairly rapidly as more countries adopt liberalization policies and good governance that can attract FDI and expand their markets. Being a laggard may actually bring some benefits, as countries adopt best practices and learn from the pitfalls of earlier liberalizers.

As the southern neighbors of the EU, the SEMC can benefit from Europe's interest and support to the region. Good governance, growth, and stability may contribute to the prosperity of both the SEMC and Europe. The EU can play a positive role by supporting institutional reforms and encouraging trade and investments with the SEMC which, in turn, can improve the investment climate in the

region. As discussed in Chap. 2, much can be gained from moving from the 'shallow', tariff-reducing approach to trade liberalization to a 'deep' integration that aims at reducing regulatory and institutional barriers.

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Part III
Financial Development

Chapter 11
Determinants of Financial Development Across the Mediterranean

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11.1 Literature Review

A well-developed financial system is instrumental in attaining sustainable and balanced growth. It increases the availability of funding by mobilizing idle savings, facilitating transactions, and attracting foreign investments. Such markets can achieve an improved allocation of financial resources and enhanced risk management, transparency, and corporate governance practices. Moreover, developed financial systems can ease the availability of some credit to more opaque businesses, such as first-time or low-income (and low-collateral) borrowers or SME. In short, FD can serve to improve not only the growth prospects but also the distribution of economic opportunities.

The economics literature has identified a number of determinants that contribute to a more developed financial system. Among these determinants, the institutional and regulatory preconditions are perhaps the most studied factors underlying a well-functioning financial system. Starting with the seminal contribution of La Porta et al. (1997), many studies have found that FD is stronger when institutions that protect and match the needs of investors are present (see Demirguc-Kunt and Levine 2008 for a literature review).

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A related stream of literature highlights that, as important as they may be, current institutions are determined by less adaptable forces, such as natural and geographical endowments, which may shape the way that the initial institutions were founded (Acemoglu et al. 2001, 2002). Going along with such an explanation, Beck et al. (2003) find that environments less hospitable for European settlers have produced more 'extractive' institutions, as opposed to those that that would promote self-sufficiency and a wider availability of financial resources.

The empirical evidence shows that reinforcing the rights of creditors and contract enforcement tends to deepen financial markets (Levine et al. 2000; Demirguc-Kunt et al. 2004; Law and Azman-Saini 2008). The availability of information on borrowers also improves the availability of credit and enhances the efficiency of financial institutions, especially in less developed systems (Barth et al. 2004; Demirgüç-Kunt et al. 2004; Detragiache et al. 2005; Djankov et al. 2007).

Certain regulatory arrangements could also be detrimental to the development and the performance of financial markets. Most notably, Barth et al. (2000, 2004) provide evidence showing that regulations that restrict the activities of banks could be more prone to banking crises and may hinder market deepening. Similarly, Cull et al. (2005) find that excessively generous deposit guarantee systems tend to undermine FD and stability, especially in countries with inadequately developed legal and regulatory systems.

Lastly, institutional quality, in particular, the extent to which institutional checks and balances exist, are also found to be crucial in determining the success of financial reforms and mitigating the likelihood of crises (Barth et al. 2004; Acemoglu and Johnson 2005; Demetriades and Andrianova 2005; Tressel and Detragiache 2008).

While institutions are at the top of the list of the most often cited determinants of FD, an emerging strand of literature argues that political pressure by interest groups may also have an impact, possibly by shaping the institutions and regulatory framework. According to Pagano and Volpin (2001), countries with closed and static political regimes tend to resist the availability of external financing, since the ensuing competition would threaten the entrenched powers of the political elite. Rajan and Zingales (2003) illustrate that these pressures may weaken as economies open up to international trade and finance, resulting in the subsequent development of financial systems. Using a firm-level dataset of a large number of Pakistani firms, Khwaja and Mian (2005) confirm that despite higher default rates, politically-connected firms receive more funds.

Perotti and Volpin (2004) provide evidence that greater political accountability is associated with higher entry in sectors that are more dependent on external financing. Similarly, Perotti and von Thadden (2006) show that the political actors in countries weakened by a high rate of inflation tend to support more 'corporatist' financial systems, i.e. with limited minority shareholder rights and less developed capital markets. Based on a similar reasoning, Perotti and Schwienbacher (2009) provide evidence that countries that have experienced wealth distribution shocks were less likely to develop private pension schemes.

Political instability and civil unrest may also curtail FD. Mauro (1995) uses a cross-country sample to show that corruption has a significant and robust impact in

lowering investment. Detragiache et al. (2005) find that both political instability and corruption may have a detrimental effect on FD among their sample of low-income countries. Political stability was also found by Aggarwal and Goodell (2009) to be an important factor for a preference for market financing, as opposed to bank-based financing. More recently, Roe and Siegel (2011) showed that political stability has a robust positive impact on FD; when inequality, the main driver of political instability, is rampant, investor-protection institutions are less effective.

Public ownership in the banking sector can also have an impact on FD. On the one hand, Gerschenkron (1962) suggests that the government can help kick-start lending in under-developed systems by fostering the development of necessary institutions, such as laws, contracts and courts, and by subsidizing private banks or taking part in the risk through credit guarantees. On the other hand, Shleifer and Vishny (1994) and Shleifer (1998) argue that governments do not have the necessary incentives or the resources to ensure efficient investments, often supporting politically attractive projects. Several studies confirm the latter view, suggesting that state-owned banks tend to have an inefficient allocation of credit, creating significant systemic risks and generating potential for political capture and corruption (La Porta et al. 2002; Barth et al. 2004). In particular, Dinc (2005) provides convincing evidence on the use of public banks as a political tool by showing that credit to the private sector tends to increase during election years. There is some indication, however, that the results depend on the sample of countries analyzed. In particular, Detragiache et al. (2005) show that state-owned banks tend to have higher efficiencies and are better at mobilizing deposits in developing countries.

Turning to macroeconomic factors, a well-functioning financial system requires an environment of economic stability and certainty. In theory, higher inflation reduces real returns and, in doing so, it reduces likely lenders and increases likely borrowers, effectively exacerbating market imperfections (Huybens and Smith 1999). Indeed, countries with endemic inflation problems have experienced significantly lower levels of banking and stock market development, especially at low-to-moderate levels of inflation (Boyd et al. 2001). Many other studies have substantiated these results by including inflation as an explanatory variable. Demirguc-Kunt and Detragiache (2005) have also shown that a high inflation environment is more prone to banking crises.

Fiscal policy is also of paramount importance for the development of the financial sector. Aside from the potential for inflation, heavily indebted governments may engage in financial repression to use the financial sector as an 'easy' source of funding (Bencivenga and Smith 1992; Roubini and Sala-i-Martin 1992, 1995). There is considerable evidence that excessive public debt may crowd-out private investment, especially in emerging economies with less developed financial systems (Caballero and Krishnamurthy 2004; Christensen 2005). In addition to financial crowding-out, the safe returns from a large public debt may make banks become too complacent and undermine their efficiencies. Hauner (2008, 2009) confirms the so-called 'lazy-bank' view, which argues that financial systems become less efficient in countries that run high fiscal deficits.

FD can also be determined by a country's openness to financial inflows. Most developing countries have inadequate domestic savings, making foreign funding an

important source of growth. Well-developed financial systems are more effective in turning external capital flows into growth-generating activity (Bailliu 2000; Hermes and Lensink 2003).

A downside of larger foreign capital flows is the increased risk of capital and current account crises. Although Eichengreen and Hausmann (1999) find some evidence to the contrary, Domac and Martinez Peria (2003) show that the likelihood of a banking crisis is greater in developing countries with flexible exchange regimes. FD is a key factor in ensuring that external shocks do not reverberate within the domestic economy by triggering a financial crisis. Using a sample of 11 MENA countries, Ben Naceur et al. (2008) show that having policies in place that prioritize the efficient allocation of domestic resources, such as achieving a well-developed stock market, could be beneficial before liberalizing the financial systems. In explaining why capital account liberalization does not seem to have a clear growth-augmenting role in most developing countries, Prasad and Rajan (2008) suggest that the subpar development of institutions may be to blame. Similarly, Chinn and Ito (2006) show that financial opening can only be beneficial when appropriate legal systems and institutions are in place.

Perhaps a more important flow into developing countries is that of remittances and official aid from other countries. In the SEMC, remittances accounted for 23 % of GDP in Jordan, 24 % of GDP in Lebanon, and for approximately 9 % of the region's total GDP in 2007 (World Bank 2008).

There is a rich and growing literature on the impact of remittances on growth, poverty, human capital development and investment (Cox-Edwards and Ureta 2003; Adams and Page 2005; Acosta et al. 2007; Woodruff and Zenteno 2007; Freund and Spatafora 2008; Mundaca 2009). For the MENA region, Amoroso et al. (2004) highlight the need for policies that route remittance flows to aid local development. They recommend establishing strategic partnerships between the banking systems in both receiving and sending countries. Giuliano and Ruiz-Arranz (2009) find that remittances serve as a good substitute for financing investments in underdeveloped financial systems, but the authors stop short of assessing their impact on banking and stock market development.

In theory, to the extent that they are stored in deposit accounts, remittances may expand access to finance and provide unbanked recipients information about other banking products. Billmeier and Massa (2009) show that remittances contribute significantly to stock market development, especially in countries without a sizeable natural-resource endowment. Aggarwal et al. (2011) provide strong evidence that remittances improve bank deposits and, to a slightly lesser extent, credit to the private sector, after accounting for a variety of sources for endogeneity and reverse-causality.

Lastly, trade flows can also have an impact on FD. As noted above, an open economy may weaken the incentives and the political power of interest groups to resist financial deepening (Rajan and Zingales 2003; Braun and Raddatz 2008). Alternatively, increasing exporting opportunities may serve to boost the demand for external funding. The present evidence shows that such a relation is particularly strong in countries with predominantly high-tech manufacturing activities (Do and Levchenko 2004, 2007). At the same time, the opposite seems to hold for less

developed economies, where industries that are dependent on external financing are less predominant (Kim et al. 2011).

11.2 Econometric Analysis

11.2.1 Empirical Specification

We examine the impact of a variety of macroeconomic, democratic, legal and other institutional variables on FD in the SEMC. The econometric model, which follows Chinn and Ito (2006) and Hauner (2009), is specified as follows:

$$\frac{FD_{i,t}}{FD_{i,t-s}} - 1 = \alpha_0 + \gamma FD_{i,t-s} + \beta' X_{i,t-s} + \varepsilon_{i,t}, \tag{11.1}$$

where X is a vector of control variables and s is the number of lag years. To avoid problems of endogeneity and remove the impact of short-term cyclicality, the model is specified as a growth rate over level regressions with non-overlapping periods, each comprised of $s + 1$ years. Equation 11.1 then identifies the growth of the level of FD as a function of the initial level of FD and other time-variant explanatory variables. The specification uses 5-year non-overlapping periods for bank-related FD variables while 3-year non-overlapping periods are used for stock market indicators due to the unavailability of time series data for most countries in the sample.

The estimations are based on random-effect panel regressions, using alternating time dummies. Hausman tests on the orthogonality of the fixed error terms with the covariates were also run to ensure the appropriateness of the random-effects specification (as opposed to a fixed-effect specification).

11.2.2 Data

The measures of FD are extracted from the dataset of Beck et al. (2009). For banking development measures, the dataset includes most SEMC (except Lebanon, Libya and Palestine) and seven EU–MED countries for the years 1985–2009. For the measures on capital market development, the dataset covers all of the EU–MED countries and SEMC (except Algeria and Syria) for the years 1989–2009 (see Table 11.1). The data on financial services relies, to a large extent, on the FSDB of Beck et al. (2009). However, adjustments were made to ensure its consistency.[1]

[1] In Algeria, the pre-1993 figures on credit to the private sector were eliminated due to a misclassification of loans to public enterprises as private sector loans in the FSDB.

Table 11.1 Sources of statistical data

Variable	Source	N	Mean	St. Dev.	Min	Max
Credit to private sector (% GDP)	Beck et al. (2009)	633	51.73	36.58	3.57	224.20
Bank deposits (% GDP)	Beck et al. (2009)	655	57.57	32.21	5.56	228.53
Stock market cap. (% GDP)	Beck et al. (2009)	327	40.20	39.80	0.29	242.02
Stock market turnover (% GDP)	Beck et al. (2009)	330	26.12	46.10	0.00	372.27
Log real GDP per capita (USD)	WDI	743	8.25	1.10	6.07	10.07
Total trade (% GDP)	WDI	866	54.42	39.48	0.00	194.76
Financial openness index	Chinn and Ito (2008)	640	−0.18	1.54	−1.84	2.48
Inflation (% growth in deflator)	WDI	726	11.56	24.05	−9.42	390.68
Growth of government debt (%)	Jaimovich and Panizza (2010)	430	3.03	12.35	−72.87	141.38
Legal and democratic quality index	PRS	415	24.98	13.49	1.11	54.76
Financial reform index	Abiad et al. (2008)	396	10.01	6.33	0.00	21.00
Net FDI (% GDP)	IFS	675	1.33	3.37	−10.09	28.96
Net portfolio investments (% GDP)	IFS	672	−0.21	5.62	−73.55	18.88
Official aid and grants (% GDP)	IFS	557	1.35	2.94	−3.26	20.20
Remittances (% GDP)	IFS	557	2.76	6.60	−52.51	29.92
Other net investments (% GDP)	IFS	641	2.25	7.04	−39.85	89.22

11.2.3 Measures of Financial Development

We use six measures of FD. The amount of *bank credit to the private sector* (as a % of GDP) represents the general level of development in the banking sector. The share of *bank deposits* (as a % of GDP) provides the extent of access and deposit mobilization the financial system offers. The *technical growth rate* is measured as the average distance between national frontiers and the meta-frontier. *Meta-efficiency* is the distance of a bank from the meta-frontier, which is defined by the product of country cost efficiency and technical growth rate. *Stock market capitalization* (as a % of GDP) is included to provide an estimate of the size of the equity market while *stock market total value traded* (as a % of GDP) is used as a measure of the extent of activities in the domestic equity markets.

11.2.4 Independent Variables

A number of explanatory variables were used as determinants of FD. A *lagged FD* variable was included in each regression. *GDP per capita* (in constant USD) was used to control for wealth effects. Several studies highlight that per-capita income could serve as a good proxy for the general development and sophistication of institutions (La Porta et al. 1997, 1998; Beck et al. 2003; Djankov et al. 2007). *Inflation*, measured as the annual growth of the GDP deflator, is included because inflation is found to be an important determinant of banking sector development and equity market activity (Boyd et al. 2001).

The availability of currency-linked financial products could sweep and possibly reverse some of these negative effects of inflation. To control for the potential offsetting impact of a liberalized economy, an index of *financial openness* as well as an *interactive term* between inflation and financial openness were introduced. The financial openness index, developed by Chinn and Ito (2002, 2008), measures the extent of capital controls based on information from the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*.

Fiscal balances could also be an important factor of FD (see Sect. 11.1). The *growth in government debt* (as a share of GDP) was used to assess the impact of fiscal pressures on FD. The data come from a database constructed by Jaimovich and Panizza (2010), which gathers information on central government debt from a number of alternative sources, including, most notably, the IMF IFS, the WB WDI, official websites and other publications.

To assess the impact of legal institutions and democratic governance on the development of financial systems, a composite index on *legal quality and democratic accountability* was constructed, using four indicators from the ICRG, published by the PRS Group (see https://www.prsgroup.com/about-us/our-two-methodologies). First, an index for the quality of legal institutions was built, equaling the first principal components of bureaucratic quality, control of corruption, and law and order. The resulting index was then multiplied by the ICRG index on democratic accountability. The multiplication implies that the resulting index treats both legal quality and democratic accountability as complements.

The supervisory reform index, based on Abiad et al. (2008), provides a measure of the extent to which the banking sector is regulated. The index measures whether (i) the country has adopted risk-based capital measures as foreseen under the Basel I capital accord; (ii) the supervisory agency is independent from executives' influence; (iii) there are exemptions provided to specific institutions (i.e. public banks); and (iv) the on- and off-site examinations are adequately and effectively conducted. A greater value implies a more regulated market. Since the capital market could be impacted by a broader set of reform initiatives and because of a lack of variation in the capital market index (also based on Abiad et al. 2008), for the stock market development variables, the broader *financial reform index* was used.

An interactive term on the last two variables was also included to control for the potential for complementarities.

Lastly, capital flow variables, controlling for net FDI, net portfolio investment, official aid and grants, remittances and other net flows, were included one by one. All of these were obtained from the IMF IFS database.

11.3 Results

The results of the estimations are reported in Tables 11.2, 11.3, 11.4, 11.5, and 11.6. In each table, the first six columns provide the results with period dummies, while the latter six provide the results without period dummies. Following the base regressions in columns I and VII, capital inflow variables are added sequentially. Hausman specification tests confirm the validity of the random-effect specifications in most of the cases.

For banking development variables, inflation seems to have a negative impact, although the results appear more significant for bank deposits. Having an open capital account appears to offset these inflationary effects, also significantly so for bank deposits. These results show that, notwithstanding their effects on macroeconomic stability, the availability of currency-linked savings products could prevent losses in deposits when inflationary pressures are present.

The most significant and persistent determinant of private capital seems to be the growth of public debt, implying a clear confirmation of the 'crowding-out' hypothesis. Indeed, increasing public debt by one percentage point of GDP reduces private credit by a third of percentage points of GDP. This could be one of the main reasons why private credit is underdeveloped in Egypt and Lebanon. Some of the EU–MED, such as Greece, may also be impacted by this factor.

Strong legal institutions, good democratic governance, and adequate implementation of financial reforms have a substantial positive impact on both private credit and deposits, but only when they occur at the same time. Indeed, the interactive term *Interaction (Legal/dem. x Reform)* has a positive and significant coefficient in all cases but one (except for column XII in Table 11.3) In turn, partial implementation of strong democratic and legal institutions or supervisory reforms may undermine deposits, which can be seen in the coefficient estimates for the non-interactive terms.

External flows, in the form of official aid and portfolio investments, may also be beneficial for credit growth and deposits. This is most likely due to an income effect, whereby capital inflows increase households' incomes and firms' earnings, which are then deposited into bank accounts and become available for lending.

For bank efficiency variables (Table 11.4), the results show that greater capital account openness improves banks' technical growth rate and meta-efficiency. In addition, a better legal system and a more democratically-oriented regime should contribute to enhancing the efficiency of banks. Inflation appears to be positively related to bank efficiency, which is surprising because a more stable macroeconomic environment should result in lower cost efficiency. This result could explain how banks strive to strengthen their cost efficiency when inflation is high and

Table 11.2 Determinants of bank credit to the private sector (Authors' estimation)

Variable	I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII
Lag of dependent variable	−0.100*	−0.103*	−0.098*	−0.080	−0.101*	−0.118**	−0.097**	−0.096**	−0.092**	−0.089**	−0.094**	−0.110**
	(0.052)	(0.053)	(0.051)	(0.051)	(0.053)	(0.053)	(0.046)	(0.042)	(0.041)	(0.042)	(0.042)	(0.044)
Log GDP per capita (USD)	0.284	0.075	−0.035	−0.221	0.125	0.197	0.755	0.531	0.253	0.212	0.123	0.429
	(1.333)	(1.433)	(1.319)	(1.301)	(1.639)	(1.325)	(1.446)	(1.208)	(1.145)	(1.176)	(1.421)	(1.161)
Trade openness (total trade/GDP)	0.015	0.018	0.020	−0.059	0.020	0.019	0.036	0.019	0.024	−0.020	0.031	0.023
	(0.033)	(0.034)	(0.032)	(0.047)	(0.043)	(0.033)	(0.042)	(0.033)	(0.031)	(0.045)	(0.040)	(0.032)
Financial openness	−0.975	−0.838	−0.783	−1.277	−0.906	−0.669	−1.772*	−1.113	−0.938	−1.249	−0.932	−0.869
	(1.013)	(1.073)	(0.999)	(0.982)	(1.103)	(1.035)	(0.955)	(0.957)	(0.910)	(0.924)	(0.996)	(0.953)
Inflation (%)	−0.189	−0.186	−0.171	−0.254*	−0.189	−0.169	−0.275**	−0.243*	−0.224*	−0.296**	−0.235*	−0.234*
	(0.140)	(0.142)	(0.138)	(0.138)	(0.142)	(0.140)	(0.126)	(0.132)	(0.128)	(0.136)	(0.133)	(0.131)
Interaction (Infl. × Fin. open.)	0.260	0.252	0.208	0.373	0.258	0.181	0.421	0.357	0.297	0.445	0.332	0.315
	(0.362)	(0.366)	(0.356)	(0.351)	(0.367)	(0.365)	(0.337)	(0.346)	(0.337)	(0.347)	(0.349)	(0.344)
Growth in public debt (% GDP)	−0.334***	−0.335***	−0.336***	−0.347***	−0.336***	−0.350***	−0.442***	−0.400***	−0.404***	−0.430***	−0.398***	−0.410***
	(0.126)	(0.127)	(0.123)	(0.121)	(0.127)	(0.125)	(0.116)	(0.119)	(0.115)	(0.119)	(0.118)	(0.118)
Legal and democratic quality	−0.194	−0.059	0.019	−0.198	−0.150	−0.191	−1.004	−0.801	−0.660	−0.897	−0.683	−0.746
	(1.121)	(1.177)	(1.106)	(1.076)	(1.165)	(1.113)	(0.837)	(0.853)	(0.826)	(0.837)	(0.878)	(0.840)
Supervisory reform	−1.263	−1.324	−1.840	−2.164	−1.305	−1.033	0.300	−0.038	−0.512	−0.093	−0.230	0.015
	(2.015)	(2.041)	(2.004)	(1.980)	(2.055)	(2.009)	(1.683)	(1.808)	(1.773)	(1.775)	(1.845)	(1.787)
Interaction (Legal/dem. × Reform)	0.106**	0.103**	0.105**	0.122***	0.106**	0.098**	0.121**	0.102**	0.100**	0.111**	0.100**	0.097**
	(0.049)	(0.050)	(0.048)	(0.047)	(0.049)	(0.049)	(0.048)	(0.049)	(0.046)	(0.047)	(0.048)	(0.047)

(continued)

Table 11.2 (continued)

Variable	I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII
Net FDI (% GDP)		−0.133						0.010				
		(0.312)						(0.294)				
Net portfolio investment (% GDP)			0.707						0.715*			
			(0.432)						(0.425)			
Official aid and grants (% GDP)				0.754**						0.425		
				(0.361)						(0.337)		
Remittances (% GDP)					−0.053						−0.141	
					(0.311)						(0.288)	
Other net investments (% GDP)						0.302						0.233
						(0.243)						(0.231)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Observations	54	54	54	54	54	54	54	54	54	54	54	54
R2 within	0.49	0.50	0.51	0.52	0.50	0.50	0.50	0.47	0.49	0.48	0.49	0.46
R2 between	0.41	0.41	0.45	0.55	0.39	0.40	0.19	0.27	0.29	0.30	0.24	0.27
R2 overall	0.44	0.44	0.47	0.50	0.44	0.46	0.38	0.39	0.42	0.41	0.39	0.40
Wald-test	30.23	29.78	34.21	37.22	29.51	32.20	34.20	26.30	30.90	28.89	26.69	27.96
… p-value	0.01	0.03	0.02	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.00
Hausman test	13.32	6.79	8.77	12.64	10.29	7.33	4.00	5.69	−3.25	13.08	11.07	1.37
… p-value	0.50	0.96	0.89	0.63	0.80	0.95	0.95	0.89	1.00	0.29	0.44	1.00

Note: *, **, and *** stand for significance at 10 %, 5 % and 1 %, respectively. All estimates are based on RE panel regression, with standard errors in parentheses. Each period is comprised of 5 years. The dataset covers the years 1985–2009. The constant terms and period coefficients were omitted to save space

Table 11.3 Determinants of bank deposits (Authors' estimation)

Variable	I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII
Lag of dependent variable	−0.035	−0.035	−0.036	−0.055	−0.054	−0.035	−0.072*	−0.045	−0.042	−0.049	−0.055	−0.043
	(0.037)	(0.038)	(0.034)	(0.036)	(0.038)	(0.037)	(0.043)	(0.036)	(0.033)	(0.035)	(0.036)	(0.035)
Log GDP per capita (USD)	1.104	1.092	0.812	0.490	1.735*	1.128	1.076	1.004	0.729	0.772	1.435	0.936
	(0.852)	(0.886)	(0.806)	(0.858)	(0.926)	(0.864)	(1.139)	(0.798)	(0.748)	(0.801)	(0.888)	(0.782)
Trade openness (total trade/GDP)	0.018	0.018	0.024	−0.026	−0.005	0.018	0.027	0.017	0.025	0.002	0.003	0.019
	(0.021)	(0.022)	(0.020)	(0.028)	(0.025)	(0.021)	(0.037)	(0.022)	(0.021)	(0.029)	(0.026)	(0.022)
Financial openness	−0.781	−0.775	−0.584	−0.672	−0.972	−0.766	−1.024	−0.673	−0.475	−0.635	−0.806	−0.611
	(0.676)	(0.691)	(0.638)	(0.648)	(0.675)	(0.685)	(0.704)	(0.686)	(0.651)	(0.677)	(0.689)	(0.687)
Inflation (%)	−0.175*	−0.175*	−0.158*	−0.203**	−0.157*	−0.173*	−0.215**	−0.180*	−0.164*	−0.200**	−0.178*	−0.184**
	(0.092)	(0.093)	(0.086)	(0.089)	(0.091)	(0.093)	(0.089)	(0.093)	(0.088)	(0.094)	(0.092)	(0.093)
Interaction (Infl. × Fin. open.)	0.427*	0.427*	0.377*	0.451*	0.392	0.420*	0.481**	0.395	0.342	0.420*	0.393	0.400
	(0.242)	(0.245)	(0.228)	(0.232)	(0.239)	(0.246)	(0.244)	(0.248)	(0.236)	(0.247)	(0.245)	(0.247)
Growth in public debt (% GDP)	−0.067	−0.067	−0.068	−0.071	−0.051	−0.071	−0.147*	−0.122	−0.126*	−0.134*	−0.119	−0.129*
	(0.076)	(0.077)	(0.071)	(0.073)	(0.075)	(0.078)	(0.078)	(0.077)	(0.073)	(0.077)	(0.076)	(0.078)
Legal quality and democ. acct.	−1.810**	−1.804**	−1.592**	−1.484**	−1.881***	−1.833**	−2.114***	−2.055***	−1.910***	−2.037***	−2.155***	−2.035***
	(0.725)	(0.741)	(0.685)	(0.708)	(0.714)	(0.737)	(0.604)	(0.604)	(0.576)	(0.600)	(0.605)	(0.604)
Supervisory reform	−1.686	−1.687	−2.244*	−2.447*	−1.602	−1.617	0.368	0.050	−0.357	0.020	0.265	0.157
	(1.284)	(1.299)	(1.222)	(1.273)	(1.262)	(1.315)	(1.152)	(1.200)	(1.151)	(1.191)	(1.194)	(1.209)
Interaction (Legal/dem. × Reform)	0.063**	0.063**	0.064**	0.081***	0.069**	0.061**	0.067**	0.053*	0.050*	0.056*	0.055*	0.047
	(0.029)	(0.030)	(0.027)	(0.029)	(0.029)	(0.030)	(0.033)	(0.031)	(0.029)	(0.031)	(0.030)	(0.032)
Net FDI (% GDP)		−0.013						0.076				
		(0.202)						(0.208)				
Net portfolio inv. (% GDP)			0.709***						0.666**			
			(0.270)						(0.290)			

(continued)

Table 11.3 (continued)

Variable	I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII
Official aid and grants (% GDP)				0.534**						0.211		
				(0.237)						(0.239)		
Remittances (% GDP)					0.294						0.215	
					(0.185)						(0.193)	
Other net investments (% GDP)						0.045						0.059
						(0.141)						(0.141)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Observations	58	58	58	58	58	58	58	58	58	58	58	58
R2 within	0.52	0.52	0.56	0.55	0.53	0.52	0.41	0.38	0.42	0.37	0.38	0.37
R2 between	0.28	0.28	0.46	0.44	0.38	0.27	0.17	0.25	0.40	0.31	0.30	0.23
R2 overall	0.46	0.46	0.54	0.52	0.49	0.46	0.31	0.33	0.40	0.34	0.35	0.33
Wald-test	36.45	35.61	48.34	44.98	40.29	35.79	28.81	22.83	30.49	23.79	24.48	22.90
. . . p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.01	0.02
Hausman test	14.98	14.75	19.03	12.68	9.76	13.97	2.43	2.72	0.87	8.95	7.52	7.87
. . . p-value	0.38	0.47	0.21	0.63	0.84	0.53	0.99	0.99	1.00	0.63	0.76	0.73

Note: *, **, and *** stand for significance at 10 %, 5 % and 1 %, respectively. All estimates are based on RE panel regression, with standard errors in parentheses. Each period is comprised of 5 years. The dataset covers the years 1985–2009. The constant terms and period coefficients were omitted to save space

Table 11.4 Determinants of bank meta-efficiency and technical growth rate (Authors' estimate)

Variable	Meta-efficiency						Technical growth rate					
	I (RE)	II (FE)	III (RE)	IV (RE)	V (RE)	VI (FE)	I (RE)	II (FE)	III (RE)	IV (RE)	V (RE)	VI (FE)
Lag of dependent variable	−22.022**	−19.875	−20.267*	−26.855***	−21.692**	−16.207	−30.488***	−32.555**	−29.013***	−36.499***	−31.027***	−28.293
	(10.231)	(12.936)	(10.534)	(9.876)	(9.982)	(15.702)	(10.473)	(12.864)	(10.814)	(9.967)	(10.215)	(15.814)
Log GDP per capita (USD)	−0.946	7.194	−0.525	−0.996	−2.516	6.863	−0.907	8.675	−0.527	−0.945	−2.601	8.431
	(1.124)	(15.808)	(1.244)	(1.052)	(1.546)	(16.745)	(1.207)	(17.148)	(1.338)	(1.106)	(1.658)	(18.075)
Trade openness	−0.014	−0.391*	−0.015	0.054	0.042	−0.406	−0.024	−0.409*	−0.025	0.054	0.036	−0.439
	(0.041)	(0.187)	(0.042)	(0.051)	(0.056)	(0.274)	(0.044)	(0.205)	(0.045)	(0.053)	(0.060)	(0.304)
Financial openness	1.317	5.286***	1.194	1.711*	2.069*	5.998**	1.380	5.207***	1.260	1.864*	2.181*	6.087*
	(0.952)	(1.470)	(0.971)	(0.912)	(1.065)	(2.556)	(1.016)	(1.600)	(1.043)	(0.956)	(1.134)	(2.815)
Inflation (%)	0.911*	2.284**	0.889*	0.823*	0.954*	2.210**	0.823	2.467**	0.794	0.732	0.851*	2.404**
	(0.504)	(0.746)	(0.509)	(0.474)	(0.493)	(0.784)	(0.521)	(0.804)	(0.529)	(0.479)	(0.508)	(0.845)
Interaction (Infl. × Fin. open.)	−0.796	−3.625	−0.664	−0.359	−1.116	−3.223	−0.721	−4.538*	−0.578	−0.256	−1.031	−4.117
	(1.146)	(2.087)	(1.166)	(1.095)	(1.140)	(2.187)	(1.177)	(2.231)	(1.210)	(1.099)	(1.167)	(2.325)
Growth in public debt (% GDP)	0.331	0.110	0.396	0.388	0.255	0.164	0.239	−0.042	0.297	0.300	0.146	0.016
	(0.252)	(0.277)	(0.266)	(0.238)	(0.252)	(0.290)	(0.271)	(0.293)	(0.287)	(0.250)	(0.272)	(0.306)
Legal quality and democ. acct.	2.269*	0.636	2.056*	2.526**	2.472**	0.746	2.470*	0.999	2.294*	2.745**	2.737**	1.099
	(1.262)	(1.747)	(1.298)	(1.188)	(1.239)	(1.879)	(1.307)	(1.889)	(1.347)	(1.204)	(1.287)	(2.024)
Supervisory reform	2.551	−3.392	1.956	2.237	2.239	−4.016	2.499	−3.699	1.982	2.111	2.268	−4.428
	(2.496)	(3.119)	(2.619)	(2.341)	(2.444)	(3.445)	(2.605)	(3.383)	(2.740)	(2.394)	(2.544)	(3.731)
Interaction (Leg/dem. × Reform)	−0.082	−0.054	−0.079	−0.086	−0.077	−0.050	−0.083	−0.067	−0.080	−0.087	−0.079	−0.063
	(0.057)	(0.077)	(0.057)	(0.053)	(0.055)	(0.084)	(0.059)	(0.083)	(0.060)	(0.055)	(0.058)	(0.090)
Net FDI (% GDP)		−0.418						−0.450				
		(0.329)						(0.358)				
Net portfolio inv. (% GDP)			−0.246						−0.225			
			(0.300)						(0.323)			
Official aid and grants (% GDP)				−0.619**						−0.734**		
				(0.310)						(0.328)		

(continued)

Table 11.4 (continued)

Variable	Meta-efficiency						Technical growth rate					
	I (RE)	II (FE)	III (RE)	IV (RE)	V (RE)	VI (FE)	I (RE)	II (FE)	III (RE)	IV (RE)	V (RE)	VI (FE)
Remittances (% GDP)					−0.435						−0.470	
					(0.302)						(0.324)	
Other net investments (% GDP)						0.332						0.381
						(0.499)						(0.550)
Constant	7.597	−23.012	5.020	5.824	17.873	−23.250	13.317	−24.800	10.879	11.676	24.616*	−25.423
	(11.391)	(134.985)	(11.906)	(10.697)	(13.205)	(143.769)	(12.339)	(146.622)	(12.974)	(11.331)	(14.331)	(155.288)
Period Dummies	No	No	No	No	No	No	No	No	No	No	No	No
Observations	32	32	32	32	32	32	32	32	32	32	32	32
R2 within	0.538	0.821	0.542	0.583	0.546	0.800	0.590	0.829	0.586	0.645	0.594	0.811
R2 between	0.599	0.0516	0.639	0.803	0.788	0.0971	0.571	0.0361	0.610	0.778	0.764	0.0814
R2 overall	0.543	0.00810	0.557	0.618	0.585	0.00228	0.567	0.0157	0.577	0.654	0.608	0.00589
F-test (p-value)		0.0122				0.0196		0.00977				0.0153
Wald test (p-value)	0.00553		0.00859	0.000654	0.00297		0.00217	0.00540	0.00413	8.65e-05	0.00109	
Hausman test (p-value)	0.427	0.00321	0.186	0.105	0.243	2.58e-08	1	0.00921	1	0.346	0.983	0.000335

Note: *, **, and *** stand for significance at 10 %, 5 %, and 1 %, respectively. All estimates are based on fixed or RE panel regression depending on the Hausman test, with standard errors in parentheses. Each period is comprised of 5 years. The dataset covers the years 1985–2009

Table 11.5 Determinants of stock market capitalization (Authors' estimation)

Variable	I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII
Lag of dependent variable	−0.084	−0.072	−0.082	−0.175	−0.156	−0.138	−0.212	−0.208	−0.213	−0.275*	−0.251*	−0.253*
	(0.152)	(0.149)	(0.153)	(0.152)	(0.159)	(0.152)	(0.147)	(0.147)	(0.149)	(0.147)	(0.150)	(0.146)
Log GDP per capita (USD)	−4.116	−2.667	−3.965	−5.315	−0.724	−4.475	−6.758**	−5.739	−6.810**	−7.943**	−4.575	−7.228**
	(3.558)	(3.614)	(3.638)	(3.484)	(5.267)	(3.498)	(3.412)	(3.562)	(3.463)	(3.396)	(4.595)	(3.364)
Trade openness (total trade/GDP)	−0.106	−0.124	−0.110	−0.179	−0.145	−0.074	−0.083	−0.095	−0.081	−0.145	−0.096	−0.060
	(0.122)	(0.120)	(0.124)	(0.136)	(0.148)	(0.121)	(0.130)	(0.131)	(0.133)	(0.146)	(0.154)	(0.129)
Financial openness	2.153	2.772	2.087	2.394	2.138	2.600	2.767	3.194	2.791	3.112	2.990	3.218
	(2.510)	(2.499)	(2.546)	(2.446)	(2.538)	(2.477)	(2.703)	(2.737)	(2.733)	(2.640)	(2.698)	(2.669)
Inflation (%)	−0.434	−0.311	−0.448	−0.527	−0.504	−0.397	−0.310	−0.226	−0.301	−0.387	−0.349	−0.232
	(0.400)	(0.401)	(0.408)	(0.392)	(0.407)	(0.393)	(0.426)	(0.434)	(0.433)	(0.418)	(0.427)	(0.421)
Interaction (Infl. × Fin. open.)	1.863*	1.625	1.896*	2.069**	2.093**	1.779*	1.574	1.415	1.556	1.738	1.712	1.387
	(1.017)	(1.011)	(1.034)	(0.992)	(1.041)	(0.999)	(1.083)	(1.095)	(1.101)	(1.059)	(1.091)	(1.070)
Growth in public debt (% GDP)	−0.315	−0.447	−0.325	−0.059	−0.325	−0.315	−0.417	−0.518	−0.414	−0.131	−0.365	−0.395
	(0.309)	(0.315)	(0.314)	(0.322)	(0.314)	(0.303)	(0.316)	(0.332)	(0.320)	(0.343)	(0.315)	(0.311)
Legal quality and democ. acct.	−0.657	−0.838	−0.643	−1.120	−1.025	−0.564	−0.386	−0.516	−0.388	−0.912	−0.775	−0.343
	(0.906)	(0.899)	(0.916)	(0.906)	(0.956)	(0.891)	(0.967)	(0.976)	(0.976)	(0.976)	(1.026)	(0.950)
Financial reform	−2.012	−2.446*	−2.055	−2.756**	−2.920**	−2.230*	−1.313	−1.634	−1.307	−2.029	−2.060	−1.485
	(1.327)	(1.333)	(1.350)	(1.327)	(1.458)	(1.309)	(1.267)	(1.307)	(1.279)	(1.284)	(1.327)	(1.249)
Interaction (Legal/dem. × Reform)	1.224	1.566	1.215	1.974*	1.726	1.245	1.176	1.422	1.178	1.948	1.668	1.233
	(1.120)	(1.122)	(1.131)	(1.136)	(1.170)	(1.099)	(1.214)	(1.239)	(1.225)	(1.237)	(1.261)	(1.193)
Net FDI (% GDP)		2.533						1.707				
		(1.562)						(1.711)				
Net portfolio inv. (% GDP)			−0.216						0.120			
			(0.825)						(0.853)			
Official aid and grants (% GDP)				1.744*						1.592		
				(0.949)						(1.012)		

(continued)

Table 11.5 (continued)

Variable	I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII
Remittances (% GDP)					1.043						0.724	
					(1.075)						(1.010)	
Other net investments (% GDP)						−1.105*						−1.169*
						(0.647)						(0.678)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Observations	66	66	66	65	65	66	66	66	66	65	65	66
R2 within	0.48	0.50	0.48	0.51	0.49	0.49	0.32	0.32	0.31	0.35	0.35	0.32
R2 between	0.65	0.69	0.64	0.75	0.69	0.76	0.56	0.59	0.57	0.64	0.57	0.69
R2 overall	0.51	0.53	0.51	0.55	0.53	0.54	0.35	0.36	0.35	0.40	0.37	0.38
Wald-test	51.41	55.72	50.52	58.17	53.13	56.30	29.52	30.51	29.01	34.69	31.59	33.54
… p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hausman test	8.26	8.30	10.56	7.23	10.21	6.14	7.54	7.26	8.77	6.33	9.84	5.75
… p-value	0.91	0.94	0.84	0.97	0.86	0.99	0.67	0.78	0.64	0.85	0.55	0.89

Note: *, **, and *** stand for significance at 10 %, 5 %, and 1 %, respectively. All estimates are based on random-effects (RE) panel regression, with standard errors in parentheses. Periods are comprised of 3 years due to limited number of observations in all regressions. The dataset covers the years 1989–2009. The constant terms and period coefficients were omitted to save space

Table 11.6 Determinants of total value traded in stock market (Authors' estimation)

Variable	I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII
Lag of dependent variable	−0.702	−0.588	−0.731	−0.651	−0.675	−0.561	−0.768*	−0.695	−0.776*	−0.722	−0.709	−0.605
	(0.454)	(0.465)	(0.464)	(0.462)	(0.455)	(0.466)	(0.454)	(0.462)	(0.460)	(0.459)	(0.454)	(0.462)
Log GDP per capita (USD)	−0.470	3.125	0.622	−2.357	15.160	−1.801	−10.368	−6.887	−10.021	−11.200	−2.282	−12.801
	(15.199)	(15.505)	(15.582)	(15.447)	(22.599)	(15.154)	(14.482)	(15.022)	(14.711)	(14.856)	(19.276)	(14.422)
Trade openness (total trade/GDP)	−0.494	−0.539	−0.515	−0.578	−0.826	−0.471	−0.550	−0.593	−0.560	−0.470	−0.673	−0.541
	(0.440)	(0.441)	(0.447)	(0.563)	(0.615)	(0.438)	(0.470)	(0.473)	(0.476)	(0.595)	(0.621)	(0.465)
Financial openness	6.561	8.506	6.246	6.544	4.379	6.781	5.571	7.139	5.504	6.406	5.303	5.888
	(10.006)	(10.134)	(10.124)	(10.194)	(10.428)	(9.952)	(10.660)	(10.823)	(10.759)	(10.746)	(10.825)	(10.549)
Inflation (%)	−1.674	−1.306	−1.756	−1.833	−2.111	−1.653	−1.795	−1.489	−1.838	−1.842	−2.030	−1.630
	(1.684)	(1.712)	(1.711)	(1.729)	(1.743)	(1.675)	(1.765)	(1.801)	(1.793)	(1.794)	(1.796)	(1.750)
Interaction (Infl. × Fin. open.)	5.188	4.406	5.397	5.532	6.431	5.048	5.341	4.731	5.441	5.486	6.033	4.858
	(4.289)	(4.337)	(4.359)	(4.375)	(4.467)	(4.267)	(4.487)	(4.546)	(4.553)	(4.530)	(4.578)	(4.451)
Growth in public debt (% GDP)	0.047	−0.286	−0.034	0.500	0.002	0.162	−0.026	−0.387	−0.045	0.294	0.197	0.127
	(1.343)	(1.373)	(1.370)	(1.471)	(1.371)	(1.338)	(1.335)	(1.397)	(1.350)	(1.500)	(1.339)	(1.325)
Legal quality and democ. acct. index	−8.977**	−9.082**	−9.006**	−9.387**	−10.272**	−8.072*	−6.652	−6.844	−6.681	−7.051	−7.737*	−5.667
	(4.254)	(4.245)	(4.291)	(4.342)	(4.432)	(4.293)	(4.476)	(4.490)	(4.518)	(4.531)	(4.626)	(4.479)
Financial reform	−13.076**	−13.907**	−13.444**	−14.645**	−16.72***	−13.465**	−10.465*	−11.466**	−10.511*	−12.587**	−13.218**	−10.807**
	(5.843)	(5.877)	(5.968)	(6.064)	(6.470)	(5.819)	(5.417)	(5.542)	(5.470)	(5.627)	(5.692)	(5.365)
Interaction (Legal/dem. × Reform)	10.406*	10.843**	10.520*	11.167**	11.879**	9.509*	8.674	9.218	8.722	9.439*	9.978*	7.754
	(5.354)	(5.356)	(5.408)	(5.478)	(5.491)	(5.373)	(5.647)	(5.690)	(5.702)	(5.732)	(5.739)	(5.622)
Net FDI (% GDP)		7.676						6.519				
		(6.907)						(7.293)				
Net portfolio inv. (% GDP)			−1.390						−0.722			
			(3.551)						(3.579)			
Official aid and grants (% GDP)				2.113						0.694		
				(4.123)						(4.308)		
Remittances (% GDP)					4.398						2.729	
					(4.404)						(4.157)	

(continued)

Table 11.6 (continued)

Variable	I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII
Other net investments (% GDP)						−3.506						−4.297
						(2.816)						(2.906)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Observations	66	66	66	65	65	66	66	66	66	65	65	66
R2 within	0.34	0.36	0.35	0.35	0.36	0.36	0.16	0.17	0.16	0.18	0.19	0.19
R2 between	0.86	0.89	0.83	0.86	0.84	0.87	0.84	0.87	0.83	0.81	0.76	0.87
R2 overall	0.40	0.41	0.40	0.41	0.42	0.42	0.23	0.24	0.23	0.25	0.26	0.26
Wald-test	33.12	34.51	32.71	33.15	34.38	35.03	16.61	17.35	16.36	18.00	18.54	19.15
. . . p-value	0.00	0.00	0.01	0.01	0.00	0.00	0.08	0.10	0.13	0.08	0.07	0.06
Hausman test	1.66	1.52	2.16	2.40	4.04	2.09	1.63	1.39	2.49	2.37	6.18	1.24
. . . p-value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	1.00

Note: *, **, and *** stand for significance at 10 %, 5 %, and 1 %, respectively. All estimates are based on RE panel regression, with standard errors in parentheses. Periods are comprised of 3 years due to limited number of observations in all regressions. The dataset covers the years 1989–2009. The constant terms and period coefficients were omitted to save space

investment is low, so as to compensate for lower revenues stemming from fewer opportunities. External flows, however, in the form of foreign aid, tend to deteriorate efficiency in banks, which is related to less stringent conditions on using this type of funding in an efficient way and also because such funding usually transits through public banks, which have more socially-oriented objectives than profitability and efficiency.

For the indicators of stock market development (Table 11.5), the results are more limited. Beyond the positive impact of the interactive term on good institutions, democratic governance, and financial reforms, stock market capitalization appears to be weakly improved by official transfers, once again potentially owing to an income effect. Per-capita incomes appear to have a negative impact (implying 'catching-up' effects as less developed countries develop more quickly than their richer counterparts). Yet these effects are not present when period dummies are present. Conversely, having an open capital account during inflationary periods also inflates market capitalization, possibly because of the rapid arbitrage possibilities facing countries with high inflation and real interest rates.

As for the stock market value traded (Table 11.6), the interactive term on legal and democratic quality and reforms is also significant, highlighting once again the importance of having quality legal institutions, democratic governance, and the adequate implementation of financial reforms. As is the case for deposits, partial financial reforms (i.e. those without high-quality legal institutions or anti-democratic governance practices) could lead to less activity in the stock market.

11.4 Conclusion

We use a sample of EU-MED and SEMC for the years 1985–2009 to assess the reasons why FD is lagging behind in the region.

For banking development variables, inflation has a negative impact, although the results are more significant for bank deposits. Having an open capital account seems to offset these inflationary effects, also significantly so for bank deposits. The growth of public debt is the most significant and persistent determinant of private capital, confirming the 'crowding-out' hypothesis.

Strong legal institutions, good democratic governance and the adequate implementation of financial reforms have a substantial positive impact on both private credit and deposits, but only when they occur at the same time.

External flows, in the form of official aid and portfolio investments, may also be beneficial for credit growth and deposits. This is most likely due to an income effect, whereby capital inflows increase households' incomes and firms' earnings, which are then deposited into bank accounts and become available for lending.

For bank efficiency variables, the results show that more capital account openness improves banks' technical growth rate and meta-efficiency. In addition, a better legal system and more democratically-oriented regime should contribute to enhancing the efficiency of banks. Inflation appears to be positively related to bank

efficiency, which is surprising because a more stable macroeconomic environment should result in lower cost efficiency.

For the indicators of stock market development, the results are more limited. Beyond the positive impact of the interactive term on good institutions, democratic governance, and financial reforms, stock market capitalization can be weakly improved by official transfers, once again potentially stemming from an income effect. Per capita income appears to have negative impact.

As for stock market value traded, the interactive term on legal and democratic quality and reforms is also significant, highlighting once again the importance of having quality legal institutions, democratic governance, and the adequate implementation of financial reforms. As is the case for deposits, partial financial reforms could lead to less activity in the stock market.

In a nutshell, better institutions, lower government expenditures, and financial sector reforms (especially regulation and supervision) could lead to improvements in the functioning of banks and could help develop stock markets in the SEMC.

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Chapter 12
Dynamics of Bank Efficiency in the EU and SEMC: Is There a Convergence?

Barbara Casu and Alessandra Ferrari

12.1 Introduction

It is a long-held belief among economists and policymakers that financial development can foster economic development (Pagano 1993; Levine 2001). Economists differ, however, about the mechanisms by which financial development affects real growth. The emerging consensus in the literature is that, for financial development to be beneficial, certain conditions need to be met, including an adequate and operational regulatory structure, a well-defined supervisory authority, legal systems that reinforce property and creditor rights, restrained control of government over the financial system, and macroeconomic stability (Ayadi et al. 2011). To achieve these objectives, governments of developed and developing countries alike have undertaken reforms aimed at strengthening the resilience of their financial sectors and promoting a better allocation of resources within their economies. This involves removing entry barriers and promoting competition, efficiency, and productivity in the financial industry. Financial integration is thought to bring a number of benefits, which lead to economic growth.

Since the passing of the First Banking Coordination Directive in 1977, EU legislation has been directed towards creating an integrated and competitive European banking system. Monetary union fostered increased integration. There has been increased entry of foreign banks; cross-border mergers and acquisitions; enhanced competition and price convergence in many market segments. As a result of these changes, the emphasis has shifted to efficiency. Regulatory reforms led to the EU enlargement of 2004 and 2007, fostering economic convergence, the

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harmonization of regulations and the consolidation and integration of the banking systems of the new EU members. During the 1990s and early 2000s, CEE transition economies underwent remarkable changes due to financial liberalization programs and large-scale privatizations of their banking sectors, which led to consolidation and entry of foreign banks.

Other developing countries, following IMF- and/or WB-inspired programs, sought to improve the performance and efficiency of their financial sectors. Several of the SEMC have restructured and privatized public banks, implemented prudential regulation and risk management frameworks, and enhanced supervisory responsibilities (Ayadi et al. 2011). In addition, some countries have established a market-based financial sector, reduced state ownership, and allowed greater foreign participation (Ben Naceur et al. 2011). Although these reforms led to private sector credit growth, financial under-development persists in some of the SEMC. The financial sectors of these countries remain dominated by banks and government ownership is prevalent. Poor credit screening and lending practices lead to a high volume of non-performing loans and (in some countries) reduced foreign penetration.

We sought to assess the dynamics of bank efficiency for a large sample of EU countries and the SEMC over the period 1997–2010. We divided the sample according to the geographical location of the country in four regions: (i) Northern Europe (which includes Austria, Belgium, Denmark, Germany, Finland, the UK, Ireland, the Netherlands, and Sweden); (ii) CEE (which includes Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, and Slovakia); (iii) EU-MED (which includes Cyprus, Spain, France, Greece, Italy, Malta, and Portugal) and (iv) the SEMC (which includes Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Syria, and Tunisia). We grouped the countries in two 'macro-areas': (1) Northern Europe and CEE and (2) EU-MED and the SEMC.

In the first part of our analysis, we examined the dynamics of efficiency for the banking industries by estimation of stochastic frontiers. We recognized the heterogeneous nature of bank technology across countries, and conducted the comparative empirical analysis in the context of a meta-frontier framework (Battese et al. 2004; O'Donnell et al. 2008). In the second part, we assessed whether the banking systems in our sample are converging toward the same efficiency and technology by testing for the existence of β and σ convergence.

The remainder of this chapter is structured as follows. Section 12.2 reviews the relevant literature. Section 12.3 explains the models used in the empirical analysis. Section 12.4 presents the dataset and variables. The results of the empirical investigation are discussed in Sect. 12.5, while Sect. 12.6 summarizes and concludes.

12.2 Literature Review

This chapter addresses the impact of financial reforms on bank efficiency and convergence. Only a handful of studies address the relationship between efficiency and convergence.

12.2.1 Bank Efficiency

There is a vast literature on the evaluation of banks' performance and on the measurement of their cost structure and efficiency. A review of the early literature is provided by Berger and Humphrey (1997) while more recent literature is reviewed by Berger (2007) and Hughes and Mester (2010). Efficiency is commonly estimated by parametric methods such as SFA or non-parametric methods, the most popular of which is DEA. Early studies focus on the US and European banking sectors, whereas more recent literature offers cross-country studies as well as a focus on developing countries. The restructuring process undertaken by CEE transition countries received considerable interest (Grigorian and Manole 2006; Weill 2003; Bonin et al. 2005a, b; Fries and Taci 2005; Yildirim and Philippatos 2007; Brissimis et al. 2008).

Despite a comprehensive reform program, the SEMC have received comparatively less attention in the academic literature. Existing studies indicate that banks in the region are cost inefficient (Ben Naceur et al. 2011; Olson and Zoubi 2011).

The early literature assumes banks in different countries use the same production technology, allowing for a common production frontier to estimate and compare efficiency across borders. This assumption of technological homogeneity is strong, and if incorrect, will cause a bias in the estimations. Studies have attempted to overcome this problem by integrating country-specific environmental variables into the efficiency estimation (Bos and Kool 2006). A handful of recent studies highlight the importance of accounting for cross-country heterogeneity (Bos and Schmiedel 2007; Kontolaimou and Tsekouras 2010; Casu et al. 2013).

12.2.2 Convergence

Several studies investigate the existence and implications of financial convergence, in relation to the deregulation process, the creation of the single market for financial services, and the introduction of the euro. Empirical evidence suggests that legislative changes at the EU level, as well as the introduction of the euro in 1999, have contributed towards the integration of European banking and financial markets (Goddard et al. 2007).

Convergence towards best practice technologies by banks in different countries is driven by the level to which barriers to such convergence exist. Despite legislative changes and a variety of integration measures, by the end of the 2000s there were still barriers to the creation of an integrated Single European Market in banking and financial services (Gropp and Kashyap 2009; Casu and Girardone 2010). They included a lack of consumer trust and confidence, local banks' access to private information about borrowers' creditworthiness, and the bundling of financial services. While there is a general view that competition in EU banking has increased in the 2000s, the convergence in bank efficiency and productivity remains questionable. Variations in efficiency exist due to differences in the intensity of competition in specific banking industries, cross-country differences in the nature of the business cycle, and in managerial practices. While a handful of studies directly address relationship between the integration and efficiency (Weill 2009; Mamatzakis et al. 2008), with the exception of Mamatzakis et al (2008), previous analyses focus on the EU.

12.3 Empirical Methodology

12.3.1 Stochastic Frontier Analysis

From an input minimization perspective, an efficiency frontier is defined as the minimum level of input(s) for a given level of output(s). The efficiency of a firm is measured as a radial distance D from the frontier such that $D = 1$ when the firm is fully efficient, and $D > 1$ otherwise.

Since the data for our empirical analysis could not be pooled across countries, we have estimated stochastic cost frontiers at the country level, followed by supranational meta-frontiers estimated using the deterministic technique of linear programming.

The stochastic translog cost frontier with two inputs and two outputs was defined as follows:

$$\begin{aligned} \ln C_{it} = {} & \alpha_0 + \sum_{m=1}^{2} \alpha_m \ln y_{mit} + \sum_{j=1}^{2} \beta_j \ln w_{jit} + \sum_{m=1}^{2}\sum_{q=1}^{2} \alpha_{mj} \ln y_{mit} \ln y_{qit} + \\ & + \sum_{n=1}^{3}\sum_{j=1}^{3} \beta_{nk} \ln w_{nit} \ln w_{jit} + \sum_{j=1}^{3}\sum_{m=1}^{2} \gamma_{jm} \ln w_{jit} \ln y_{mit} + \\ & + \lambda_1 T + \lambda_2 T^2 + \sum_{m=1}^{2} \theta_m T \ln y_{mit} + \sum_{j=1}^{3} \zeta_j T \ln w_{jit} + \sum_{p}^{P} \eta_p E_{it} + v_{it} + u_{it} \end{aligned} \tag{12.1}$$

In Eq. 12.1 C_{it} is the observed total cost of bank i at time t; it is expressed as a function of two outputs y (total loans and other earning assets), the prices of two inputs w (the cost of funding; the cost of labor, capital, and other administrative

costs), time T which enters the equation quadratically and is interacted with the output and input price variables; and a vector E of control variables such as: GDP per capita, GDP growth, banking concentration (the share of the three largest banks in the total assets of commercial banks), the ratio of deposit money bank assets to GDP, the equity to assets ratio, deposits to loans ratio, liquidity ratio, the level of fixed assets, and dummy variables to identify public and foreign banks when possible. Linear homogeneity in inputs prices as required by microeconomic theory is imposed prior to estimation. Eq. 12.1 has a composite error term given by the sum of noise $v_{it} \sim N(0, \sigma^2)$ and inefficiency u_{it}. The distributional assumptions for u_{it} and its modeling as having a variable mean or variance have been based on LR tests if the hypothesis were nested, and on the Akaike criterion otherwise.

The estimation of national frontiers leads to the calculation of cost efficiency values for each bank in each country in each year (EFFit). Since these values come from separate national frontiers they cannot be compared between countries. In order to make cross-country comparisons we have estimated meta-frontiers at the supra-national level. The idea behind a meta-frontier is that an ideal 'best' meta-technology does exist that is available to all the countries in the sample, even if they are not all using it. It allows for the theoretical possibility of technological spill-overs. Its estimation, and the calculation of TGR, allows one to measure how far each country is from this best meta-technology.

The meta-frontier is derived as the envelope of the single-country frontiers by linear programming:

$$C_{it}^{k} = \exp\left(X_{it}\beta^{k}\right)\exp\left(v_{it}^{k} + u_{it}^{k}\right) \tag{12.2}$$

as the k-th country cost frontier, that depends on a matrix of independent variables X and a vector of country-specific parameters β^k. The meta-frontier is defined as the envelope of the k estimations of Eq. 12.2:

$$C_{it}^{*} = f(X_{it}\beta^{*}) = \exp(X_{it}\beta^{*}) \tag{12.3}$$

Equation 12.3 has the same functional form of Eq. 12.2 and a vector of parameters β^* satisfying:

$$X_{it}\beta^{*} \leq X_{it}\beta^{k} \tag{12.4}$$

By its construction the meta-technology will always give the minimum possible cost among all the groups. Equations. 12.3 and 12.4 are estimated by the deterministic technique of linear programming.

The distance of each bank from the meta-frontier is called meta-efficiency (EFF_{it}*) and it is defined as the product of its national cost efficiency (EFF_{it}) and the TGR, that is

$$\text{EFF}_{\text{it}}{}^{*} = \text{TGRxEFF}_{\text{it}} \tag{12.5}$$

The TGR is a measure of the distance between the country frontier and the metafrontier and it is ≤ 1 with higher values indicating closer proximity to the best available technology and vice versa.

12.3.2 Convergence Analysis

We assess whether the banking systems in our sample are converging toward the same efficiency and TGR levels by testing for the existence of β and σ convergence in the short run (i.e. year by year). Testing for β convergence means testing for the speed in the growth of a certain variable, in this case a measure of performance; β convergence means that countries with initially lower performance levels grow faster than countries with higher performance thus catching up (i.e. converging) with the latter. If the steady-state performance levels towards which the countries are moving are the same, we talk of absolute convergence; if they differ, we talk of conditional convergence; σ convergence consists of a reduction in the dispersion in the levels of performance among countries over time. Both β and σ convergence should be able to conclude that convergence exists.

To test for β convergence we estimate the following equation:

$$\ln Z_{i,\,t} - \ln Z_{i,t-1} = \gamma_0 + \lambda \ln Z_{i,t-1} + \gamma_i D_i + \varepsilon_{i,t} \tag{12.6}$$

where $Z_{\text{i,t}}$ is the performance measure under scrutiny: the average efficiency, or meta-efficiency, or TGR level of country i at time t. The Ds are country dummies which we introduce to allow for country-conditional convergence. Absolute β-convergence is found if $\lambda < 0$ and $\gamma_i = 0$, and conditional β convergence is found if $\lambda < 0$ and γ_i is $\neq 0$. To confirm the existence of a process of convergence as opposed to one of mean-reversion, σ-convergence must be present. To test for σ-convergence we follow Lichtenberg (1994) and calculate

$$c = \frac{R^2}{(1+\lambda)^2} \sim F_{NT-k}^{NT-k} \tag{12.7}$$

based on the results of Eq. 12.6, under the null hypothesis of σ-convergence.

Equation 12.6 is estimated with respect to cost efficiency, TGR, and meta-efficiency. As we do with the meta-frontiers, first we look at the four regions separately and then at two larger 'macro-areas' (see Sect. 12.1).

12.4 Data

Our dataset encompasses the period of 1997–2010 during which many structural and regulatory changes were carried out both within the EU and the SEMC. Data were collected from banks' annual balance sheets and income statements via the Bankscope database. The final sample covers 39,407 bank annual observations for commercial banks operating in 33 countries for the period 1997–2010, thus providing a maximum of 14 time-series observations on each bank. All data are in EUR and deflated using the domestic GDP deflator with 2005 as a base year (see Table 12.1).

12.5 Empirical Results

This section presents the results of our empirical analysis of bank efficiency and convergence in the EU and the SEMC. The first part of the efficiency analysis consists of estimating Eqs. 12.1 and 12.2 at the country level,[1] so the efficiency scores reflect the distance from national benchmarks. The second part consists of the findings derived from the estimation of a meta-frontier. We estimate four meta-frontiers, one for each of our four regions. We then group them into two larger 'macro-areas' (see Sect. 12.1).

12.5.1 Efficiency, Meta-Efficiency, and TGR: EU-MED and SEMC

Table 12.2 presents the analysis of single-country efficiency (Column 2), meta-efficiency (Column 3), and TGR (Column 4) for the banking industries of EU-MED (Panel A) and SEMC (Panel B). Efficiency relates to the distance from the single-country frontier, 'meta-efficiency' relates to the distance to the meta-frontier, and TGR measures the distance between the country and meta-frontier.

Looking at the efficiency scores for EU-MED, with the exception of Malta, the results do not show relevant changes during the sample period. Average levels are high and remain stable over time. The analysis of TGR values across countries and time indicates differences in technological levels. In the EU-MED, the meta-technology is dominated by Spanish banks which, on average, display TGR higher than 0.9. Greek banks have lower TGR compared to other banking industries and the gap increases from 2006 onwards. Results suggest the existence of moderate,

[1] The small sample size in some cases made it necessary to group some countries together. This was done for Cyprus and Malta; Algeria and Libya; Syria and Jordan; Latvia and Estonia.

Table 12.1 Descriptive statistics of main variables (From Bankscope; authors' estimations)

Country	TC	Loans	OEA	Int. cost	Non int. cost	Eq/asst	Loans/dept	Liq. ratio	Total assets
Algeria	88.32	623.76	383.39	0.01	0.02	0.09	0.62	20.59	1987.88
Austria	14.75	188.33	113.65	0.03	0.02	0.07	0.69	1.22	327.61
Belgium	66.00	662.77	688.02	1.66	0.01	0.06	0.55	0.45	1572.32
Bulgaria	17.18	111.51	89.41	0.03	0.04	0.13	0.66	9.80	252.64
Cyprus	57.79	484.52	268.89	0.05	0.03	0.06	0.62	5.78	740.64
Czech R.	80.40	723.86	638.41	0.03	0.02	0.07	0.77	2.14	1618.93
Denmark	15.68	171.51	76.45	0.03	0.04	0.13	0.79	1.69	271.11
Egypt	82.69	473.56	488.23	0.06	0.02	0.09	0.57	2.97	1290.30
Estonia	25.29	136.04	112.91	0.03	0.04	0.10	0.83	10.99	265.07
Finland	886.28	11172.17	6288.13	0.03	0.02	0.06	0.92	2.20	23173.70
France	189.58	1964.38	770.94	0.03	0.02	0.07	0.80	1.17	3451.83
Germany	23.15	261.50	150.65	0.03	0.02	0.05	0.69	2.44	446.10
Greece	191.87	1811.23	673.04	0.03	0.02	0.08	0.93	3.87	2816.25
Hungary	82.60	459.54	322.12	0.06	0.04	0.09	0.75	4.62	771.63
Ireland	613.70	7959.72	7787.00	0.03	0.01	0.05	0.80	1.66	19227.00
Israel	234.96	2929.15	823.51	0.04	0.02	0.06	0.84	8.02	4053.77
Italy	94.18	1234.73	467.51	0.03	0.03	0.08	1.02	1.15	1888.00
Jordan	62.66	527.54	466.62	0.04	0.02	0.12	0.64	10.52	1256.54
Latvia	15.91	111.22	113.30	0.02	0.03	0.09	0.55	7.08	277.31
Lebanon	31.22	127.13	210.63	0.06	0.02	0.08	0.34	16.42	476.67
Libya	35.11	593.87	846.04	0.01	0.01	0.05	0.37	5.70	2795.50
Morocco	174.97	2277.61	878.54	0.02	0.02	0.09	0.79	7.90	3915.22
Malta	20.60	291.88	251.55	0.03	0.02	0.08	0.63	5.01	591.13
Netherlands	187.05	1855.93	1387.74	0.05	0.01	0.07	0.71	1.75	3672.45
Poland	92.51	620.75	404.25	0.05	0.04	0.10	0.65	4.58	1282.26

Portugal	169.17	1382.27	875.28	0.04	0.02	0.07	0.78	1.93	3140.10
Spain	204.50	3284.83	1192.53	0.03	0.02	0.07	0.85	2.45	4933.42
Slovakia	86.57	721.00	484.89	0.04	0.03	0.08	0.56	2.61	1282.15
Slovenia	49.21	537.36	287.31	0.04	0.03	0.09	0.75	3.48	921.11
Sweden	5.59	107.69	28.18	0.02	0.02	0.13	0.93	0.85	144.36
Syria	19.62	199.49	224.22	0.02	0.01	0.08	0.53	24.23	615.78
Tunisia	58.62	848.85	189.84	0.04	0.02	0.10	0.92	2.99	1199.16
UK	362.75	2918.48	1822.72	0.04	0.02	0.07	0.68	1.10	6787.39

Note: All variables are in EUR mn and are deflated using 2005 as base year. *TC* total costs, *Loans* total loans, *OEA* other earning assets, *Int. cost* total interest costs, *Non int. cost* total non-interest costs, *Eq/asst* ratio of equity to total assets, *Loans/dept* loans to deposit ratio, *Liq. ratio* liquidity ratio

Table 12.2 Efficiency, meta-efficiency and TGRs (From Bankscope; authors' estimations)

	Efficiency			TGR			Meta-efficiency			No of obs
Country	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Total
Panel A: Average efficiency, TGR and meta-efficiency scores for EU-MED banks										
Cyprus	0.955	0.973	0.985	0.783	0.845	0.877	0.767	0.822	0.856	138
Spain	0.963	0.971	0.976	0.908	0.926	0.938	0.883	0.899	0.917	1,215
France	0.93	0.941	0.952	0.82	0.892	0.926	0.764	0.841	0.877	2,791
Greece	0.965	0.977	0.985	0.633	0.737	0.799	0.618	0.72	0.784	194
Italy	0.939	0.961	0.97	0.845	0.872	0.889	0.815	0.838	0.854	1,821
Malta	0.899	0.959	0.994	0.792	0.829	0.864	0.712	0.795	0.851	44
Portugal	0.973	0.982	0.989	0.789	0.818	0.841	0.774	0.804	0.831	249
Panel B: Average efficiency, TGR and meta-efficiency scores for SEMC banks										
Algeria	0.861	0.919	0.986	0.745	0.843	0.952	0.654	0.774	0.873	93
Egypt	0.989	0.991	0.992	0.653	0.836	0.924	0.647	0.829	0.917	334
Israel	0.95	0.973	0.992	0.299	0.378	0.496	0.291	0.368	0.475	138
Jordan	0.987	0.989	0.991	0.712	0.79	0.834	0.706	0.782	0.827	133
Lebanon	0.966	0.979	0.987	0.73	0.888	0.953	0.706	0.871	0.934	496
Libya	0.188	0.64	0.993	0.364	0.615	0.999	0.14	0.366	0.883	16
Morocco	0.93	0.972	0.989	0.67	0.824	0.929	0.643	0.802	0.911	110
Syria	0.878	0.956	0.984	0.638	0.758	0.999	0.581	0.726	0.975	38
Tunisia	0.966	0.982	0.992	0.836	0.856	0.867	0.817	0.841	0.856	149

Note: Efficiency is the distance from the country frontier. Meta-efficiency is the distance from the meta-frontier. TGR measures the distance between the country and meta-frontier. Meta-efficiency is the product of efficiency and TGR

but possibly persistent differences in TGR levels at least between groups of countries.

The SEMC results do not show changes during the sample period, with the exception of Algeria. Most countries' efficiency scores are consistently close to unity, indicating efficiency relative to their own national technology. These results need to be treated with caution. In some countries the number of banks is small. When examining the trend of TGR for the SEMC, we find that at the beginning of the sample period Egyptian banks scored better than other countries, with TGR above 0.85. This trend reversed in the early 2000s, indicating that the gap between the meta-frontier and the national one widened progressively. Banks in Lebanon and Morocco displayed a better performance as their respective TGR increased over time.

The next step of the analysis is to investigate how the banks in the EU-MED and the SEMC would fare if the reference technology was the over-arching frontier encompassing all the SEMC.

Figure 12.1 illustrates the trend of TGR over the sample period relative to the overall EU-MED and SEMC meta-frontier. The EU-MED banking industries have higher TGR compared to the SEMC. The gap becomes bigger from 2003 onwards. The EUR-MED's TGR show a decline in the period running up to the global financial crisis, with a dip in 2008, and increasing again afterwards. The SEMC show a reduction in TGR over the latter part of the sample period. Since these averages are across all the banks in a given country, this may indicate that technical improvements are shifting the meta-frontier upwards, making it more difficult for some banks and/or banking sectors to catch up. In addition, the technological gap between the EU-MED and the SEMC seems to increase again in the post-crisis period (from 2008 onwards).

12.5.2 Efficiency, Meta-Efficiency, and TGR: Northern Europe and CEE

Table 12.3 presents the efficiency scores (column 2), the TGR (column 3), and the meta-efficiency scores (column 4) for the banking industries of countries located in Northern Europe (Panel A) and in CEE (Panel B).

Single-country efficiency scores for Northern Europe show little change over the sample period. The banking industries of Belgium and Finland display efficiency scores consistently close to unity, perhaps because both countries have concentrated banking sectors with a few very large banks. The banking industry in Sweden displays greater improvement in efficiency scores, possibly as a consequence of the sector's recovery from the crisis it underwent in the early 1990s.

Irish and Austrian banks had higher TGR scores (around 0.8) than other Northern European countries. On average, the lowest TGR is found in Finland: again this could be because its banking system is small and concentrated. Finnish banks

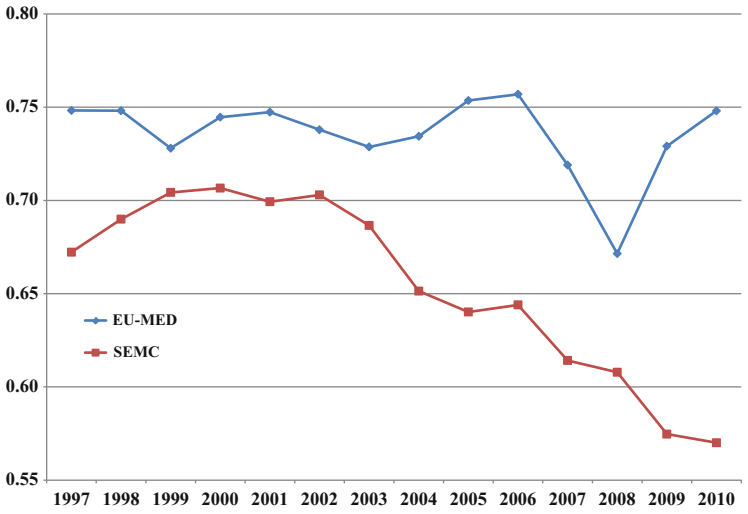

Fig. 12.1 TGR: EU-MED and SEMC (From Bankscope; authors' estimations)

caught up and by the mid-2000s their TGR were similar to those of Belgian and Dutch banks.

We find that banks in Bulgaria and the Czech Republic underperformed their regional peers in the late 1990s. However, by 2010 their efficiency levels converged to the average of the region (0.97). At the beginning of the sample period, banks in the Czech Republic had the lowest average TGR at 0.5, indicating the wide gap between the national frontier and the meta-frontier. Czech banks, however, steadily reduced the gap and by 2007 their average TGR was in line with the regional average.

We next investigate how banks in Northern Europe and CEE would fare if the reference technology was the over-arching frontier encompassing all the countries.

Figure 12.2 illustrates the trend of TGR over the sample period relative to the Northern European and CEE meta-frontier. Although the average TGR for banks located in Northern European countries is consistently higher, the gap seemed to close in the early 2000s. The two regions followed a similar trend, with the gap between the meta-frontier and individual countries frontier widening from 2006 onwards, at the onset of the global financial crisis, as indicated by the decline in TGR.

The results imply that the technological gap between Northern Europe and CEE has narrowed over time, whereas the gap between the EU-MED and the SEMC has widened (despite some EU-MED falling behind). In Sect. 12.5.3 we investigate this issue by testing for the existence of convergence in efficiency, meta-efficiency, and technological gap ratios.

Table 12.3 Efficiency, meta-efficiency and TGR: Northern and Eastern European banking industries (From Bankscope; authors' estimations)

	Efficiency			TGR			Meta Efficiency			
Country	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Total no. of observ.
Panel A: Average efficiency, TGR and meta-efficiency scores for Northern European banks										
Austria	0.962	0.975	0.982	0.725	0.861	0.936	0.709	0.840	0.920	2,413
Belgium	0.99	0.993	0.994	0.604	0.681	0.749	0.601	0.676	0.745	207
Denmark	0.928	0.946	0.965	0.694	0.802	0.881	0.646	0.757	0.843	1,239
Finland	0.932	0.958	0.987	0.621	0.744	0.916	0.596	0.713	0.879	87
Germany	0.997	0.997	0.997	0.334	0.582	0.775	0.333	0.58	0.772	21,756
Ireland	0.904	0.966	0.984	0.553	0.731	0.829	0.495	0.708	0.808	104
Netherlands	0.962	0.975	0.982	0.725	0.861	0.936	0.709	0.84	0.920	261
Sweden	0.990	0.993	0.994	0.604	0.681	0.749	0.601	0.676	0.745	868
UK	0.954	0.973	0.978	0.559	0.687	0.904	0.542	0.669	0.884	540
Panel B: Average efficiency, TGR and Meta-efficiency scores for CEE banks										
Bulgaria	0.871	0.941	0.976	0.826	0.872	0.945	0.721	0.821	0.875	231
Czech R.	0.89	0.933	0.962	0.494	0.715	0.869	0.46	0.672	0.832	58
Estonia	0.967	0.978	0.984	0.66	0.799	0.937	0.649	0.781	0.915	280
Hungary	0.956	0.961	0.965	0.843	0.884	0.937	0.811	0.851	0.904	190
Latvia	0.958	0.978	0.988	0.732	0.839	0.948	0.715	0.821	0.931	430
Poland	0.967	0.975	0.982	0.767	0.83	0.884	0.747	0.810	0.855	207
Slovakia	0.976	0.981	0.986	0.766	0.860	0.906	0.75	0.844	0.890	2,413
Slovenia	0.968	0.979	0.989	0.817	0.873	0.917	0.791	0.855	0.903	164

Note: see Table 12.2

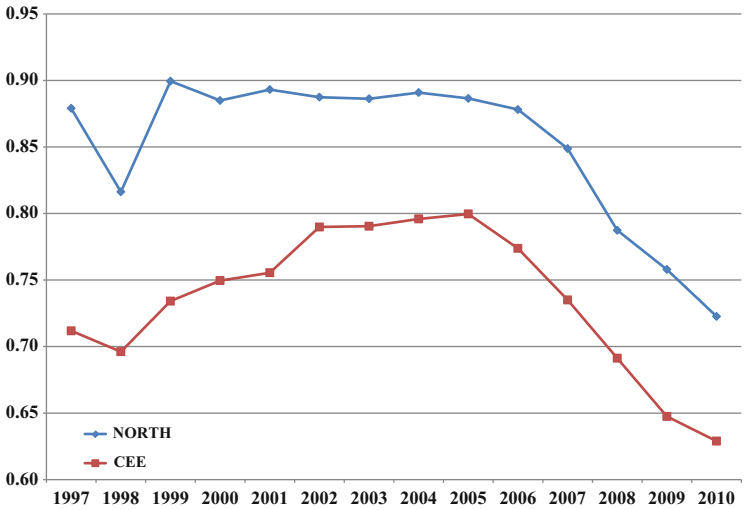

Fig. 12.2 TGR: Northern Europe and CEE (From Bankscope; authors' estimations)

12.5.3 Convergence Analysis

We assess whether the banking systems in the analyzed countries are converging toward the same average efficiency and TGR level by testing for the existence of β and σ convergence in the short run (i.e. year by year). We look at the four regions separately and then at two 'macro-areas' as defined in Sect. 12.1 (see Table 12.4).

For the EU-MED, we find fast convergence in efficiency ($\lambda = -0.99$) but conditional on a given country, especially for the largest economies of the region (France, Italy, Spain). More homogeneity is found in the convergence in TGR levels, where the results indicate two blocks of countries, with France, Spain, and to a lesser extent, Italy on the one hand, and remaining countries on the other. The largest banking industries converge towards a steady state level of technical performance.

For the SEMC we find absolute convergence in efficiency but not in TGR values. Progress towards a common best technology for the SEMC is at best slow, if at all significant.

When we put all these countries together to form a global meta-frontier,[2] we find an almost non-existent convergence in TGR, i.e. an extremely slow process. This reflects the pattern of an increasing gap in TGR after 2003. Similar results hold true for overall meta-efficiency scores, with all countries moving in the same direction at a slow pace, except Algeria, and to a lesser extent Egypt.

[2] This is possibly the less meaningful of the comparisons, given the fragility of the SEMC sample, the difference in sample sizes and the possibly very different banking systems.

Table 12.4 Convergence analysis (Bankscope; authors' estimations)

Region	Variable	Λ (β convergence)	γ_i (conditional or absolute convergence)	C (σ convergence)
EU North	Efficiency	−0.550 (0.00)	Conditional, in blocks	1.893 (0.00)
	TGR	−0.408 (0.00)	Conditional, in blocks	0.711 (0.96)
CEE	Efficiency	−0.760 (0.00)	Conditional, in blocks	14.210 (0.00)
	TGR	−0.270 (0.00)	Absolute	0.630 (0.999)
EU North and CEE	Meta efficiency	−0.373 (0.00)	Conditional, in blocks	0.633 (0.999)
	TGR	−0.314 (0.00)	Almost absolute	0.413 (0.999)
EU-MED	Efficiency	−0.99 (0.00)	Conditional	0.380 (0.999)
	TGR	−0.293 (0.00)	Conditional, in blocks	0.500 (0.999)
SEMC	Efficiency	−0.450 (0.00)	Almost absolute	1.070 (0.37)
	TGR	0.010 (0.112)	None	n.a.
EU-MED and SEMC	Meta efficiency	−0.220 (0.00)	Almost absolute	0.194 (0.999)
	TGR	−0.0760 (0.045)	v. slow almost absolute	0.190 (0.999)

Note: The coefficients are derived from Eqs. 12.5 and 12.6. P-values in brackets

We do not find significant convergence in efficiency among Northern European countries. One possible explanation is that they are among the highest in the whole sample, leaving little scope for further improvement. Whatever improvements are made over time, any existing differences among countries are not getting smaller. We find convergence in TGR, conditional upon groups of countries. Germany, Austria, Sweden, and the UK appear to be in a group of their own, whereas Finland, Denmark, Belgium, and partially Ireland, can be grouped separately.

We do not find convergence in efficiency among CEE countries; although we find full convergence in TGR (that is β confirmed by σ, and no difference between countries). These countries are all moving towards the same frontier, i.e. the use of the same technology, even if they might be doing so at different levels of efficiency.

When we analyze these two groups of countries to form a general, global meta-frontier, we find almost absolute convergence in TGR, except for Bulgaria and Estonia. These countries showed a greater degree of homogeneity than they did when analyzed separately.

They remain different in their efficiency levels, and as a consequence, when we look at the two measures together as meta-efficiency we find two blocks of convergence: Germany, Belgium, Austria, Czech Republic, Denmark, Latvia, Poland, Slovakia, Slovenia, Sweden, and the UK on the one hand, and Estonia, Finland, Ireland, Hungary, and Bulgaria on the other. While they appear to be moving towards the adoption of the same technology, the efficiency with which they do this is not the same. This result is consistent with the fact that the estimation of a global meta-frontier was rejected by the data, as mentioned earlier.

12.6 Conclusions

We investigated bank efficiency and convergence for a large cross-country sample of EU member states and the SEMC during the period 1997–2010. Banking industries in the two 'macro-areas' under analysis do not share a common meta-technology, and therefore differences remain. The Northern and Eastern parts of the EU are more homogenous in their progressive movement towards a common technology but maintain differences in the efficiency with which they perform their operations. The same cannot be said of the Southern part of the sample, where convergence in technology is barely existent, making the higher homogeneity in efficiency levels less meaningful, since they are defined with respect to very different technologies. The differences among banking industries, even among countries within the same 'macro-area,' are still relevant. Domestic and international barriers are often cited as the determinants in the timing and pace of technological catch-up. Taken together, our results suggest that the reform experience of the SEMC has been less successful compared to other developing and transition countries, particularly the CEE. The policy agenda of this region should focus on the type of regulatory and supervisory reforms that promote bank efficiency and financial sector stability simultaneously.

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Chapter 13
Convergence of Banking Regulation

Rym Ayadi, Emrah Arbak, and Willem Pieter De Groen

13.1 Introduction

The SEMC reformed their financial sectors in the 2000s. We developed a number of indicators to track the evolution and assess the adequacy of banking regulations using publicly available and comparable surveys for a sample of countries since the early 2000s. To allow comparability across the Mediterranean, the report develops the measures for ten of the SEMC, all except Libya, and seven of the EU-MED.

We aimed to develop quantitative measures of regulatory development to assess convergence on international norms. In line with Ayadi et al. (2011a) and Ayadi and De Groen (2013), we identified seven areas of regulatory adequacy. These cover the definition of banking, licensing requirements, capital requirements, the independence and power of the supervisor, the presence of safety nets, disclosure, and the availability of credit information using distinct data sources. Several areas of study (i.e. payment and settlement systems, credit guarantee schemes, and financial inclusion) have been excluded due to the unavailability of comparable information sources for the sampled countries.

The analysis shows some levels of convergence in banking regulations in the region. The SEMC have improved credit information and capital requirements as well as reduced entry obstacles in 2000s. Nevertheless, they suffer from weaknesses in deposit insurance, entry obstacles, political interference, and insufficient legal rights.

The remainder of this chapter is structured as follows. Section 13.2 provides a description of the methods and data used to analyze the convergence of banks in the Euro-Mediterranean area. In Sect. 13.3, we present and discuss quantitative

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measures. Based on the results, conclusions and policy recommendations are drawn in Sect. 13.4.

13.2 Methodology

The main source of information for the regulatory adequacy indices are the BRSS developed by Barth et al. (2001), later revised in 2003, 2007, and 2011 (see Barth et al. 2006, 2008, 2012). All four surveys are built on responses to questionnaires sent to national regulatory and supervisory agencies of over 120 countries, most of which were returned. The questions cover a variety of areas, including banking activity, barriers to entry, capital regulations, supervisory authority, private monitoring, deposit insurance, and external governance.

One of the advantages of the BRSS is that the questionnaires have remained similar over the years. Later versions simply cover more subjects than the original survey. This feature of the dataset allows us to make comparisons by building composite indices. These indices, based on answers over time, track the evolution of regulation and supervision.

A disadvantage of the Barth et al. (2001) survey is that the number of questions responded to in the 2003, 2007, and 2011 revisions vary from one country to another. For Mediterranean countries, response rates are lower than for the entire sample. Among the SEMC, the Moroccan regulatory authorities were the most responsive, with an average response rate above 95 % (Fig. 13.1). The regulatory

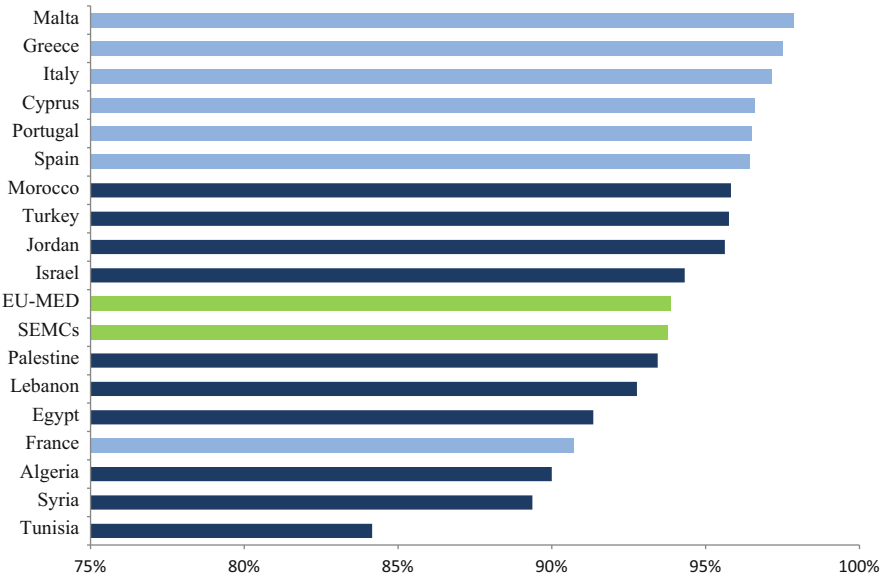

Fig. 13.1 Average response rates to the BRSS of Barth et al. (2006; 2012) (From BRSS) (Note: Response rates are averaged over the four surveys and correspond to the number of questions with complete answers divided by the total number of questions)

authorities of Algeria, Syria, and Tunisia had response rates of between 83 % and 90 %, below the Mediterranean average. Although the response rates appear high, the existence of a single partial or empty answer renders the construction of a relevant composite index dubious, since there is no way of scoring for missing responses.

Some of the SEMC have not responded to all four surveys. Palestine responded to one survey (2011), Algeria (2003, 2007), Syria (2007, 2011) and Tunisia (2003, 2011) to two surveys and Turkey (2000, 2003, and 2011) to three surveys. To avoid inconsistencies, empty answers were scored as zero in the construction of the relevant indices. This approach is in line with Barth et al. (2006, 2012). The assessment of regulatory convergence is based on the calculation of regional averages, weighted by the total banking assets of each country.

A second disadvantage of Barth et al. (2001) and its revisions is that the questions did not cover all regulatory and supervisory areas, such as the extent of credit information sharing and creditors' legal rights. We used additional sources to supplement the construction of the composite indices, including the deposit insurance database of Demirguc-Kunt et al. (2005), the IMF and WB Financial Sector Assessment reports, the WB DB indicators, and the websites of the national authorities.

13.3 Composite Indices

We created seven composite indices for each country and for the SEMC and EU-MED regions, using the data sources identified in Sect. 13.2: scope restrictions, entry obstacles, capital requirement stringency, supervisory authority, deposit insurance, private monitoring, credit information, and creditor rights.

13.3.1 Scope Restrictions

Across the world, financial institutions are becoming increasingly complex and offering a wider spectrum of products (Ayadi et al. 2011b). Some countries restrict banking to a narrow range of activities, such as taking deposits and issuing credit with little flexibility in debt and asset management, while others provide more flexibility. The rules typically restrict the extent to which banks may engage in the business of (i) securities underwriting, brokering, dealing, and all aspects of the mutual fund industry; (ii) insurance underwriting and selling; and (iii) real estate investment, development, and management.

The country-specific results show that regulators in the SEMC impose more restrictions than their counterparts in the EU-MED. The composite indicator used in this area is based on the BARI and constructed by summing up the scores for the WB Guide questions 4.1–4.3, as detailed in Barth et al. (2006). The surveys

measure the degrees of restrictiveness for each of the above three categories, ranging from unrestricted (1 point), mostly permitted (2 points) and too restricted (3 points) to fully prohibited (4 points). The BARI sums up the scores for each category, with a maximum restrictiveness score of 12, where no activity other than narrow banking is allowed.

An analysis of the survey results shows that on both coasts of the Mediterranean, regulators impose some restriction on insurance activities. Israel and Jordan's banks face restrictions on real estate activities and some prohibitions on securities and insurance activities. This is in line with Turkey, although Jordan's banks only have to deal with a few restrictions in order to engage in securities activities. Syria's banks, which are prohibited from engaging in both insurance and real estate activities, are free to engage in securities activities. Morocco's banks are similarly restricted in their activities, but are allowed to engage in insurance activities to a limited extent. Algerian banks are prohibited from engaging in insurance activities, but are free to engage in securities and real estate activities. Palestine's banks are free to engage in insurance activities and face fewer restrictions in both securities and real estate investment activities. Lebanon's banks are prohibited from engaging in real estate activities yet have a degree of freedom to engage in insurance and securities activities. Egypt imposes restrictions on insurance and real estate, comparable with the EU-MED. Information on Tunisia remains incomplete.

EU-MED banks face fewer restrictions than most of their neighbors. All EU-MED banks have freedom to engage in securities activities. Spanish, Portuguese, and Greek banks are relatively lightly restricted from engaging in insurance and real estate activities. Cypriot and Maltese banks are prohibited from engaging in real estate activities. French banks are prohibited from insurance.

There is a convergence tendency between the regional weighted averages. While the EU-MED weighted averages have gradually moved up over time, the SEMC averages have gone down, converging on the former.

Israel and Jordan impose numerous restrictions while Palestine has the most flexible system. Spain's system imposes the least number of restrictions while France and Malta have narrowed the scope of banking activities over the years. This EU-MED trend may change as a result of post-financial crisis reforms in the EU that increased restrictions on banking activities.

13.3.2 Entry Obstacles

Competitive conditions depend on regulations that hinder or prevent entry into the banking sector. Obstacles may take the form of excessive licensing or entry requirements, which are applicable to domestic and foreign banks alike. Governments may restrict entry of foreign banks as a policy choice, either explicitly by setting limits on ownership or implicitly by rejecting foreign applications in a disproportionate manner. Lastly, a banking sector that is predominantly

state-owned may be disadvantageous for privately owned banks.[1] These three indicators are used to construct the index of entry obstacles.

The first indicator is computed by summing up the scores for the WB Guide questions 1.8.1–1.8.8, as detailed in Barth et al. (2006). It reflects the total number of required documents, including (i) draft by-laws, (ii) an organizational chart, (iii) financial projections, (iv) financial information on potential shareholders, (v) the background of directors, (vi) the background of management, (vii) details of funding sources, and (viii) market differentiation intended. Both the SEMC and the EU-MED require all eight types of entry documents. Only Greece and Portugal do not legally oblige banks to provide information on the background of future managers.

The second indicator considers the discretionary power that the authorities enjoy by granting or rejecting entry. It shows the fraction of licensing applications for foreign banks that have been denied within the past 5 years from the day the survey was conducted (the WB Guide question 1.10, as detailed in Barth et al. 2006).

Denials of foreign banking applications are frequent in the SEMC, in contrast to the EU-MED, where they are rare. The Egyptian regulator denied all licensing applications of foreign banks between 1995 and 2002 and four out of the five applications between 2006 and 2010. Jordan denied two of the four applications over the same period. Turkey refused 2 out of 15 foreign applications. Israel and Morocco denied several foreign banking applications in the past, but none of five applications between 2006 and 2010. Algeria, Lebanon, Palestine, Syria, and Tunisia do not use denials of foreign bank applications as an entry obstacle. The percentage of foreign denials in the SEMC has decreased since 1995, suggesting some convergence with the EU-MED.

The third and last indicator on entry obstacles relates to government-controlled banking (the WB Guide question 3.8.1, as detailed in Barth et al. 2006; data are only available for the 2003, 2007, and 2011 surveys). This is a measure of the market power of state-owned banks, i.e. the percentage of total banking assets controlled by the banks in which government possesses more than 50 % of equity.

While the state has little control over banking in the EU-MED, except in Greece and Portugal, public sector banks represent a significant part of the banking activity in the SEMC. This is the case in Algeria, Egypt, and Syria. State-owned banks in these countries enjoy implicit or explicit state guarantees, have access to public funding, and are subject to less strict rules, putting potential entrants at a disadvantage and undermining competition (Barth et al. 2004).

Put together, the three indices provide a picture of the entry obstacles in the countries sampled. The set of documents needed for a valid licensing application

[1] Aside from their potentially negative impact on entry, state-owned banks may fulfil an important developmental role. Rocha et al. (2010) show that in the MENA region, public banks compensate for the low private bank involvement in the SME sector, engaging in more risky loan issuance, although they seem to have less than sufficient capacity to manage such risks. Andrianova et al. (2010) provide evidence that government ownership of banks is associated with higher long-run growth rates in developing countries.

are similar on both sides of the Mediterranean. These requirements are used to ensure that only 'fit and proper' undertakings are allowed to operate as banks. Only two countries, Greece and Portugal, distinguish themselves with few licensing requirements. Foreign entry denials – a less official form of control authorities exert on the banking sector – are high in some of the SEMC, particularly in Egypt and Jordan. Governments maintain direct controls over the banking sector in most of the SEMC. State-owned banks account for more than two-thirds of the banking sectors of Algeria, Egypt, and Syria. Although entry conditions appear comparable, there are significant and persistent entry obstacles that curtail competition in the SEMC's banking sectors.

13.3.3 Capital Requirement Stringency

One of the aims of bank regulation is ensuring that banks operate soundly. Capital requirements are a part of these rules, which determine the minimum amount of capital a bank should hold relative to its total assets (or risk-weighted assets).

Capital ratios tell us how sound the banking sector is. All the countries have maintained a total capital ratio of between 9 % and 15 %, with the exception of Greece. Since 1998, banks in the SEMC have become better capitalized, with average capital ratios reaching 16.9 % towards at the end of 2010s. In 2011, capital ratios decreased to 15.5 %, especially in fast-growing banking sectors like that of Turkey.

Capital ratios in the SEMC are higher than in the EU-MED, which can reflect either the stringency of capital requirements or a lower appetite for risk.

This is addressed by the WB Guide questions 3.1.1, 3.2, 3.3, 3.9.1, 3.9.2, 3.9.3, and 1.5–1.7. The calculation of the index is detailed in Barth et al. (2006: 337–338). One question (3.7) on the fraction of revaluation gains allowed as part of capital has been omitted because the responses were not available for most of the countries in the sample. The index that determines the extent to which capital requirements restrict leverage potential and risky behavior, includes questions on (i) whether the minimum capital-to-asset requirements are in line with 1988 Basel Accord definitions; (ii) whether the minimum ratio varies with the bank's credit risk or (iii) market risk; and whether the value of (iv) unrealized loan losses, (v) unrealized security losses or (vi) foreign exchange losses are deducted from regulatory capital. The index seeks to measure the restrictions imposed on the source of regulatory capital, such as (vii) whether these funds are verified by regulatory authorities; and, whether (viii) cash and government securities, or (ix) non-borrowed funds are the only forms of capital allowed for initial disbursements and subsequent injections. A greater number of positive responses to these questions leads to a higher stringency score.

The results reveal that capital requirements have become more stringent in most of the analyzed countries. More and more of the SEMC are implementing legislation to align their capital requirements with Basel II capital standards. Jordan,

Lebanon, Morocco, Syria, and Turkey adopted legislation that allowed banks to vary their minimum capital requirements depending on banks' individual credit risk and market risk. The implementation of this legislation led to a jump in capital stringency between 2007 and 2011 with the exception of Tunisia. The Tunisian authorities filled out fewer questions regarding capital stringency than 7 years earlier.

Among the EU-MED, Cyprus had the most stringent capital requirements, with affirmative answers to six out of seven questions in 2011, followed by France and Spain. Like other EU-MED, the Cypriot supervisory authorities did not verify the sources of funds to be used as capital. France and Spain strengthened the rules. During the financial crisis, capital requirements in these countries were relaxed: banks could increase their capital with assets other than cash or government securities. The initial capital of banks in Greece, Italy, and Malta could include borrowed funds. Banks in Portugal were not obliged to deduct unrealized losses in securities portfolios from capital and were allowed to fund capital contributions using assets other than government securities or cash.

There is a pattern of convergence. EU members Greece, Italy, Malta, and Portugal have flexible capital requirements, while the opposite is true for Cyprus, France, and Spain. The capital requirements of most of the SEMC are more stringent than EU-MED averages, especially concerning the usage of non-cash or government securities and borrowed funds for capital. These results are in line with findings of Tahari et al. (2007).

13.3.4 Supervisory Authority

Supervisory authorities are judged based on their powers to discipline or, at the extreme, resolve banks that violate their rules or engage in imprudent activities. Two indices are used to measure supervisory authority power.

The first one measures the power of the supervisor to take actions to correct or prevent problems. Its calculation is detailed in Barth et al. (2006: 339–342) and based on the WB Guide questions 5.5–5.7, 6.1, 10.4, 11.2, 11.3.1–11.3.3, 11.6, 11.7, and 11.9.1–11.9.3. They address the ability of supervisors to (i) meet external auditors without the approval of a bank, (ii) communicate directly with auditors on illicit activities undertaken by a bank's management or directors, (iii) receive disclosure of off-balance sheet items, (iv) take legal action against negligent auditors, (v) change the organizational structure of a troubled bank, (vi) order management or directors to cover losses, and (vii) suspend dividend distributions, as well as (viii) bonuses and (ix) management fees. Additionally, for the 2003, 2007, and 2011 surveys, questions on troubled banks considered the supervisors' ability to (x) declare insolvency, (xi) suspend ownership rights, (xii) supersede shareholder rights, and (xiii) fire or hire management or (xiv) directors. An affirmative answer to any of these questions means greater supervisory power. Some of these powers may only be exercisable by supervisory-like institutions, such as a

depository insurance agency or a bank restructuring agency. In these cases, the aggregate score is augmented by only half points.

The results suggest that the SEMC and the EU-MED grant more or less the same power to their supervisory authorities. Yet there are differences among individual countries. In Jordan and Palestine, the supervisor is allowed to intervene directly in all the domains highlighted above. The supervisor in Syria has only elementary tools, like the possibility to meet external auditors without the approval of the bank, but is not allowed to communicate directly with auditors on illicit activities or take any legal action against these auditors. The supervisor can prevent dividends being paid out, but cannot suspend bonuses for management. As in all of the SEMC, excluding Jordan and Palestine, the Syrian supervisor does not have the authority to declare a bank insolvent or supersede shareholder rights.

Cyprus, France, Italy and, to a lesser extent, Portugal and Spain grant substantial power to their supervisory authorities. Greece obtains the lowest score in supervisory power: its supervisory authority has no right to meet external auditor without prior approval of the bank or to sue the auditors for negligence. Greek banks are not obliged to publish information on off-balance sheet positions. Furthermore, the Greek supervisor does not have power to suspend shareholder rights or replace management.

The second measure of supervisory authority is independence from political influence. Three questions are considered (WB Guide questions 12.2, 12.10, and 12.2.2 – see Barth et al. 2006: 349–350): (i) Are supervisory bodies accountable *only* to a legislative body? (ii) Are supervisors legally liable for their actions committed in the exercise of their duties? (iii) Does the head of the agency have a fixed term? The level of independence is determined based on affirmative answers to questions (i) and (iii) and a negative answer to (ii).

The results show a divergence. Banking supervisors in the EU-MED have become more independent. Far less has changed in the SEMC, where supervisors remain directly accountable to the executive branch of government, i.e. the president, the king in case of Morocco, the prime minister, or other cabinet members.

Of concern is Algeria, where none of the criteria was satisfied in the last available survey, which implies enormous potential for political interference. The same can be said of Israel, Lebanon, Morocco, and Syria. In comparison, the supervisor is only accountable to a legislative body in all EU member states except Greece and Italy, as well as in Egypt, Jordan, Palestine, Tunisia, and Turkey. The Italian supervisory authority's independence remains below EU standards, as does its legal liability for damages to a bank in the exercise of its duties. A fixed term for the head of the regulatory authority does not exist in Algeria, Israel, Morocco, or Syria, but has become popular in the EU.

The results of the BRSS surveys show that the powers granted to supervisors have increased or remained constant in almost all countries. They are on the rise on both sides of the Mediterranean. Government officials retain the ability to interfere in supervisors' work. Provided that some of the SEMC have a substantial government presence in the banking sector (see Sect. 13.3.2), operational

independence should be a guiding principle to ensure that all banks – publicly- or privately-owned – are treated equally.

13.3.5 Deposit Insurance

Deposit insurance systems are designed to prevent disruptions to financial markets. They provide confidence to small depositors and prevent bank runs. At the same time, they create moral hazard, diminishing depositors' incentives to monitor and screen banks and amplifying banks' incentives to take on excessive risk at the cost of deposit insurance funds and, ultimately, taxpayers.

The deposit insurance index computed for 2003, 2007, and 2011 identifies the level of observance of standards that are thought to mitigate the moral hazard problem. Its calculation follows the proposal of Barth et al. (2006: 354) and uses information provided by BRSS, Demirguc-Kunt et al. (2005), the European Commission (2010), and documents from the websites of Bank Al-Maghrib and Banque d'Algérie.

For countries with an explicit system, three issues are important: (i) whether a co-insurance discount is applicable to pay-outs,[2] (ii) whether premiums are risk-adjusted and (iii) whether only banks take a primary role. An additional point is scored for an affirmative answer to each one of these questions. A score of zero is assigned to countries with no explicit deposit insurance system. In such cases the government is assumed to provide implicit guarantees, creating an incentive for banks to take excessive risks.

The scores show that moral hazard is a problem in the SEMC due to the absence of explicit deposit guarantee schemes in Egypt, Israel, Palestine, Syria, and Tunisia. The Algerian system was equivalent to an implicit guarantee with the government providing direct funding until 2003, when this system was replaced with full funding by banks.

Among countries with explicit systems, Algeria, Cyprus, Spain, Greece, Jordan, Lebanon, Malta, and Morocco only satisfied the requirement that the banks (and not the government) play the primary role in deposit insurance funding in 2011. The French, Greek, Italian, and Portuguese systems included risk-adjusted premiums, impacting the EU-MED averages. Lastly, the EU-MED averages display a downward trend due to the gradual abandonment of co-insurance payouts. The European Commission (2010) proposal to harmonize deposit guarantee schemes in the EU would oblige EU member states to implement a risk-based, deposit guarantee scheme that is bank-funded. The proposal has not been adopted, since the European Parliament and Council have not agreed on the final terms.

[2] Empirical evidence shows that the coverage limits and co-insurance practices serve to reduce the likelihood of bank failure substantially (Demirguc-Kunt and Detragiache 2002).

Egypt,[3] Israel, Palestine, Syria, and Tunisia do not have active deposit insurance schemes, albeit each country is studying or considering implementing one. A badly designed scheme invites additional risks and may be no better than no scheme at all. The results show that schemes in Jordan, Lebanon, and Morocco, as well as in some of the EU-MED countries, amplify moral hazard risks. Still, these conclusions should be interpreted with care. As the recent global financial crisis has shown, when a run on a bank has the potential to spur broader panic, a government is likely to step in to stop a bank run, regardless of explicit arrangements in place.[4] Named arrangements may not mitigate moral hazard, since they are easily replaced with limitless state support. Such blanket guarantees are not viable in most of the SEMC, which have limited public resources. The explicit schemes, wherever they exist, are the only viable insurance for depositors, highlighting the importance of design issues in resource-poor countries.

13.3.6 Private Monitoring

There are other forces that influence banks. Investors shape banks' decisions and restrain risky behavior. Theoretically, block-holders can exercise their voting power to influence managerial actions. More realistically, creditors or stockholders use available information to assess a bank's condition and indirectly influence the management by withdrawing funds, which has an impact on the borrowing costs of the bank. Private monitoring is undermined when an explicit and over-generous scheme for deposit insurance exists. The availability of reliable and timely information for investors is at the core of market discipline.

The private monitoring index is based on responses to the WB Guide questions 5.1, 5.3, 10.7.1–2, 10.1, 10.1.1, 10.3, 10.6, 3.5–6, 10.4.1, 10.5, and 11.1.1. As compared to Barth et al. (2006), we exclude a question on the presence of an explicit deposit insurance, which has been covered in Sect. 13.3.5. The questions concern whether (i) a certified audit is required and whether all of the top ten banks are rated by (ii) domestic or (iii) international credit rating agencies. They consider whether income standards include accrued but unpaid interest on (iv) performing or (v) NPL; (vi) banks are required to produce consolidated accounts; (vii) directors are liable for erroneous or misleading reporting; (viii) subordinated debt is allowable or required as part of capital; (ix) off-balance items are disclosed to the public; (x) banks are required to disclose risk-management procedures and (xi) supervisors are required to make enforcement actions public. The private monitoring score increases with affirmative answers to these questions.

[3] In Egypt, although the legal framework allows for the establishment of an autonomous deposit insurance fund, no scheme has been set up yet.

[4] The example of the fall of Northern Rock in 2007, when the UK Treasury extended the existing guarantees – with a maximum payout of GBP31,700 at the time – to cover all deposits.

The comparison points at a small but growing disparity between the two coasts of the Mediterranean. Although most countries fulfill a majority of the requirements, the progress in the EU is not paralleled in the SEMC. The difference between the SEMC and the EU-MED is the share of the top ten banks that are rated by international or domestic credit rating agencies. This gap has widened according to the 2011 survey. In the EU, almost all of the top ten banks are rated by credit rating agencies, except in Cyprus and Malta. In the SEMC, most banks are not rated. In some cases this is due to the structure of the market (a small or highly concentrated banking sector). Algeria's largest banks are state-owned and as of 2007 they were not subject to ratings. In other countries, there are problems with disclosure. In three of the most developed markets in the region, Israel, Lebanon, and Morocco (2007 survey), only half of the top ten banks are rated.

Another issue is the exclusion of accrued (though unpaid) interest from income statements, which allows banks undue flexibility in determining their earnings. Lastly, according to the 2011 BRSS, Tunisian banks are not required to make their risk management procedures public, despite this requirement becoming standard in the region in recent years. Regulatory structures in the SEMC have not matched the progress made in the EU-MED on disclosure rules.

13.3.7 Credit Information and Creditor Rights

Access to information and laws on creditor protection are crucial for the smooth operation of credit markets. Economic theory suggests two limits to the amount of credit that financial institutions can grant to potential borrowers. On the one hand, credit conditions are bound by the ability of creditors to enforce contracts, require repayment, claim collateral, and gain control over receivables. The easier these actions are, the more likely that lenders will grant loans. On the other hand, lenders would like to have access to accurate information on potential borrowers, such as credit histories, other lenders, and other banking transactions.

Theoretical models suggest that information-sharing infrastructure can reduce adverse selection in credit markets and facilitate access to credit, especially among more opaque borrowers, such as SME (Pagano and Jappelli 1993). When such information is available, creditors can make a better judgment of borrowers' creditworthiness. Other papers have documented the importance of creditors' rights for the availability of credit (La Porta et al. 1998; Levine 1998). Recent studies have confirmed these views with evidence that both credit information mechanisms and creditors' rights have an impact on the flow of credit and financial development (Jappelli and Pagano 2002; Djankov et al. 2007; Haselmann et al. 2010).

The indices on credit information and laws developed in this section are based on the 'Getting credit' methodology of the WB DB surveys.[5] They cover the legal

[5] See http://www.doingbusiness.org/methodology/getting-credit

rights of borrowers and lenders with respect to secured transactions and the extent of credit information sharing.

The first index describes how well collateral and bankruptcy laws facilitate lending, i.e. (i) the ability to use moveable assets while keeping possession of assets and the ability to obtain non-possessory security rights in (ii) a single or (iii) all moveable asset classes without requiring a specific description of the collateral. It covers (iv) the extension of security rights to future or after-acquired assets; (v) the ability to secure all types of debts and obligations through a general description; and (vi) the availability of a collateral registry. In addition, it looks at the ability of secured creditors to obtain priority without exceptions in the case of (vii) defaults, (viii) liquidations and (ix) restructuring; and (x) the possibility of out-of-court agreements on collateral enforcement. An affirmative answer to any one of these questions enhances the relevant scores.

The results show that fewer legal rights are granted to creditors in the SEMC. Israel does well, better than almost all countries, by satisfying all but one criterion on the availability of out-of-court agreements on collateral enforcement. Among the EU-MED, Cyprus does equivalently well, complying with all but one criterion, regarding secured creditors' claims during reorganization. France and Spain perform well. Other countries, including the SEMC, do badly, complying only with the criteria on the use of movable assets as collateral, the ability to grant non-possessory rights for a group of assets, and the use of debts in collateral agreements.

The second index measures the availability, coverage, and depth of credit information, either through public credit registries or private credit bureaus. The questions relate to the (i) collection of both positive and negative information, (ii) collection of data on firms and information, (iii) collection of data from retailers and utility companies, (iv) availability of credit history for at least 2 years, (v) availability of data on small loans (i.e. less than 1 % of annual incomes) and (vi) ability of borrowers to access their credit history. As above, an affirmative answer to any one of these questions leads to an additional score.

The SEMC have closed the gap with the EU-MED in terms of the depth of credit information. The average score of the SEMC in the last survey was higher than the score of their EU-MED counterparts. In recent years, credit bureaus in Algeria, Egypt, Morocco, Palestine, and Tunisia have improved their information. In a recent WB DB survey, Egypt satisfied all of the six criteria. Credit bureaus in Lebanon, Morocco, Tunisia, and Turkey only failed to satisfy the criterion to collect data from retailers and utility companies. The credit bureau in Israel met five of the criteria, but did not report both positive and negative credit information. Jordan and Syria are outliers: their credit bureaus only met two criteria.

Among the EU-MED, Cyprus and Malta are exceptions with low scores. In Cyprus, the private credit bureau only meets two criteria and in Malta there is no credit bureau at all. Other EU-MED countries comply with almost all of the criteria. Like many of their SEMC counterparts, French, Greek, Italian, and Portuguese credit registries do not collect information from retailers or utility companies. French credit bureaus do not provide both positive and negative information.

Spanish bureaus do not distribute historical credit information of more than 2 years, but meet all the other criteria.

The figures show that reforms have helped the SEMC to close the gap with the EU-MED in using credit information. The same cannot be said on the strength of legal rights; the EU-MED's average is higher than that of the SEMC.

13.4 Conclusions

This section provides a summary of the seven dimensions analyzed in Sect. 13.3. Figures 13.2 and 13.3 and Table 13.1 show the weaknesses that distinguish the SEMC from the EU-MED: deposit insurance, entry obstacles, strength of creditor rights, potential for political interference, and private monitoring.

The deposit insurance index has failed to improve in recent years because Egyptian, Israeli, Palestinian, Syrian, and Tunisian authorities have chosen not to put explicit insurance schemes in place. Implicit schemes, blanket government guarantees for leading institutions, may enhance risk-taking. In Algeria, Jordan, Lebanon, and Morocco, no effort has been made to align banks' incentives by implementing risk-based premiums or co-insurance schemes, which would help internalize some of the costs to the deposit guarantee schemes that stem from excessive risk-taking.

Entry obstacles remain a weakness in the region. Although licensing requirements are similar on both shores of the Mediterranean, other indicators point at

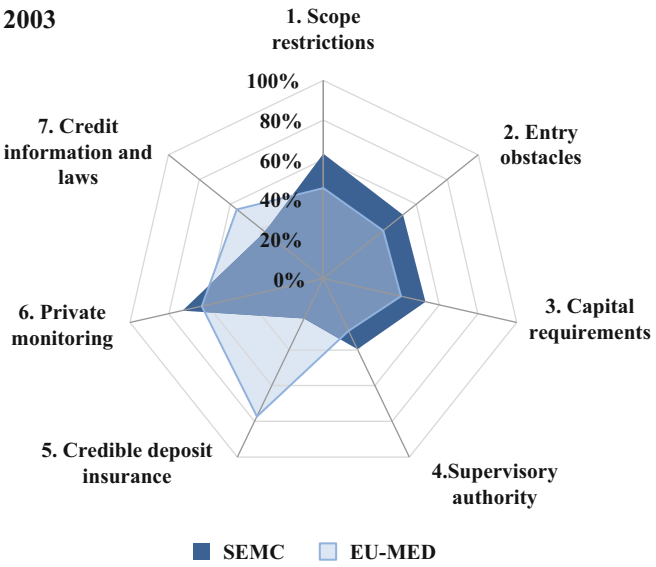

Fig. 13.2 Regulatory standards in the SEMC and EU-MED region, 2003

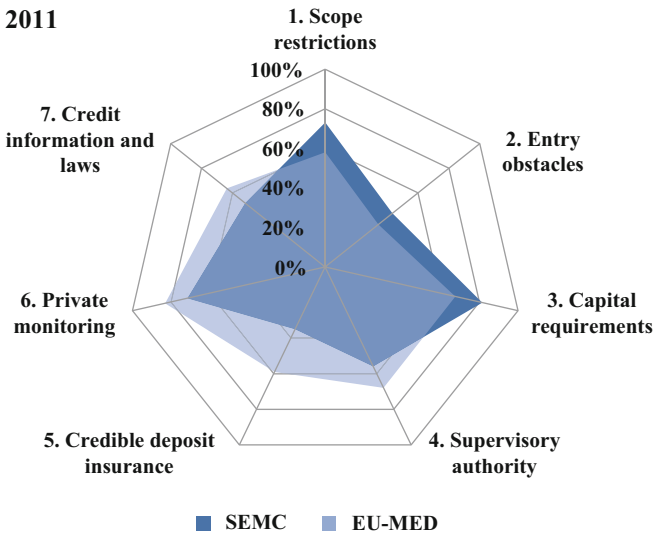

Fig. 13.3 Regulatory standards in the SEMC and EU-MED region, 2011 (Note: Figs. 13.2 and 13.3 sum up the SEMC and the EU-MED weighted averages for the regulatory indices in each of the seven areas)

substantial barriers to entry. State ownership, widespread in Algeria, Egypt, Syria, and, to a lesser degree in Morocco, Tunisia, and Turkey, gives undue advantages to incumbent banks and restricts entry incentives. Although public ownership may offer some benefits (see Sect. 13.3.2), the authorities have to ensure that such roles are defined within a national strategy with clear objectives and instruments, and that they do not hinder the development of the financial system. Rates of foreign denials are high, confirming the entry barriers and competitive advantages enjoyed by domestic incumbent banks.

The 2011 survey points at new concerns. First, poor accounting practices have contributed to a disparity in private monitoring indices. Second, political interference has become a problem, potentially reinforcing the governments' direct control, undermining supervisory authority and, as result, the competitiveness and efficiency of the banking sector (see Chap. 12). As the eruption of public discontent in Tunisia and Egypt in early 2011 attests, the region's governments have attempted to maintain a tight grip on their countries' political and economic systems for far too long. Such forms of interference conflict with the objectives of financial and competition authorities.

On the other hand, the SEMC have implemented reforms to improve the availability and use of credit information by financial institutions. Egypt and Morocco established private credit bureaus in 2006 and 2009, respectively. The SEMC's average is now above the EU-MED's average. Algeria, Israel, Jordan, Lebanon, and Tunisia continue to rely on public registries, three of them meeting all the criteria except collecting credit information on retail stores or utility companies.

Table 13.1 Summary of regulatory weaknesses in the SEMC (Authors' analysis)

Area	Description	General remarks	Algeria	Egypt	Israel	Jordan
I. Scope restrictions	Restrictions on or prohibition of various activities	Slightly more stringent than EU-MED standards	Some restrictions on real estate; insurance activities prohibited	Some restrictions on insurance and real estate	Some restrictions on securities trading and insurance; real estate activities prohibited	Some restrictions on securities trading and insurance; real estate activities prohibited
II. Entry obstacles	Licensing, foreign entry and presence of public banks	Below EU-MED standards due to foreign denials and the role of government	Public banks represent >90 % of bank activity	Foreign denials; public banks represent > 60 % of bank activity		Foreign denials
III. Capital requirements	Extent to which capital requirements restrict risks	More stringent capital requirements than the EU-MED		Market risks not considered		
IV. Supervisory authority	Ability of supervisors to prevent and correct problems	Below EU-MED standards and potential for political interference	High potential for political interference	Some potential for interference	High potential for political interference	Some potential for interference
V. Deposit insurance	Presence of an explicit scheme and mitigation of moral hazard	Below EU-MED standards due to the implicit insurance and adverse incentives	No co-insurance or risk-adjusted premiums	No explicit deposit insurance scheme	No explicit deposit insurance scheme	No co-insurance or risk-adjusted premiums
VI. Private monitoring	Availability of reliable and timely information to investors	Increasing disparity due to few rated banks and flexibility in accounting	Top banks not rated; flexibility in accounting	Several top banks not rated	Several top banks not rated	Several top banks not rated
VII. Credit info. and creditor rights	Ability of legal and information systems to facilitate lending	Below EU-MED standards due to deficient legal rights	No private credit registry; limited legal rights for creditors	Limited legal rights for creditors		No private credit registry; limited legal rights for creditors

(continued)

Table 13.1 (continued)

Area	Lebanon	Morocco	Palestine	Syria	Tunisia	Turkey
I. Scope restrictions	Real estate activities prohibited	Some restrictions on insurance; real estate activities prohibited		Insurance and real estate activities prohibited	Some restrictions on securities and insurance	Some restrictions on insurance; real estate activities prohibited
II. Entry obstacles	Public bank activity	Foreign denials		Public banks represent >70 % of bank activity	Public banks have a diminishing role	Foreign denials; Public banks represent >30 % of bank activity
III. Capital requirements	Broad definition of capital			Broad definition of capital		
IV. Supervisory authority	High potential for political interference	Some potential for interference	Some potential for interference	High potential for political interference	Some potential for interference	Some potential for interference
V. Deposit insurance	No co-insurance or risk-adjusted premiums	No co-insurance or risk-adjusted premiums	No explicit deposit insurance scheme	No explicit deposit insurance scheme	No explicit deposit insurance scheme	No co-insurance
VI. Private monitoring	Several top banks not rated	Several top banks not rated; flexibility in accounting	Several top banks not rated	Several top banks not rated	Flexibility in accounting rules; no risk management disclosure	Flexibility in accounting
VII. Credit info. and creditor rights	No private credit registry; limited legal rights for creditors	Limited legal rights for creditors	No private credit registry; barely any legal rights for creditors	No private credit registry; barely any legal rights for creditors	No private credit registry; limited legal rights for creditors	Limited legal rights for creditors

The same applies to Turkey, which has both public and private credit bureaus. Private credit bureaus have access to new technologies and know-how to ensure that information-sharing mechanisms work. The SEMC should continue to monitor developments and spearhead innovative systems to use the information and infrastructure set up by the public systems. Morocco serves as an example, combining the data collection roles and capacities of the Bank Al-Maghrib, which operates the public registry, with the newly established private credit bureau, Experian-Morocco (Madeddu 2010: 21–23).

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Chapter 14
Financial Development, Bank Efficiency, and Economic Growth Across the Mediterranean

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14.1 Introduction

FD and growth have been intensively analyzed in developed countries – with results indicating a strong positive relationship between them. Studies on developing countries, especially in the SEMC, are scarcer and support evidence of a negative or insignificant impact of finance on growth using most of the time series estimators.

In this chapter, we use the panel data method and a more up-to-date dataset; we include both developed and developing countries, with a special focus on the SEMC. We include variables to assess whether institutional improvement leads to growth and whether FD impacts growth when institutions are of a better quality. We use new quantity measures of FD, such as the size and the liquidity of the financial sector, and new quality measures of FD, such as banking efficiency, to assess potential links with economic growth.

Section 14.2 reviews the literature on the finance and growth nexus. Section 14.3 presents the variables of our analysis, Sect. 14.4 – specification of regressions, Sect. 14.5 – results of analysis and Sect. 14.6 – conclusions and policy implications.

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14.2 Literature Review

The relationship between finance and growth has been debated and investigated for over two centuries. Some argue that finance is a strong contributor to growth (Bagehot 1873; Schumpeter 1912; Hicks 1969; Miller 1998). Others such as Robinson (1952) suggest that growth leads to FD. Lucas (1988) shows that finance is over-emphasized in explaining growth. In a review paper, Levine (2005) stresses that FD contributes to growth by providing information about potential projects, monitoring the implementation of investments, enhancing risk management and diversification, pooling savings, and facilitating the exchange of goods and services.

A large body of research on finance and growth studies the impact of FD (size and structure) on growth and its sources. Most of this research includes cross-country regressions, time-series analysis, panel studies, and industry and firm-level investigations.

In a cross-country study, Goldsmith (1969) finds the size of the financial system positively contributing to economic growth but is unable to display any relationship between financial structure and growth. Levine (2005) raises several problems with Goldsmith's findings: the sample was small (only 34 countries), variables that could impact growth were not accounted for, the functioning of the financial system was not gauged and the direction of causality was not investigated.

King and Levine (1993) improve on the work of Goldsmith by enlarging the sample to 77 countries, introducing control factors, examining three growth indicators (real per capita growth, growth in capital accumulation, and total productivity growth) and introducing new FD measures (liquid liabilities to GDP, bank credit to bank credit plus central bank domestic assets, and credit to private sector divided by GDP). They find a positive relationship between each financial measure and the three growth indicators, using alternative econometric specifications. King and Levine (1993) do not address the causality issue and focus only on the banking sector.

La Porta et al. (2002) finds that a higher degree of state ownership is negatively associated with bank development and economic growth. Levine and Zervos (1998) add stock market development to cross-country studies. They use stock market size and liquidity measures along with initial bank development in a sample of 42 countries. They find that initial stock market liquidity and bank development are positively correlated with all three measures of economic growth after controlling for other factors that could affect growth. Bank development and stock market liquidity are complementary. They provide different financial functions. There are some problems associated with Levine and Zervos' approach. First, they do not address causality. Second, they exclude other components of the financial sector such as the bond market and non-banking financial institutions. Third, they see the only service of a stock market as the supply of liquidity while it also provides risk diversification.

To account for simultaneity bias, Levine (1998, 1999) and Levine et al. (2000) use the legal origin measure (La Porta et al. 1998) as an instrument for FD. Levine et al. (2000) find that the positive impact of FD on growth does not come from a simultaneity bias on a sample of 71 countries. They find that the exogenous component of FD is strongly related to growth.

Panel data has been applied to assess the FD and growth relationship. Levine et al. (2000) use a panel GMM estimator to examine the relationship between finance and growth, while Beck et al. (2000) study the link between finance and the sources of growth. Both papers indicate a positive relationship between finance, growth, and its sources. Beck et al. (2000) argue that the channel of FD to growth is through productivity growth and not through capital accumulation. While these studies focus on a linear relationship between growth and finance, Rioja and Valev (2004a) suggest that FD contributes to growth in industrial countries by enhancing total factor productivity and in developing countries by increasing capital accumulation. Additionally, Rioja and Valev (2004b) find that the impact of FD on growth is stronger for rich countries than for low-income countries. Loayza and Ranciere (2002) emphasize the difference between the short- and long-run impact of FD on growth. They find that the negative short-term association is related to a surge of financial crises. Rousseau and Watchel (2000) find that the exogenous component of bank and stock development contributes to economic growth. They also state that stock market capitalization is not associated with growth because listing is not sufficient to enhance growth.

Time-series techniques have been applied to the finance-growth relationship, using mainly Granger-causality tests and VAR. Demetriades and Hussein (1996) find that the relationship between the money-to-GDP ratio and economic growth runs both ways for developed countries. Rousseau and Watchel (1998) find that the direction of causality runs from finance to growth on a sample of five countries over the nineteenth century. Arestis et al. (2001) assess the finance and growth relationship in developing countries, using quarterly bank and stock market data. They find a positive and significant association between finance and growth, with a larger impact from banking sector measures. Christopoulos and Tsionas (2004) address the high frequency factors influencing the finance-growth nexus by using panel co-integration analysis. They find that the long-run causality runs from FD to growth. Bekaert et al. (2001, 2005) show that financial liberalization spurs growth by improving resource allocation and increasing accumulation rate.

One of the conclusions of the papers reviewed above is that finance is good for growth, especially in middle and high-income countries. The contribution to growth stemming from bank development is stronger than from a stock market.

Two types of research have been conducted in respect to the SEMC: time-series and panel data regression analyses. Studies on time-series can be divided into two sub-types: country and region specific.

Ghali (1999) investigates whether finance contributes to economic growth in Tunisia. The author uses two measures of FD: the ratio of bank deposit liabilities to GDP and the ratio of bank claims on the private sector to nominal GDP. He confirms, using the Granger-causality test, the existence of a long-term stable relationship between financial FD and per capita real output where the causality runs from finance to growth.

Abu-Bader and Abu-Qarn (2008) examine the causal relationship between FD and economic growth in Egypt between 1960 and 2001 using a tri-variate VAR framework. They employ four different measures of FD (ratio of money to GDP, ratio of M2 minus currency to GDP, ratio of bank credit to the private sector to

GDP, and the ratio of credit to private sector to total domestic credit). They suggest that the causality is bi-directional. Their paper shows that the impact of FD on growth is through both investment and efficiency.

Kar and Pentecost (2000) study the relationship between finance and economic growth in Turkey. They use five measures of FD, the Granger-causality test and the VECM. Their results show that the causality depends on the FD measure. The direction of causality runs from FD to economic growth when the money-to-income ratio is used, but it runs from growth to finance when FD is proxied by bank deposits, private credit, and domestic credit ratios.

Bolbol et al. (2005) analyze the relationship between Egypt's financial structure and TFP during the 1974–2002 period. The result shows that bank-based indicators have a negative effect on TFP unless they are interacted with per capital income, while the market-based indicators have a positive impact on TFP. The paper suggests that diversifying the financial system by reforming the stock market could enhance TFP in Egypt.

In a multi-country time-series analysis, Abu-Bader and Abu-Qarn (2008) explore the causal relationship between FD and economic growth in Algeria, Egypt, Israel, Morocco, Syria, and Tunisia using a quad-variate VAR. They employ four different measures of FD and support the hypothesis that finance leads growth in five countries (Algeria, Egypt, Morocco, Syria, and Tunisia). The results suggest that financial reforms need to be continued to stimulate saving/investment and, therefore, long-run economic growth.

Abdelhafidh (2013) investigates the direction of causality between finance and growth in North African countries over the period 1970–2008. He distinguishes between domestic saving and foreign inflows and disaggregates the former into grants, FDI, portfolio investment and loans. Tri-variate VAR models have been used to disentangle the direct and indirect impact of FD on growth. The result indicates that economic growth Granger-causes domestic saving. In Algeria, grants as well as multilateral foreign loans and bonds Granger-cause growth. In Egypt, grants, FDI, long-term loans, short-term loans, bilateral loans, multilateral loans, and bank loans all Granger-cause growth with a reverse causality running from growth to foreign inflows. In Morocco and Tunisia, grants Granger-cause growth and it is growth that Granger-causes loans. These results suggest that policy implications should be tailored to each case.

Baliamoune-Lutz (2008) explores the short-run dynamics and long-run relationship between real output and FD in Algeria, Egypt, and Morocco for the period 1960–2001. He used co-integration and VECM models and four indicators of FD. The results indicate a stable long-run relationship between finance and income when the LIQ is used. In the short-run real output adjusts to equilibrium in all three countries when the LIQ is used. He suggests that finance leads growth when finance is measured by LIQ and the mixed results are linked to differences in banking regulation and supervision.

Boulila and Trabelsi (2004) investigate the relationship between finance and growth in the SEMC for different periods ranging from 1960 to 2002. They support the hypothesis that growth leads finance using co-integration techniques and Granger causality tests. They attribute these results to four factors: (i) financial

repression, (ii) lagging behind financial reforms, (iii) the high level of NPL and (iv) high information and transaction costs that hamper financial deepening.

Panel data studies on the SEMC use fixed-effect, dynamic GMM, panel co-integration, and panel causality analysis. Kar et al. (2011) explore the direction of causality between the region's finance and growth. Their approach, based on Seemingly Unrelated regressions and Wald tests, was applied to a panel of 15 countries for the period 1980–2007. The results suggest that the direction of causality depends on the FD measure and the country investigated.

Al-Awad and Harb (2005) investigate the relationship between finance and growth using the panel co-integration analysis on ten SEMC over the period 1969–2000. Their results suggest the existence of a long-run association between finance and growth. In the short-run, financial sector is unable to support economic growth due its weakness and the high degree of financial repression.

Ben Salem and Trabelsi (2012) explore the importance of FD as a determinant of growth in seven SEMC during the period 1970–2006 by applying Pedroni's panel co-integration analysis. They suggest the existence of a long-run relationship between finance and growth. Weak support is provided to the supply-side hypothesis. Indeed, economic growth leads FD. The authors say their findings are the result of macroeconomic imbalances, weak institutional development, and the weakness of the private sector in the SEMC.

Ben Naceur and Ghazouani (2007) conduct a study on 11 SEMC to assess the fundamental relationship between FD and economic growth over the period 1979–2003. The paper uses a dynamic GMM in a panel setting. The results indicate that banking sector development impacts negatively on economic growth after controlling for stock market development. The public sector dominates credit allocation, while financial regulatory and supervisory bodies are weak. The paper finds no impact of stock market development on growth and links this result to a high degree of financial repression and the small and illiquid capital market.

Ben Naceur et al. (2008) investigate the impact of stock market liberalization on economic growth in 11 SEMC over the 1979–2005 period using the dynamic GMM regression model. The results indicate that stock market liberalization has no effect on investment and growth.

Achy (2005) studies the impact of FD on private savings, on private investment, and on economic growth in five SEMC over the 1970–1999 period using panel GLS regressions. The coefficients of FD and financial liberalization are negative in the finance investment regressions, which implies a negative impact on private investment. The impact of FD is absent in the finance and growth regressions. These disappointing results may be attributed to the distortion of financial liberalization in favor of consumption.

Many papers argue that banking sector development in the SEMC does not contribute to growth. Some argue that it hampers growth. These results may be explained by financial repression, weak institutions, and the ineffective allocation of financial resources. The problem with these studies is that they focus on the size of the banking sector rather than on its quality.

Two papers have proposed measuring banking sector development by assessing the extent to which banks use their resources efficiently. Hasan et al. (2009) measure the development of the banking sector by calculating cost efficiency for each individual bank in a sample of 100 countries between 1996 and 2005. They find an independent and significant economic effect of bank cost efficiency on economic growth. The quality effect is stronger in developed economies, while quantity increases are also beneficial in developing economies.

Koetter and Wedow (2010) study the relationship between the quality of the financial system measured by cost efficiency and economic growth in 97 German economic planning regions. They suggest that the quality of the financial system contributes to economic growth while the quantity proxied by credit volume is not related to growth. The result indicates that economic growth requires better but not necessarily more credit.

The recent global financial crisis has raised concerns that some countries have oversized financial systems in proportion to the size of their economies. Arcand et al. (2012) show that in countries with a large financial sector the relationship between financial depth and economic growth disappears. Credit to the private sector above 80–100 % of GDP has a negative impact on economic growth. The authors suggest two possible reasons for this negative impact: (i) excessive credit growth can lead to economic volatility, increasing the probability of a financial crisis and (ii) high credit volume often leads to resource misallocation.

Cecchetti and Kharroubi (2012) examine the impact of the size and growth of the financial system on productivity and economic growth using a sample of 50 countries observed over the period 1980–2009. The paper finds that financial sector size has an inverted U-shaped effect on productivity growth. After a point, an increase in the size of the financial system contributes to TFP contraction. More finance is not always better.

14.3 Data Sources and Variables

We used the same dataset as in Chap. 11 (see Sect. 11.2.2 and Table 11.1). The dependent variable was economic growth defined as the log difference of real GDP per capita.

We uses five measures of FD: the amount of bank credit to the private sector (as % of GDP), share of bank deposits (as % of GDP), banks' meta-efficiency, stock market capitalization (as % of GDP), and stock market total value traded (as % of GDP), all the same as in Sect. 11.2.3. In addition, stock market turnover (value traded to market capitalization) was included to measure stock market's liquidity.

A number of explanatory variables are used as determinants of economic growth. Lagged GDP per capita (in constant USD) serves to control for economic convergence. Inflation, measured as the annual growth of the GDP deflator, was found to be an important determinant of economic growth. The index of financial openness, as developed by Chinn and Ito (2002, 2008), controls for the potential

offsetting impact of capital controls. The composite index (see Sect. 11.2.4 for details) assesses the impact of legal institutions and democratic governance on FD and economic growth. Lastly, capital flow variables, controlling for net FDI and portfolio investments are included.

14.4 Empirical Specification

We examined the impact of FD and a variety of macroeconomic, democratic, legal, and other institutional variables on economic growth in the SEMC. The econometric investigations with panel data, are specified as:

$$\Delta \text{Log real GDP per capita}_{i,t} = \alpha_0 + \gamma FD_{i,t} + \beta' X_{i,t} + \varepsilon_{i,t}, \tag{14.1}$$

where: FD are the financial development variables, X is a vector of control variables and s is the number of lag-years.

The estimations are based on FE panel regressions but other estimators were used such as FE with time dummies and random effects and GMM models. The FE give the most robust results. The results of the other specifications could be provided upon request.

The meta-frontier is derived as the envelope of the single-country frontiers by linear programming (see Chap. 12):

$$C_{it}^{k} = \exp\left(X_{it}\beta^{k}\right)\exp\left(v_{it}^{k} + u_{it}^{k}\right) \tag{14.2}$$

as the k-th country cost frontier, which depends on a matrix of independent variables X and a vector of country-specific parameters β^{k}. The meta-frontier is defined as the envelope of the k estimations of Eq. 14.2:

$$C_{it}^{*} = f(X_{it}\beta^{*}) = \exp(X_{it}\beta^{*}) \tag{14.3}$$

Equation 14.3 has the same functional form of Eq. 14.2 and a vector of parameters β^{*} satisfying:

$$X_{it}\beta^{*} \leq X_{it}\beta^{k} \tag{14.4}$$

This means that the meta-technology will always give the minimum possible cost among all the groups. Equations 14.3 and 14.4 are estimated by the deterministic technique of linear programming.

The distance of each bank from the meta-frontier is called meta-efficiency (EFF_{it}^{*}). It is defined as the product of its national cost efficiency (EFF_{it}) and the TGR, that is

$$EFF_{it}^{*} = TGR \times EFF_{it} \quad (14.5)$$

The TGR is a measure of the distance between the country frontier and the meta-frontier and it is ≤ 1 with higher values indicating closer proximity to the best available technology.

14.5 Empirical Results

Table 14.1 shows the growth equation with credit to the private sector over GDP, bank deposit to GDP, and banking sector efficiency as the FD variables. Columns 1 and 2 display growth estimates using credit to the private sector over GDP and its effect on institutional quality. Columns 3 and 4 show growth estimates with deposit to GDP as a measure of FD. Columns 5 and 6 contain the growth equation using banking sector efficiency as the FD variable.

Table 14.1 shows that the size of the banking sector measured by credit to the private sector is negatively and significantly associated with economic growth, even if we include credit to the private sector interacted with the quality of institutions. An increase in credit to the private sector in the SEMC does not contribute to growth. This could be explained by the region's high level of financial repression and the presence of state-owned banks, which lack governance and are unable to select growth-enhancing projects. Poor regulation and supervision hamper good allocation of credit.

Policymakers in the SEMC should focus on improving credit allocation in the banking sector and its quality rather than increasing the volume of credit. Other drivers of growth are the large volumes of FDI, high domestic investment rate, institution quality, low inflation, and trade openness.

The results in columns 3 and 4 confirm the results in the first two columns. An increase in banks' deposits does not contribute to growth. Most important is how these resources are used and how effectively they are allocated to finance projects. A country that is able to attract FDI, spur domestic investment, keep inflation under control, enhance the quality of its institutions, and open itself to trade can easily improve its growth prospects (see also Chap. 1).

If we look to the quality of the banking sector by using meta-efficiency in columns 5 and 6, the relationship with growth becomes positive but insignificant, meaning that improving the efficiency of the banking sector is not sufficient to enhance growth.

Initial GDP has a persistently and significantly negative impact on growth, which confirms a catching-up hypothesis.

Table 14.2 presents growth regressions using stock market variables: stock market capitalization (columns 1 and 2), stock market turnover ratio (columns 3 and 4), and value traded (columns 5 and 6).

Table 14.1 Bank development and growth results (Authors' estimation)

Variables	(1) Credit private sector	(2) Credit private sector	(3) Bank deposit	(4) Bank deposit	(5) Bank efficiency	(6) Bank efficiency
L.lngdpcap	−6.980***	−6.733***	−9.095***	−8.458***	−10.46**	−10.45**
	(1.722)	(1.734)	(1.702)	(1.728)	(4.306)	(4.268)
Bdev	−0.0316***	−0.0853*	−0.0189	−0.129**	0.163	0.343
	(0.00954)	(0.0464)	(0.0135)	(0.0598)	(2.840)	(17.89)
bdev* i_ircavg	–	0.00801	–	0.0165*	–	−0.0302
	–	(0.00678)	–	(0.00870)	–	(2.971)
i_ircavg	1.620***	1.271***	1.477***	0.577	0.255	0.275
	(0.293)	(0.416)	(0.293)	(0.558)	(0.424)	(2.148)
c_fdi_net_gdp	0.149**	0.156***	0.170***	0.179***	0.0584	0.0585
	(0.0581)	(0.0583)	(0.0592)	(0.0592)	(0.0828)	(0.0842)
c_portinv_net_gdp	0.0177	0.0214	0.00988	0.0143	−0.00603	−0.00603
	(0.0266)	(0.0268)	(0.0277)	(0.0277)	(0.0185)	(0.0186)
c_inv_gdp	0.185***	0.187***	0.167***	0.168***	0.289***	0.290**
	(0.0467)	(0.0467)	(0.0477)	(0.0475)	(0.0965)	(0.0987)
c_infl	−0.0204**	−0.0220**	−0.0231**	−0.0257***	−0.0175	−0.0175
	(0.00954)	(0.00962)	(0.00976)	(0.00982)	(0.0124)	(0.0124)
c_trade_gdp	0.0405**	0.0401**	0.0509***	0.0599***	0.0812**	0.0812**
	(0.0191)	(0.0191)	(0.0193)	(0.0198)	(0.0353)	(0.0379)
f_openness	0.434**	0.410**	0.388**	0.282	0.155	0.155
	(0.172)	(0.173)	(0.173)	(0.182)	(0.381)	(0.385)
Constant	47.18***	47.35***	64.96***	64.86***	77.35**	77.21**
	(13.90)	(13.89)	(13.61)	(13.56)	(36.28)	(35.60)
Observations	357	357	362	362	207	207
R-squared	0.256	0.260	0.228	0.236	0.188	0.188

(continued)

Table 14.1 (continued)

Variables	(1) Credit private sector	(2) Credit private sector	(3) Bank deposit	(4) Bank deposit	(5) Bank efficiency	(6) Bank efficiency
Number of id	16	16	16	16	16	16
N	357	357	362	362	207	207
r2_a	0.203	0.204	0.173	0.179	0.151	0.147
r2_w	0.256	0.260	0.228	0.236	0.188	0.188
r2_b	0.0119	0.0102	0.0114	0.00610	0.126	0.126
r2_o	0.00526	0.00571	0.00245	0.00342	0.0181	0.0181
F	12.72	11.60	11.05	10.38	10.85	10.08
P	0	0	0	0	4.27e-05	5.51e-05

Note: Standard errors in parentheses; ***p < 0.01, **p < 0.05, *p < 0.1

Table 14.2 Stock markets indicators and growth results (Authors' estimation)

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Market capitalization	Market capitalization	Market turnover	Market turnover	Value traded	Value traded
L.lngdpcap	−8.360***	−8.820***	−7.646***	−7.698***	−7.084***	−7.185***
	(1.789)	(1.809)	(1.671)	(1.647)	(1.729)	(1.732)
Smdev	0.0113	0.0929*	−0.00575	0.0642***	−0.00972*	0.0602
	(0.00772)	(0.0534)	(0.00349)	(0.0236)	(0.00508)	(0.0719)
smdev*i_ircavg	–	−0.0135*	–	−0.0113***	–	−0.0108
	–	(0.00874)	–	(0.00378)	–	(0.0111)
i_ircavg	1.432***	1.849***	1.626***	1.936***	1.598***	1.685***
	(0.357)	(0.447)	(0.342)	(0.353)	(0.344)	(0.356)
c_fdi_net_gdp	0.160**	0.154**	0.154***	0.142**	0.166***	0.150**
	(0.0622)	(0.0622)	(0.0584)	(0.0577)	(0.0580)	(0.0604)
c_portinv_net_gdp	0.0137	0.0112	0.0112	0.0162	0.0180	0.0171
	(0.0417)	(0.0416)	(0.0274)	(0.0271)	(0.0288)	(0.0288)
c_inv_gdp	0.289***	0.302***	0.236***	0.258***	0.240***	0.254***
	(0.0584)	(0.0588)	(0.0562)	(0.0559)	(0.0581)	(0.0598)
c_infl	−0.0464***	−0.0442**	−0.0442**	−0.0562***	−0.0463***	−0.0447***
	(0.0171)	(0.0171)	(0.0171)	(0.0174)	(0.0170)	(0.0171)
c_trade_gdp	−0.00577	−0.00795	0.0158	0.0102	0.0168	0.0121
	(0.0239)	(0.0239)	(0.0241)	(0.0238)	(0.0242)	(0.0247)
f_openness	0.182	0.217	0.255	0.320*	0.313	0.317*
	(0.203)	(0.203)	(0.184)	(0.183)	(0.192)	(0.192)
Constant	59.78***	61.19***	52.88***	51.44***	47.96***	48.31***
	(15.26)	(15.25)	(13.88)	(13.69)	(14.55)	(14.56)
Observations	285	285	294	294	290	290
R-squared	0.257	0.264	0.239	0.263	0.234	0.237

(continued)

Table 14.2 (continued)

Variables	(1) Market capitalization	(2) Market capitalization	(3) Market turnover	(4) Market turnover	(5) Value traded	(6) Value traded
Number of id	14	14	14	14	14	14
N	285	285	294	294	290	290
r2_a	0.195	0.199	0.177	0.200	0.171	0.171
r2_w	0.257	0.264	0.239	0.263	0.234	0.237
r2_b	0.126	0.120	0.126	0.125	0.0949	0.0930
r2_o	0.0263	0.0249	0.0262	0.0295	0.0246	0.0247
F	10.08	9.358	9.432	9.636	9.067	8.254
P	0	0	0	0	0	0

Note: Standard errors in parentheses; ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

The size of the stock market measured by market capitalization has no effect on growth in column 1. By introducing the interaction of market capitalization and the quality of the institution, the impact of stock market capitalization becomes positive and significant, especially in countries where the institutions are of a lower quality. This result is even stronger when we use stock market turnover. The improvement of the liquidity of the stock market in a country with low quality institutions contributes positively and significantly to growth. Good institutions, a higher volume of domestic investment and FDI, and low inflation are ingredients for economic growth. Initial GDP has a persistently and significantly negative impact on growth, which implies that less developed countries grow at a higher rate than developed ones.

14.6 Conclusion

We tested different econometric specifications of the relationship between the financial sector and economic growth in the SEMC over the 1984–2010 period, but displayed only the robust ones. We included several measures of FD to account for both quantity and quality effects and to encompass the entire financial system.

The results indicate that credit to the private sector and bank deposits are, in many specifications, negatively associated with growth. There are problems with credit allocation as well as weak financial regulation and supervision in the SEMC. Stock market size and liquidity play a role in growth, especially when the quality of institutions is low. Investment, whether domestic or in the form of FDI, contribute to economic growth. Better institutions and low inflation are key growth factors. Initial GDP has a persistently and significantly negative impact on growth. Poorer countries are catching up to richer countries.

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Chapter 15
Financial Sector Development Scenarios

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15.1 Introduction

This chapter presents future scenarios of the financial system development in the SEMC. We first compare the region's financial systems with the European ones to determine the gaps that need to be closed in order for the SEMC to converge with the best international practices. Based on the literature on FD determinants, we make a projection of the size of bank credit to the private sector, stock market's value traded (both as % of GDP), and the efficiency of the SEMC banking sector. Our empirical sample is composed of both SEMC and EU countries over the period 1960–2009.[1]

Our results indicate that if SEMC adopted the best EU practices, their bank credit to private sector would reach 108 % of GDP, their stock market turnover would reach 121 % of GDP and banks' meta-efficiency would be 78 %. These levels are much higher than the present ones but they are still lower than those of the best performers in Europe. More specifically, we find that improving the quality of institutions, increasing per capita GDP, further opening capital accounts and lowering inflation are necessary steps before the financial systems in the region can converge with those of Europe.

[1] Due to data limitations, in some cases only a subset of these countries is included.

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Section 15.2 presents a brief literature overview on FD determinants. Section 15.3 benchmarks FD in the SEMC with that achieved in Europe. Section 15.4 discusses the data, models, and scenarios. Section 15.5 concludes.

15.2 Determinants of Financial Sector Development

Summarizing the literature on the growth-finance nexus, Levine (2005) reaches the conclusion that both bank and stock market development contribute to economic growth. However, he notes that the determinants of FD remain scarcely investigated and imperfectly understood. In turn, Huang (2010) suggests that institutions, macroeconomics, and geography are the principal factors explaining the difference in FD between countries. He shows that protecting property rights (La Porta et al. 1997, 1998), enforcing contracts, and maintaining good accounting standards (Mayer and Sussman 2001) are the key factors contributing to financial sector success. In the same vein, Rajan and Zingales (2003) argue, based on the interest group theory, that industrial incumbents could block the development of a local financial sector under a scenario of low trade openness. They also suggest that trade liberalization without financial openness is unlikely to result in greater FD.

The empirical literature on FD investigates why some countries are more financially developed than others. Our objective is to find in these studies which factors have been the most frequent contributors to FD. We exclude legal, cultural and geographic variables, since they cannot be changed (used for forecasting) and are considered inherited. We also eliminate studies with unclear and contradictory results.

Table 15.1 Literature on determinants of financial sector development (Authors' compilation)

Variable name	Type of variable	Number of studies	Sign
Liquid liabilities	Dependent	3	–
Liquid liabilities	Independent	2	Positive
Credit to private sector	Dependent	11	–
Credit to private sector	Independent	3	Positive
Bank deposits	Dependent	2	–
Stock market capitalization	Dependent	14	–
Value traded	Dependent	4	–
Value traded	Independent	3	Positive
GDP per capita	Independent	11	Positive
Inflation	Independent	6	Negative
Trade openness	Independent	9	Positive
Financial openness	Independent	5	Positive
Savings rate	Independent	3	Positive
Investment rate	Independent	1	Positive
Remittances	Independent	4	Positive
Institutional quality	Independent	3	Positive
Political risk	Independent	4	Positive

Table 15.1 suggests that stock market capitalization, credit to the private sector and value traded as a % of GDP are the most frequently used dependent variables in the studies on the determinants of FD. Thus, these variables will be used in benchmarking the SEMC financial sector against Europe's.

The efficiency of the banking sector will be added to measure the quality of the banking industry. On the other hand, per capita GDP, inflation, and openness (trade and financial) are the most frequently cited determinants of FD. With less frequency, savings, investment, remittances and institutions are also found to contribute to FD. Most of these determinants will be used to project measures needed by the SEMC to reach the level of FD in the benchmarked regions.

15.3 Financial Sector Benchmarking in SEMC

Figure 15.1 suggests that financial sector performance in the SEMC is low by international standards, except for stock market capitalization, which increased rapidly from 30 % of GDP in 2003 to 120 % in 2009. Bank credit to the private sector grew slowly, approaching 60 % of GDP in 2009. Bank meta-efficiency stagnated at the level of 60 %, which can be considered low compared to EU standards.

Substantial reforms to converge to international best practices, privatization programs, incentives to list on the stock exchange and further opening to foreign investors have contributed to the increase of the stock market size in the region. However, its liquidity remains low at just above 40 % of GDP in 2010, despite a steep increase in 2004 and 2005.

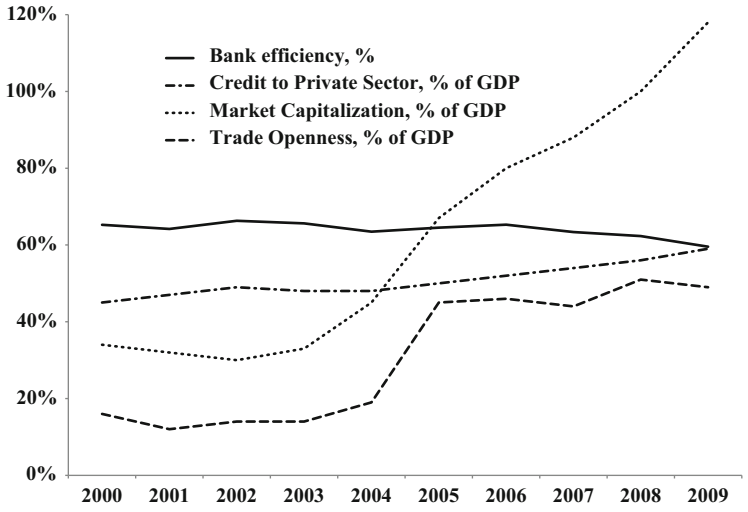

Fig. 15.1 SEMC: basic indicators related to FD (Authors' calculations based on Bankscope database and Beck et al. 2000)

Table 15.2 indicates that bank meta-efficiency in the SEMC is lower than in Europe. The largest gap is between the SEMC and Northern Europe and the lowest gap is between the SEMC and EU-MED. However, efficiency among individual countries varies greatly: Israeli banks perform better than European banks on average, and Tunisian and Morocco banks are converging to this benchmark. However, all of the other SEMC have low and declining bank efficiency.

Table 15.3 suggests that bank credit to the private sector as a % of GDP in the SEMC is growing very slowly and remains below the EU level (after being overtaken by the CEE in 2007). Almost all SEMC lag behind Europe, which calls for more action to increase the depth of the banking sector in the region. However, Morocco and Jordan seem to be catching up thanks to substantial reforms in bank regulation, creditor rights protection and financial openness.

Table 15.4 shows that, in contrast to bank development, stock market capitalization in the SEMC is higher than in all of the EU sub-regions. The stock market capitalization in the region has been catching up since 2004. However, the individual country data display a more nuanced picture, with Tunisia and Turkey lagging behind, and Morocco, Israel and Jordan performing extremely well.

Table 15.5 reports that stock market liquidity in the SEMC, measured by the value traded in % of GDP, is extremely low as compared to other regions except for CEE. The gap with EU-MED countries (average level of SEMC minus average level of EU-MED) is the highest, reaching −140 % points of GDP in 2009. Furthermore, this gap is worsening vis-à-vis all of the EU sub-regions except CEE. Looking at the individual SEMC data, stock market liquidity in every country is lower than in Europe, with the lowest gap in Israel and the highest in Tunisia and Turkey.

15.4 Financial Sector Development Scenarios

15.4.1 Data

Table 15.6 presents statistical sources and Table 15.7 presents country and time coverage. For banking development, the dataset includes all SEMC except Libya and Palestine. For the capital market development, the dataset covers the same countries except Algeria and Syria.

15.4.2 Model

To determine FD variables for the future scenarios, we will look at the FD gaps calculated as the differences between the SEMC and EU averages of indicators presented in Tables 15.2, 15.3, 15.4, and 15.5. The EU sub-regions appear to be a good benchmark for banking sector development and the liquidity of the stock

Table 15.2 Meta-efficiency of SEMC vs. the EU, % (Authors' estimation based on Beck et al. 2000)

Year	EU-North	CEE	EU-MED	SEMC	Algeria	Egypt	Israel	Jordan	Lebanon	Morocco	Tunisia
2000	85	78	72	65	43	71	58	76	78	62	71
2001	90	78	71	64	46	73	47	74	77	63	70
2002	90	81	70	66	61	74	56	66	74	61	71
2003	84	83	70	66	57	73	73	56	69	60	72
2004	83	84	71	63	50	68	77	47	68	59	75
2005	86	84	73	65	42	69	79	58	63	66	75
2006	88	84	73	65	47	61	70	66	67	68	78
2007	86	85	70	63	39	55	68	66	67	75	75
2008	81	83	62	62	34	52	81	61	66	72	71
2009	83	84	67	60	29	46	81	58	58	75	69

Table 15.3 Credit to private sector, % of GDP: SEMC vs. Europe (Authors' estimation based on Bankscope and Beck et al. 2000)

Year	EU-North	CEE	EU-MED	SEMC	Algeria	Egypt	Israel	Jordan	Morocco	Tunisia	Turkey
2000	92	30	94	50	5	50	73	70	49	53	14
2001	103	31	100	53	7	52	81	72	47	57	14
2002	104	31	104	55	10	53	88	72	48	60	13
2003	107	33	105	54	11	52	88	69	47	58	13
2004	110	37	107	53	10	51	84	69	48	58	14
2005	117	42	111	55	10	50	85	77	50	60	18
2006	124	49	119	57	11	47	87	84	53	59	22
2007	133	56	129	58	12	44	87	89	61	58	26
2008	142	65	140	60	13	41	87	94	70	57	31
2009	154	76	153	63	13	38	87	101	83	56	37

Table 15.4 Stock market capitalization, % of GDP: SEMC vs. Europe (Authors' estimation based on Bankscope and Beck et al. 2000)

Year	EU-North	CEE	EU-MED	SEMC	Egypt	Israel	Jordan	Lebanon	Morocco	Tunisia	Turkey
2000	110	17	77	34	31	53	64	10	33	14	34
2001	93	14	64	33	27	57	63	8	27	13	30
2002	67	13	50	32	29	53	70	7	22	11	18
2003	59	15	44	35	32	53	89	7	22	9	17
2004	65	19	49	49	42	70	129	9	34	9	21
2005	73	22	55	74	66	83	223	17	45	10	27
2006	84	25	67	88	81	104	242	29	59	12	31
2007	88	29	82	97	91	127	225	40	86	14	34
2008	93	34	86	111	102	158	209	55	124	17	38
2009	100	44	99	131	114	198	193	78	184	20	42

Table 15.5 Value traded, % of GDP: SEMC vs. Europe (Authors' estimation based on Beck et al. 2000)

Year	EU-North	CEE	EU-MED	SEMC	Egypt	Israel	Jordan	Lebanon	Morocco	Tunisia	Turkey
2000	54	8	77	7	11	19	5	1	3	3	67
2001	68	4	50	7	4	25	10	0	3	2	40
2002	82	4	42	12	3	51	14	1	1	1	30
2003	63	5	35	11	4	36	26	1	1	1	33
2004	76	7	39	16	7	38	47	1	3	1	38
2005	91	13	46	46	28	46	189	4	7	2	42
2006	87	11	63	47	44	62	142	9	21	2	43
2007	125	15	97	44	41	70	110	4	36	2	46
2008	122	23	136	51	39	80	83			2	50
2009	148	30	185	48	37	90	63			2	54

Table 15.6 Descriptive statistics (From the Bankscope database and WB WDI)

Variable	Source	N	Mean	St. dev.	Min	Max
Credit to private sector (% GDP)	Beck et al. (2000)	1,240	54.53	37.71	3.57	243.64
Bank efficiency (in %)	Bankscope	438	68.92	11.03	29.31	92.41
Value traded (% GDP)	Beck et al. (2000)	652	33.98	58.88	0.00	518.82
Log real GDP per capita (USD)	WDI	1,519	8.61	1.18	6.07	11.68
Trade openness (% GDP)	WDI	1,517	78.74	43.92	0.00	319.55
Financial openness	Chinn-Ito (2008)	1,212	0.42	1.65	−1.84	2.48
Inflation (% growth in deflator)	WDI	1,442	12.14	41.59	−32	1,058
Savings rate (% GDP)	WDI	1,419	20.48	11.03	−64.14	67.81
Institution quality	PRS	862	5.95	1.13	0.78	8.09

market but not for stock market size (SEMC outperform them). This result is mainly driven by the listing of the large financial institutions on the stock market in the SEMC. For scenario building purposes, we will exclude them from the stock market capitalization. For stock market liquidity, Northern EU and EURO-MED are considered to be good benchmarks for the SEMC. Overall, our scenarios will include credit to the private sector, stock market turnover and bank meta-efficiency indicators.

For each financial sector, we will estimate an equation including explanatory variables we spotted in Table 15.1. The model for assessing the determinants of FD is as follows:

$$\begin{aligned} FD_{i,t} = {} & \beta_0 + \beta_1 Inflation_{i,t} + \beta_2 Savings\,\text{Rate}_{i,t} + \beta_3 Trade\,\text{Openness}_{i,t} + \\ & \beta_4 Financial\,\text{Openness}_{i,t} + \beta_5 \text{Log real GDP per capita}_{i,t} + \\ & \beta_6 Institution\,\text{Quality}_{i,t} + \varepsilon_{i,t} \end{aligned} \tag{15.1}$$

where *FD* includes the FD variables (bank credit to the private sector in % of GDP, meta-efficiency (see Chap. 12), and stock market value traded in % of GDP). Explanatory variables include: inflation measured in terms of GDP deflator, national saving as a % of GDP, trade openness as the sum of exports and imports in % of GDP, financial openness as the Chinn and Ito (2008) financial liberalization index, Log real GDP per capita, and the index of institutional quality measured as the average of four ICRG indicators, published by the PRS Group (bureaucratic quality, control of corruption, index of democratization and law and order – see http://www.prsgroup.com/ICRG_Methodology.aspx). The estimations are based on OLS regressions.

For the next step, we use the coefficient for each explanatory variable derived from the above estimations and multiply it by the level of benchmark value to

Table 15.7 Sample composition (Authors' compilation)

Region	Countries	Observation period
SEMC	Algeria	1975–2009
	Egypt	1960–2009
	Israel	1975–2009
	Lebanon	1977–2009
	Morocco	1960–2009
	Syria	1960–2009
	Tunisia	1988–2009
	Turkey	1981–2009
CEE	Bulgaria	1992–2009
	Czech Republic	1994–2009
	Estonia	1993–2009
	Hungary	1983–2009
	Latvia	1994–2009
	Poland	1981–2009
	Slovakia	1994–2009
	Slovenia	1992–2009
Northern EU	Austria	1960–2009
	Belgium	1960–2009
	Denmark	1960–2009
	Finland	1961–2009
	Germany	1960–2009
	Ireland	1960–2009
	Netherland	1960–2009
	Sweden	1960–2009
	UK	1960–2009
EURO-MED	Cyprus	1992–2009
	France	1960–2009
	Greece	1960–2009
	Italy	1964–2009
	Malta	1961–2009
	Portugal	1969–2009
	Spain	1973–2009

project the potential level of FD if the country adopts the best international practices. We also use the best convergence scenario in which SEMC indices will be replaced by the benchmark values only if this contributes to FD. We use the average of the last 3 years to avoid cyclical effects.

15.4.3 Scenarios

The results obtained from the regression on bank credit to the private sector (Table 15.8) show that lower inflation contributes to higher credit to the private

Table 15.8 The determinants of FD in Europe and SEMC

Regressions	(1)	(2)	(3)
Variables	Credit to private sector	Bank efficiency	Value traded
Inflation	−0.0263*	−0.00664**	0.374**
	(0.0133)	(0.00183)	(0.102)
Savings rate	−0.868**	−0.325**	−0.803*
	(0.113)	(0.0659)	(0.318)
Trade openness	0.114**	0.0341**	−0.106
	(0.0311)	(0.0130)	(0.0604)
Financial openness	2.582**	−0.854	7.398**
	(0.993)	(0.439)	(1.218)
Log real GDP per capita	14.58**	1.782*	10.03**
	(1.416)	(0.815)	(2.439)
Institutional quality	9.664**	3.269**	18.82**
	(1.522)	(1.026)	(3.494)
Constant	−119.7**	36.78**	−160.6**
	(12.67)	(5.476)	(27.63)
Observations	684	390	576
Adj. R2	0.435	0.123	0.218
F	98.85	19.33	23.04
P	0	0	0

Note: * and ** stand for significance at 5 %, and 1 %, respectively

sector by reducing the uncertainties related to the investment decision. Besides, better institutions and a higher per capita GDP help increase the depth of the financial system. Increasing trade and financial openness are also key drivers for higher bank credit to the private sector. However, a higher level of saving is detrimental to private credit since the availability of saving reduces the demand for bank financing.

The regression on meta-efficiency in Table 15.8 indicates that trade openness, the protection of creditor and investor rights, a well-functioning legal system, and a stable government (quality of institutions) are key contributors to bank efficiency as well as lower inflation and higher GDP per capita.

The regression on stock market value traded shows that more financial openness through removing capital account restrictions can improve the liquidity of the stock market. High-quality institutions are fundamental for improving trading in the stock exchange. Inflation also seems to be beneficial since stocks are good investment vehicles to protect against inflation.

Table 15.9 shows that bank credit to the private sector is expected to reach 108 % of GDP if the SEMC adopt the same best practices as the North-EU benchmark region and 73.70 % if CEE practices are used as the benchmark. This would be much higher than 2009 levels but still lower than the average EU level in the same period, which was 87 %. A level of bank credit to the private sector to GDP of 108 % can be reached by the SEMC if they increase their level of saving and the

Table 15.9 Bank credit to private sector, % of GDP, 2009, convergence scenarios (Authors' estimation)

Scenario	SEMCs	EU	NORTH-EU	EURO-MED	CEE
Convergence to benchmark	59.26	86.99	101.89	85.38	73.70
Convergence to benchmark (best factors)	59.26	88.30	108.06	85.26	74.44

Table 15.10 Bank credit to private sector, best factors by region (Authors' estimation)

Variable	EU	NORTH-EU	EURO-MED	CEE
Inflation	Yes	Yes	Yes	Yes
Savings rate	No	No	Yes	No
Trade openness	Yes	Yes	Yes	Yes
Financial openness	Yes	Yes	Yes	Yes
Log real GDP per capita	Yes	Yes	Yes	Yes
Institutional quality	Yes	Yes	Yes	Yes

Table 15.11 Bank meta-efficiency, %, 2009, convergence scenarios (Authors' estimation)

Scenario	SEMCs 2009	EU	NORTH-EU	EURO-MED	CEE
Convergence to benchmark	59.6	70.6	72.6	70.8	68.4
Convergence to benchmark (best factors)	59.6	73.0	77.1	72.7	70.3

quality of their institutions (better investor protection, less corruption and less bureaucracy), increase their GDP per capita, and reduce inflation rates. Looking at each variable that needs to be improved, we find that increasing wealth is a key contributor for developing the size of the banking sector, followed by better institutions and a more open capital account (making sure that banking regulations are efficient) (Table 15.10).

Table 15.11 shows that bank efficiency would reach 77 % in the SEMC if they adopted the best practices of the Northern EU and 68 % if the CEE is used as the benchmark. All the scenarios are higher than the 2009 SEMC meta-efficiency level (59 %) but lower than the 83 % of the Northern EU. A possible conclusion is that improving bank efficiency is a more complex process than simply increasing credit to the private sector. Besides, the lower R2 of the efficiency regression as compared to that of credit to the private sector means that additional determinants of bank efficiency are not captured by the model. However, improvement in the quality of institutions, higher income per capita, more trade openness and lower inflation are key ingredients in reinforcing efficiency in the SEMC. Comparing the variables to be improved, we find that the quality of institutions and wealth are by far the most important factors for enhancing banking efficiency (Table 15.12).

Table 15.12 Bank meta-efficiency, best factor by region (Authors' estimation)

Variable	EU	NORTH-EU	EURO-MED	CEE
Inflation	Yes	Yes	Yes	No
Savings rate	No	No	Yes	No
Trade openness	Yes	Yes	Yes	Yes
Financial openness	No	No	No	No
Log real GDP per capita	Yes	Yes	Yes	Yes
Institutional quality	Yes	Yes	Yes	Yes

Table 15.13 Stock market value traded, % of GDP, 2009, convergence scenarios (Authors' estimation)

Scenarios	SEMC	EU	NORTH-EU	EURO-MED	CEE
Convergence to benchmark	49.22 %	51.9 %	66.7 %	57.5 %	31.3 %
Convergence to benchmark (best factors)	49.22 %	58.3 %	80.1 %	59.5 %	38.0 %

Table 15.14 Stock market value traded, best factors by region (Authors' estimation)

Variable	EU	NORTH-EU	EURO-MED	CEE
Inflation	No	No	No	No
Savings rate	No	No	Yes	No
Trade openness	No	No	Yes	Yes
Financial openness	Yes	Yes	Yes	Yes
Log real GDP per capita	Yes	Yes	Yes	Yes
Institutional quality	Yes	Yes	Yes	Yes

Table 15.13 shows that stock market turnover would reach 80 % of GDP if the SEMC adopted the best practices of the Northern EU but only 38 % of GDP if they adopted the best practices of the CEE. This level of stock market liquidity would be much higher than the 2009 SEMC level but lower than the EU average of 58 %.

The SEMC cannot reach the level of stock market liquidity of the EU countries because of other factors that are not captured by the model and are not measurable. However, our model has spotted the variables that can significantly contribute to improving liquidity such as higher GDP per capita and open capital accounts (Table 15.14).

15.4.4 Policies of Convergence

We will now analyze how much the determinants of FD would improve if we were to take the EU as the benchmark (Table 15.15). Inflation would be reduced by 3.5 %

Table 15.15 Gap in determinants: SEMC vs. Europe (Authors' own calculation)

Variable	EU	NORTH-EU	EURO-MED	CEE
Inflation	3.52	4.72	4.17	1.67
Savings rate	−1.51	−7.18	3.77	−1.13
Trade openness	−33.67	−51.71	−3.05	−46.25
Financial openness	−2.15	−2.34	−2.25	−1.85
Log real GDP per capita	−21,783	−45,334	−11,891	−8,123
Institutional quality	−1.24	−1.85	−1.26	−0.61
Bureaucratic index	−1.19	−1.98	−1.05	−0.53
Investor protection index	−2.96	−3.32	−3.14	−2.42
Rule of law index	−0.59	−1.45	−0.46	0.13
Democratic index	−2.29	−2.41	−2.40	−2.06
Corruption index	−1.50	−2.76	−1.36	−0.38

points and income per capita would increase by USD 22,000. Capital account openness needs to be improved by 2.5 points using the Chinn and Ito (2008) index. Institutional quality should also be improved quite substantially. In particular, investor protection needs to be strengthened by at least three notches in the IRCG rate scale (1–5), the democracy index by two grades, corruption by one and half grades, the bureaucracy index by one grade and the rule of law by half a grade.

More broadly, referring to the World Bank (2011) study on financial sector development in the SEMC, we recommend strengthening the financial infrastructure through an upgrade of the credit information system, the collateral regime and the insolvency regime. These reforms should provide better protection for lenders and investors and contribute to banking and stock market development. Besides, developing the money market, improving the liquidity of the government bond market, developing the investor base, and opening the stock market to foreign investors should improve its liquidity. Finally, reinforcing competition in the banking sector through privatization, foreign entry, and regulation limiting loan concentration should push for more efficient banks.

15.5 Conclusions

In this chapter the future scenarios of the financial sector in the SEMC have been developed. As a first step, we reviewed the literature on financial sector determinants to find out which factors can explain why some countries' financial systems are more developed than others. Then we compared levels of FD in the SEMC with the EU and found that the former lag behind the latter in terms of the depth and efficiency of their banking sectors and stock market liquidity, but they are in a better position if we measure their stock market capitalization.

On this basis, we developed a model that we tested on a large sample of SEMC and EU countries to explain three variables of FD: bank credit to the private sector

as a share of GDP, bank efficiency, and stock market liquidity. The estimation of this model provided us with coefficients for each variable, which were used to determine scenarios of FD by interacting them with the average levels reached by the benchmark regions during the last 3 years of statistical observation.

The results show that if the SEMC reach the EU benchmark levels of FD determinants, bank credit to the private sector will reach 108 % of GDP, stock market turnover will reach 121 % of GDP and bank meta-efficiency will reach 78 %. We also find that improving institutions, achieving higher per capita income, further opening their capital accounts, and lowering inflation are four key factors that will help the SEMC financial systems converge with European ones.

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Part IV
Social Development

Chapter 16
Education Systems and Their Impact on the Labor Market

Alia el Mahdi and Ola el Khawaga

16.1 Introduction

Despite cross-country differences, the SEMC share a common feature, namely that when measured by the UNDP HDI of 2010,[1] which has been calculated for such countries as Israel, Tunis, Jordan, Turkey, Egypt, Syria and Morocco, their inequality-adjusted values and ranks drop significantly in comparison with their unadjusted HDI values and ranks. The main reasons for this significant drop invariably relate to educational achievement. Therefore, education remains a problem in all SEMC. Regardless of their average performance, there is a high degree of inequality among youth in terms of their share of enrollment in and benefits from the education systems. Children coming from relatively better off families seem to benefit more from the current, mostly free education systems, whereas a relatively higher percentage of children coming from poor families tend to become drop-outs, repeaters or do not join the education system from the start. Thus the fruits of the education policies seem to be reaped more by children from middle-/high-income households than those from poorer households. This bias negatively affects the opportunities of the poor when they seek jobs. Their lack of skills and knowledge reduces their employment chances and their wages.

The remaining part of this chapter is organized as follows. Section 16.2 provides an overview of the education systems in the region. Section 16.3 deals with the main inputs to the system. Section 16.4 analyzes the access to and equity of the educational systems. Section 16.5 evaluates their efficiency. Section 16.6 discusses outcomes and quality, and finally, Sect. 16.7 presents the main conclusions.

[1] UNDP (2010) was the first HDR to include the inequality estimates and indicators.

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16.2 Overview of the Education Systems

16.2.1 General Observations

In the last few decades, the SEMC have achieved a lot of progress in terms of accumulated human capital. Nonetheless, the education systems in the region still suffer from two main obstacles. First, efforts have been made to expand the education systems while public accountability has been given limited focus, that is, governments have worked on increasing the numbers of schools, teachers and students without giving enough attention to educational quality and efficiency. Second, there is a mismatch between the education system outcomes and labor market demand. Labor markets have failed to absorb all the graduates, causing high unemployment rates in most of the SEMC.

16.2.2 Structure of the School System

Countries that were subject to French colonization, such as Algeria and Morocco, have witnessed several transformations in their education systems. Education has changed from being restricted to the elite to being available to all citizens.

In Algeria, the Arabic language has replaced French as the language of instruction at the primary and secondary levels, but French has remained the instruction language in most post-secondary institutions. The case is different in Morocco, where the government has introduced two tracks: a modern track with French used in instruction and an original track based on Koranic education.

Public schools in Egypt provide education in Arabic or English, while the private sector offers education in Arabic, English, French and German. In Lebanon, although the Arabic language is taught in all schools, the school system uses French or English (or both) as the basic language. Conversely, in Syria, Arabic is the basic language, while English and French are also taught.

The 11 SEMC have adopted the 6-3-3 model with a few exceptions (such as Jordan and Palestine, where basic compulsory education lasts for 10 years followed by two optional years of secondary education). Students are enrolled at the primary level for 6 years, then move to the intermediary or lower secondary level for 3 years. These 9 years are considered basic education, and are compulsory and provided for free in most countries. The upper secondary level lasts for 3 years. Successful students progress to university education for 4–5 years.

16.3 Inputs into the Education Systems

16.3.1 Growth Rates of Enrollments by Education Level and Gender

During the decade of the 2000s, the number of students enrolled in secondary and tertiary education in the SEMC has grown (see Table 16.1). The highest growth rate was achieved at the secondary level in Syria (12.6 %) and the tertiary level in Jordan (9 %). As for the primary level, the enrollment growth rates vary between negative and positive rates. The enrollment of Egyptian students grew by 3.5 %, while enrollments in Tunisia decreased by 3.5 %. Similar trends are shown in Table 16.2 for female enrollments among the different education levels.

The growth rates achieved in female enrollments are higher for all the countries compared with total enrollments, except in Israel in secondary education and Libya at the primary and secondary levels. This indicates that even if female enrollments are lower than male enrollments in some countries, this gender gap is diminishing over time, with female enrollments growing faster than male enrollments.

Table 16.1 Growth rate of total enrollments by education level, average 2000–2008, in % (From UNESCO)

Country	Primary level	Secondary level	Tertiary level
Algeria	−2.5	3.1	8.7
Egypt	3.5	0.9	3.0
Israel	1.7	3.4	0.6
Jordan	1.1	2.4	7.9
Lebanon	−0.5	0.8	6.3
Libya	−0.8	0.6	9.0
Morocco	0.7	5.0	4.9
Syria	−1.2	12.6	
Tunisia	−3.5	1.0	8.1
Turkey	0.4	2.3	6.1

Table 16.2 Growth rate of female enrollments by education level, average 2000–2008, in % (UNESCO)

Country	Primary level	Secondary level	Tertiary level
Algeria	−2.4	3.6	13.2
Egypt	3.7	1.8	0.0
Israel	1.8	3.0	0.7
Jordan	1.2	2.5	8.8
Lebanon	−0.4	0.9	6.7
Libya	−1.1	−1.4	11.1
Morocco	1.3	5.7	6.3
Syria	−1.0	13.1	0.0
Tunisia	−3.4	0.2	10.2
Turkey	0.8	3.6	7.2

Table 16.3 Pupil–teacher ratio by education level, average 2000–2008 (From UNESCO)

Country	Primary	Secondary
Algeria	25.8	20.8
Egypt	24.2	16.3
Israel	13.2	9.7
Jordan	20.0	18.3
Lebanon	14.2	9.2
Morocco	27.6	17.9
Palestine	31.3	26.2
Syria	23.0	17.9
Tunisia	20.1	17.2

Table 16.4 Public expenditures on education as a % of GDP (From UNESCO for Algeria, Libya, Israel, Morocco, Turkey and Tunisia: various years; from the Central Bureau for Statistics for Syria; from CAPMAS (2009) for Egypt; from WB WDI for Lebanon; from the Palestinian Ministry of Education and Higher Education for Palestine)

Country	% of GDP
Algeria (2008)	4.3
Egypt (2001–2008)	4.5
Israel (2007)	5.9
Lebanon (2000–2008)	2.5
Libya (1999)	2.7
Morocco (1999–2008)	5.6
Palestine (2000–2003)	9.5
Syria (2001–2007)	5.0
Tunisia (2000–2008)	7.0
Turkey (2007)	3.1

16.3.2 Pupil/Teacher Ratio

In 2000–2008, Israel achieved the lowest average pupil/teacher ratio in primary education (13.2), while Lebanon had the lowest ratio at the secondary level (9.2). They were lower than the respective world averages in 2008, i.e. 24.6 and 18.0 (UNESCO). On the other hand, Palestine recorded the highest pupil/teacher ratios (Table 16.3).

16.3.3 Expenditures on Education

As mentioned earlier, the majority of the SEMC provide compulsory education free of charge or with subsidized tuition fees, and some countries extend free education up to the tertiary level. This requires governments to direct a considerable and regular portion of their public spending towards education financing. As shown in Table 16.4, Palestine represents the highest percentage of GDP spent on the education system, reaching 9.5 % on average for the 2000–03 period. Lebanon is at the tail end, having spent only 2.5 % of its GDP on education on average for the 2000–08 period.

A common feature among SEMC is that a considerably higher share of public spending on education is directed at the primary and secondary levels, while university education receives a smaller share. For instance, lately the Egyptian government has been shifting resources from university education towards financing basic and secondary education, to compensate for the drop in expenditures on education that occurred in 2003–04 and 2004–05 (CAPMAS 2009). In Syria, as of 2001, more funds have been directed at the development of basic and secondary education, which received 80 % of public spending on education in 2001 and has not fallen below 75 % in subsequent years. Similar trends have been found in Lebanon and Morocco (Kabbani and Salloum 2009).

In most cases, private spending on education is used to fund private tutoring and university tuitions. This cannot be unexpected given the limited resources assigned to university education in addition to the lower quality of education, which is usually addressed through private tutoring.

16.4 Access and Equity

16.4.1 Gross Enrollment Rates by Education Level and Gender

Gross enrollment rates in primary education are consistently higher than the rates in secondary schools in all 11 SEMC. The primary enrollment rates in some countries and secondary rates in Libya exceed 100 %, indicating that students older than the typical age group are attending primary and secondary schools (Table 16.5).

The highest gross enrollment rates have been achieved in Syria and Libya at the primary and secondary levels, respectively. The gender gap in gross enrollment rates varies between favoring males in some countries and favoring females in others, but the largest gender gap is found in Turkey in secondary education, where the male enrollment rate reached 90.61 % while the female enrollment rate was 71.68 % on average for the period 2000–2008. The gender gap is further explained below by the gender parity index within the gross enrollment rate.

Syria and Morocco have achieved the greatest progress in gross enrollment rates in both primary and secondary education. In Syria, the gross enrollment rate grew by 1.9 % and 7.3 % on average, respectively, over the 2000–2008 period (Table 16.6). On the other hand, Palestinian and Jordanian enrollment rates at the primary level and Libyan enrollment rates at the primary and secondary levels deteriorated over the same period, on average.

Table 16.5 Gross enrollment rate, average for 2000–2008, in % (From UNESCO)

	Primary education			Secondary education		
Country	Female	Male	Total	Female	Male	Total
Algeria	105.17	113.23	109.29	84.89	80.48	82.64
Egypt	93.68	99.05	96.43	73.28	77.94	75.99
Israel	111.78	111.16	111.46	91.94	92.12	92.03
Jordan	99.24	98.52	98.87	87.61	84.87	86.20
Lebanon	99.45	102.07	100.79	86.64	77.94	82.22
Libya	111.99	114.40	113.22	109.12	97.79	103.34
Morocco	97.86	109.98	104.02	40.52	49.24	45.87
Palestine	91.61	91.59	91.60	91.85	86.44	89.08
Syria	116.04	122.62	119.40	58.95	62.44	60.73
Tunisia	109.56	113.10	111.38	86.24	80.32	83.84
Turkey	94.84	100.26	97.60	71.68	90.61	81.30

Table 16.6 Average growth rate of enrollment, in %, 2000–2008 (From UNESCO)

	Primary education			Secondary education		
Country	Female	Male	Total	Female	Male	Total
Algeria	0.1	−0.1	0.0	4.0	3.1	3.5
Egypt	1.2	0.8	1.0	1.9	1.3	1.1
Israel	−0.1	−0.3	−0.2	−0.3	−0.5	−0.4
Jordan	−0.7	−0.8	−0.7	0.3	0.1	0.2
Lebanon	1.6	1.4	1.5	−0.1	−0.4	−0.3
Libya	−1.4	−0.9	−1.2	−4.7	−4.1	−4.5
Morocco	2.3	1.3	1.8	5.9	4.7	5.6
Palestine	−3.4	−3.4	−3.4	0.7	0.6	0.7
Syria	2.1	1.6	1.9	7.8	6.9	7.3
Tunisia	−0.5	−0.9	−0.7	0.8	0.4	2.0
Turkey	0.6	−0.1	0.2	3.3	1.1	2.1

16.4.2 Gender Parity Index Within the Gross Enrollment Rate

The gap between male and female enrollments in SEMC schools is lower at the primary level compared with the secondary and tertiary levels. Also, the gender parity index at the primary level does not vary much across the countries, ranging between 0.89 and 1.01. However, at the tertiary level, the index ranges between 0.74 in Turkey and 1.3 in Tunisia (Table 16.7).

Jordan has one of the most equitable education systems in the region, where the gender parity index is 1.01, 1.03 and 1.11 for the primary, secondary and tertiary levels, respectively, despite a tiny bias in favor of females.

Table 16.7 Average gender parity index within the gross enrollment rate, 2000–08 (UNESCO)

Country	Primary	Secondary	Tertiary
Algeria	1.0	1.1	1.3
Egypt	1.0	1.0	0.8
Jordan	1.1	1.1	1.1
Lebanon	1.0	1.2	1.2
Libya	1.0	1.2	1.1
Morocco	0.9	0.8	0.8
Syria	1.0	1.0	0.0
Tunisia	1.0	1.1	1.3
Turkey	1.0	0.8	0.8
Israel	1.1	1.1	1.3
Palestine	1.0	1.2	1.1

Table 16.8 Gini coefficient for the number of years of schooling in 2000 (Thomas et al. 2001)

Country	Gini coefficient
Algeria	0.518
Egypt	0.518
Jordan	0.443
Syria	0.458
Tunisia	0.538

16.4.3 Gini Coefficients for the Number of Years of Schooling

The Education Gini coefficients are used to measure educational inequality within a certain population. The estimated Gini coefficient is usually based on enrollment or educational attainment rates. The Gini Coefficient ranges between 0 which reflects perfect equality and 1, which indicates extreme inequality.

The education GINI coefficients for MENA countries are high relative to other regions, such as East Asia or Latin America. In particular, Tunisia suffers from a more inequitable education system compared with other countries (Table 16.8).

16.5 Efficiency

16.5.1 Retention Rates at Grade 5

The retention rate is the percentage of students who start in year t and go on to the next year(s) at the same school. If the retention rate is high then the school has more appeal to the students.

The highest average retention rates for the 2000–2008 period were achieved in Israel (99.21 %), while the lowest rates were recorded in Morocco (81.26 %)

Table 16.9 Average retention rate at grade 5, 2000–2008, in % (From UNESCO)

Country	Female	Male	Total
Algeria	96.9	95.0	95.9
Egypt	98.8	97.6	97.4
Israel	98.7	99.7	99.2
Jordan	96.7	96.1	96.4
Lebanon	96.4	93.4	94.9
Morocco	80.6	81.9	81.3
Syria	91.9	92.6	92.2
Tunisia	96.3	95.6	95.9
Turkey	96.7	96.4	96.6

(Table 16.9). In most of the SEMC, the retention rates for female students exceed those of males, with three exceptions: Morocco, Syria and Israel. Thus, although the enrollments of male students in primary education are higher than those of female students, the retention rates for females are higher at grade 5. The widest gender gap in retention rates at grade 5 is in Lebanon, where the male and female retention rates are 93.4 % and 96.4 %, respectively.

16.5.2 Percentage of Repeaters by Education Level

The percentage of repeaters at the secondary level is generally higher than the percentage of repeaters at the primary level. Morocco and Algeria have the highest shares of repeaters at the primary and secondary levels, for the total as well as for male and female students, respectively, indicating the low quality of education in these countries. It can also be noted that the percentage of male repeaters is consistently higher than that of females in all countries, whether in primary or secondary education (Table 16.10).

16.5.3 Dropout Rate

Dropout figures are not available for all 11 SEMC. For the countries where data are available, dropout rates increase with the education level. That is, the secondary level has higher dropout rates as compared with basic education. Some countries have witnessed declining dropout rates over the past decade, indicating that higher internal quality has been achieved. This is true at all education levels in Palestine, at the secondary level in Lebanon and Egypt, at the preparatory level in Syria and the primary level in Tunisia. On the other hand, other countries had higher dropout rates at some education levels, for example, at the primary level in Lebanon and Egypt, and at the secondary level in Tunisia.

Table 16.10 Average repeaters rate at the primary and secondary levels, in %, 2000–2008 (From UNESCO)

	Primary education			Secondary education		
Country	Female	Male	Total	Female	Male	Total
Algeria	8.8	14	11.2	18.0	24.0	23.0
Egypt	3	5.2	4.2	6.0	8.0	7.0
Israel	1	2.2	1.6	1.0	2.0	2.0
Jordan	0.8	1	1	2.0	1.0	1.5
Lebanon	7.6	10.8	9	9.0	10.0	10.0
Morocco	10.4	14.8	12.2	13.5	18.0	16.0
Palestine	1.2	1.6	1.4	2.5	1.5	2.0
Syria	6.4	8.2	7	6.5	8.0	7.0
Tunisia	7.6	11	9	14.0	19.0	16.0
Turkey	2.8	2.4	2.6	3.0	3.5	3.0

Table 16.11 Dropout rate by education level, in %, various years (Data from national ministries of education)

Country	Primary level	Secondary level
Egypt (2004)	0.84	5.1
Lebanon (2003)	2.2	11.1[a]
Palestine (2004)	1.0[b]	4.1
Syria (2003)	7.0	25.0
Tunisia (2004)	1.7	10.0

[a]Dropout rate for the lower secondary level
[b]Dropout rate for the basic level

Syria had the highest dropout rates in 2003, reaching 7 % and 25 % at the primary and secondary levels, respectively (Table 16.11). The highest gap in the dropout rates between the primary and secondary levels was in Egypt in 2004, where the dropout rates at the secondary level were six times those at the primary level.

16.6 Outcomes and Quality

Education systems have an obvious impact on the level of education of their societies and the labor market situation in each country.

16.6.1 Literacy Rate by Gender

Some SEMC are close to fully eradicating illiteracy. For instance, the adult literacy rate in Palestine reached 93 % on average for the 2000–2008 period. Higher literacy rates are found among youth in Palestine, Jordan, Libya and Lebanon, reaching

Table 16.12 Average adult and youth literacy rates, 2000–2008, in % (From UNESCO)

	Adult (15+)			Youth (15–24)		
Country	Female	Male	Total	Female	Male	Total
Algeria	62.0	80.4	71.2	62.0	80.4	71.3
Egypt	58.6	78.8	68.9	58.6	78.8	68.9
Jordan	86.9	95.2	91.1	86.9	95.3	91.1
Lebanon	86.0	93.4	89.6	85.9	93.4	89.6
Libya	80.1	94.4	87.5	80.1	94.4	87.5
Morocco	42.0	67.7	54.5	42.0	67.7	54.5
Palestine	90.1	97.1	93.6	90.1	97.1	93.6
Syria	75.3	89.7	82.6	75.3	89.7	82.6
Tunisia	68.1	84.9	75.9	68.1	84.9	75.9
Turkey	81.4	96.0	88.6	81.4	96.0	88.6

Table 16.13 Educational attainment of the population aged 25 and older, in % (from national statistical sources)

Country	Primary level	Secondary level	Tertiary level	Total
Egypt (2005)	12.3	37.1	6.6	56.0
Syria (2005)	62.1	20.8	3.6	86.5
Tunisia (2004)	32.1	24.1	9.2	65.4

99 %. On the other hand, Morocco has low literacy rates: 55 % for adults and 76 % for youth (Table 16.12).

16.6.2 Educational Attainment of the Population Aged 25 and Older

The distribution of the population aged 25 and older that has attained various levels of education differs across countries. In Tunisia and Syria, the majority of the population attained the primary education level while in Egypt, 37.1 % were enrolled in secondary education (Table 16.13).

16.6.3 TIMSS Scores

In TIMSS scores, the SEMC are consistently below the world average, whether in math or science, with the exception of the science score in Jordan, which was slightly higher than the world average in 2003. Morocco was at the tail end of math scores and Lebanon had the lowest score in science compared with several other countries (Table 16.14).

Table 16.14 TIMSS scores, 2003 (From Mullis et al. 2004)

Country	Math	Science
Egypt	406	421
Jordan	424	475
Lebanon	433	393
Morocco	387	396
Tunisia	410	404
World average	467	474

Table 16.15 Average labor force participation rate, 2000–2008, % (From the WB WDI database)

Country	Female	Male	Total
Algeria	34.44	79.38	56.99
Egypt	23.06	73.66	48.31
Israel	50.88	62.71	56.66
Jordan	22.26	74.43	49.2
Lebanon	21.09	71.19	45.25
Libya	23.91	77.38	51.85
Morocco	26.01	80.1	52.27
Syria	20.11	79.32	49.82
Tunisia	24.73	71.16	47.92
Turkey	25.64	71.34	48.51

16.6.4 Labor Force Participation Rates

The labor force participation rates for both genders and for females in the SEMC remain lower than the world averages of 65 % and 52 %, respectively. As for males, it is only in Morocco, Algeria and Syria, that the participation rate exceeds the world average of 78 % (Table 16.15). In general, the female participation rates in the SEMC are lower than the male rates. The highest gender gap is in Syria and the lowest is in Israel.

Most of the SEMC record growing or stable labor participation rates, with the exception of Morocco and Turkey, where the labor participation rates declined by 0.2 % and 0.7 %, respectively, on average, over the period 2000–08 (Table 16.15). By contrast, Algeria had the highest growth rate, reaching 0.6 %.

16.6.5 Unemployment Rates

The SEMC have high unemployment rates as compared with the world average of 5.7 % in 2008. The gender gap varies among countries. Egypt has the largest gender gap – the female unemployment rate is more than triple the male rate (Table 16.16). On the other hand, the gap is almost negligible in Turkey.

Table 16.16 Average unemployment rate for 2000–2008, in % (From the WB WDI database)

Country	Female	Male	Total
Algeria	19.55	17.66	19.93
Egypt	22.74	6.15	9.87
Israel	9.30	8.36	8.80
Jordan	21.39	12.55	14.06
Lebanon	8.92	7.75	8.42
Syria	20.25	6.22	8.86
Morocco	11.23	10.97	11.03
Tunisia	16.67	14.15	14.59
Turkey	10.35	10.26	10.28

16.7 Conclusions

The progress in education in the SEMC in the 2000s has differed in terms of quantity and quality. Some countries managed to develop in one of these two dimensions and some have progressed in both (such as Lebanon and Israel). Also, the scale of changes differed, but none of the SEMC was stagnant in all indicators. On the other hand, some countries are currently suffering from political and economic instability, and these conditions can negatively affect the development of their education systems.

Looking at individual indicators, the following conclusions can be drawn from our analysis:

- The number of students enrolled at the secondary and tertiary levels grew at a steady rate, however, with differences among individual SEMC.
- Gross enrollments rates in primary education are consistently higher than rates in secondary schools in all SEMC.
- The gap between male and female enrollments is lower at the primary level compared with secondary and tertiary education; however, it narrows over time.
- The growth rates in female enrollment are higher than the rates for male enrollment in all countries, except in Israel in secondary education and Libya at the primary and secondary levels. This indicates that even if female enrollments remain lower than male enrollments in some SEMC, the gender gap is diminishing over time.
- Most of the SEMC provide compulsory education free of charge or with subsidized tuition fees, and some countries extend free education up to the tertiary level. This requires governments to direct a considerable and regular portion of their public spending towards financing the education systems.
- A higher share of public spending on education is directed at the primary and secondary levels, while university education receives a smaller share.
- Education Gini coefficients in the SEMC are high relative to other regions, such as East Asia. The high levels of education Gini coefficients reflect a high degree of inequality in access to education, despite the free education systems that are prevalent in most of the countries in question.

- In most of the countries, female retention rates exceed the male rates. The highest retention rate among the SEMC is in Israel (99.21 % on average for the period 2000–2008), while the lowest rate is found in Morocco, at 81.26 %.
- The education systems in the SEMC continue to suffer from two main obstacles: first, efforts have been exerted on expanding the education system while public accountability has been given limited focus; second, there is a mismatch between the education system supply and labor market demand, given that the graduates of the system are not sufficiently qualified with the skills and knowledge needed in the labor market.
- Some of the SEMC are close to fully eradicating illiteracy, while other countries still suffer from high illiteracy rates.
- Labor force participation rates for both genders and for females in the SEMC are lower than the world averages of 65 % and 52 %, respectively.
- The SEMC register high unemployment rates as compared with the world average of 5.7 % in 2008.

As in the case of economic growth and development, it is expected that the more progress a country has already made, the more difficult it is to achieve further great leaps in development. The countries that are performing relatively well based on their current education indicators, such as Turkey, Israel and Jordan, will achieve slower progress as compared with other countries in the region, which are still at the middle of the road.

Education is one of the main areas of cooperation between the EU and the SEMC. Education projects are focused on basic and vocational education, as well as areas of higher education, for instance through the ETF, EuroMed Youth, Euro-Mediterranean Partnership, Education and Training for Employment (MEDA ETE) and Erasmus Mundus programs. Several SEMC have benefited from the education assistance provided by the EU and a continuation of such assistance can help the region overcome the existing education gap.

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Statistical Databases

Central Bureau for Statistics (Syria) (http://www.cbssyr.org/index-EN.htm)
Ministry of Education (Egypt) (http://www.emoe.org)
Ministry of Education (Lebanon) (http://www.higher-edu.gov.lb/english/default.htm)
Ministry of Education and Training (Tunisia) (http://www.education.tn/en/ministere/etab_s_tutel.htm)
Palestinian Ministry of Education and Higher Education (http://www.mohe.gov.ps/default.aspx)
UNESCO, Institute for Statistics, Data Centre, Custom Tables (by country, year and data) (http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)
WB WDI, World Development Indicators WDI (http://databank.worldbank.org/ddp/home.do?Step=12&id=4&CNO=2)

Chapter 17
Measuring Returns to Education and Human Capital

Emrah Arbak

17.1 Introduction

Measuring human capital has been a challenge for economists because the main variable of interest is intangible and not directly observable. The elusive nature of human capital is revealed in the various attempts by researchers to define the concept. Schultz (1961) describes human capital as the sum of skills and knowledge that are attained through education and experience. More recent definitions incorporate innate attributes and abilities, i.e. Lang and Kropp (1986). OECD (2001) uses a definition that includes the creation of personal as well as social and economic well-being. For the SEMC, the task is complicated by scarcity of data. The available data on education and work is far from harmonious, making comparisons difficult. Most of the micro-data sets on labor market characteristics are not publicly available.

In this chapter, human capital is defined as the aggregate stock of productivity among the working-age population. The measure is closely related to private returns to education, or the additional income an individual can earn by remaining in school an extra year.

Earlier studies relied on simpler measures of human capital, on average education levels, such as years of schooling, educational attainment or adult literacy rates.[1] Such approaches fail capture the full impact of human capital. There is no single appropriate method of measuring education. What is taught in school may not correspond to the needs of the productive sectors. The quality of education matters. If it is low, increased attainment is unlikely to translate into increased human capital.

[1] See Woessmann (2003) for a review of literature using a variety of measures.

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Several studies have attempted to account for differences in quality of education to assess its impact on growth, including Barro (1991) and Barro and Lee (1996). Lee and Barro (2001) show that various input factors, such as parental background, class size, and teachers' salary are closely related to schooling quality, as measured by internationally comparable test scores, repetition rates and drop-out rates.

We attempted to overcome these difficulties by creating comparable indicators of human capital development across the Mediterranean. When workers earn their marginal product and base salaries reflect a comparable level of productivity across countries, wage levels can be used to estimate the stock of human capital.[2] The estimations rely on a dataset based on the WVS and EVS, covering six SEMC (Algeria, Egypt, Israel, Jordan, Morocco, and Turkey) and six EU-MED countries (France, Greece, Italy, Malta, Portugal, and Spain). The data is unique in that it provides individual-level information for each country. We used surveys conducted between 1999 and 2002. The WVS explore people's values and beliefs, covering a large number of social and political issues, such as democracy, discrimination, gender equality, religion, and attitudes toward the environment, work, family, politics, and culture. The surveys are based on the EVS, which was first carried out in 1981 and has been conducted in five waves ever since, covering a total of over 100 countries.

Human capital stocks differ from other measures of human capital often used as indicators. A high level of educational attainment does not translate into high human capital stocks in many countries, notably Greece and Spain. Instead, human capital levels are high in countries where returns to education or experience levels are high.

Many of the SEMC score well. Human capital stocks are high in Israel and Turkey. Even Morocco, which has a low average attainment level, compares well. Human capital stocks are low in Algeria, Jordan, and Egypt. When we consider the prospects for 2030, the human capital stocks improve in Morocco, Turkey, and Egypt due to improving attainment levels.

A general note of caution is in order here. The indicator for human capital developed in this chapter relies on assumptions about the wage-setting process. If the assumption about the existence of competitive labor markets is unfounded, returns to education may fail to be collinear with underlying productivity enhancements. This would give rise to an underestimation of human capital development. If base salaries (i.e. the earnings of those with low education or experience) are set above the market clearing rate, as is likely to be the case in Greece and Portugal, then the estimates will be biased downwards.

[2] A more detailed description of the model, its underlying assumptions and results can be found in Arbak (2012).

17.2 Literature Review

Several studies provide estimates for private returns to schooling in the Mediterranean region. Pritchett (1999, 2006) finds that the steady expansion of attainment rates in the MENA region has not paid off in the form of increased productivity. Education does not appear to have a positive impact on the growth of per capita output. Instead, Pritchett finds that the accumulation of physical capital drives most of the results. For non-oil exporting countries, such as Egypt, Morocco, Tunisia, and Turkey, the relationship appears to be negative. Increased educational attainment reduces growth rates. Makdisi et al. (2007) find that initial enrollment ratios (for 1960) account for a substantial part of the output gap between the MENA and other regions, including EAP and LAC.

Salehi-Isfahani et al. (2009) investigate private returns from schooling for urban males in the form of earnings using labor force and HBS from Egypt, Iran, and Turkey. The authors focus on a subset of the entire sample in order to increase comparability in view of the wide divergences in female and rural labor participation rates between the sampled countries. They find that returns to education are the greatest in Turkey, where an additional year of schooling leads to a 12 % return on wages (according to 2003 figures). The authors argue that the high returns may be due to a selectivity bias in Turkey – also present in Iran – where tough national selection procedures lead to an over-representation of students with high cognitive abilities in higher levels of education.

In a cross-country comparison, Psacharopoulos and Patrinos (2004) find that the returns are exceptionally low in some of the SEMC such as Egypt and Tunisia. The results are paradoxical given the presence of a strong negative relationship between private returns and the level of development. Private returns to education in Egypt and Tunisia tend to be lower than in other countries with similar income levels. This is not the case in Morocco, where private returns are among the highest.

Improving attainment levels have not transformed this region's labor markets. Educational systems in the SEMC suffer from low quality due to inadequate funding, large class sizes, and inappropriate teacher education (World Bank 2008). Informality is prevalent. If skilled workers have a tendency to be informally employed, returns to education, both private and social, are depressed (Angel-Urdinola and Tanabe 2012). Rent-seeking behavior absorbs productive capacities developed through education, especially if there is a predominance of public sector employment opportunities (Assaad 1997; Huitfeldt and Kabbani 2007; Pissarides and Veganzones-Varoudakis 2007). A mismatch between the demand for and the supply of skills could be driving down the private returns to schooling, which would run counter to the present trends in many developing countries, especially in the aftermath of trade liberalization (Revenga 1997; Pavcnik 2003; Fajnzylber and Fernandes 2004; Almeida 2012).

The literature on the determinants of returns to education is limited. Yang (2005) use Chinese household data for 2 years, 1988 and 1995, to show that the economic transition improved not only the returns to education but returns to experience and

communist party membership. According to the study's findings, the returns to schooling (in years) in the standard Mincerian low-wage equation increased from 3–3.5 % to 5–6 %. The returns to an added year of experience increased from 4 % to over 7 %, contributing to a growth in inequality.

A similar study by Munich et al. (2005) confirms that the returns to education in the Czech Republic increased dramatically during the transition from a centrally-planned economy to a market economy between 1989 and 1996. Returns for an additional year of schooling rose from 2.5 % to over 5.5 %. The effect was strong for university graduates, for whom the returns more than doubled.

Tansel and Bircan (2011) show that the returns to education declined in Turkey between 1994 and 2002 due to increasing attainment levels and to the enactment of compulsory education in 1997. Psacharopoulos and Patrinos (2004) find a similar result for a large sample of developed and developing countries. They show average returns to schooling have a declining tendency when schooling levels are on the rise.

The relationship between years of schooling and the returns to schooling obtained from the data set of Psacharopoulos and Patrinos (2004) show that the gains decline for all countries on average, but especially for emerging economies by an estimated absolute drop of 0.6 % per year of schooling gains over time (Fig. 17.1). For advanced economies, which include some of the EU-MED countries in our sample, the relationship is not as clear, pointing at a weak 0.1 % per year of schooling gains. Since the dataset includes mostly emerging economies, the change in returns for less developed countries and those with already low returns are likely to be low.

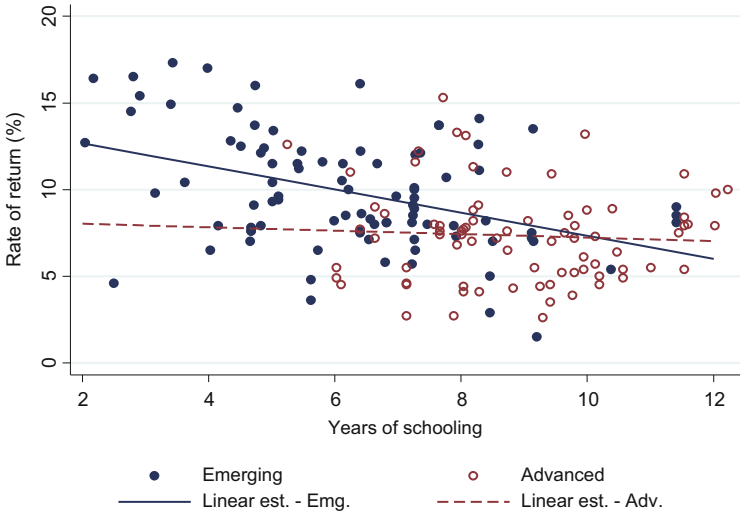

Fig. 17.1 Relationship between returns to schooling and years of schooling (From Psacharopoulos and Patrinos 2004 and Barro and Lee 2010) (Note: Figure plots the linear trends for returns to schooling for 98 countries, with multiple entries for most countries over the period of 1960–2000. The returns data is from Psacharopoulos and Patrinos (2004), matched with years of schooling estimates of Barro and Lee (2010))

17.3 Methodology

17.3.1 Measuring Human Capital

Many measures of human capital fail to account for productivity. If educational quality is low, the contribution of education to aggregate productivity could be meager. Education quality varies in the Mediterranean region, especially among the SEMC, as evidenced from the dispersion in international test scores.

Based on Mulligan and Sala-i-Martin (1997, 2000), we measured human capital in terms of private returns to education, i.e. as equivalent to the weighted sum of earnings of individuals with differing education and experience levels divided by the average earnings of those with no education or experience. Provided that they serve to improve workers' productivity, markets should reward schooling and experience. In countries where educational quality or any other contributing factors is low, these returns should be lower. If the labor market is competitive, earnings will be a linear function of the aggregate marginal product of labor and individual productivity. Under these conditions, human capita stock (per capita) will be given by (see Arbak 2012 for the detailed derivation):

$$h_i = \frac{1}{w_i(0,0)} \cdot \left(\sum_s \sum_x w_i(s,x) \cdot n_i(s,x) \right) \cdot \tag{17.1}$$

where s and x represent schooling and experience levels while w and n the salaries and employment share of individuals.

The estimation of the wage relationship relies on econometric specifications, using the cross-section of HBS. Since the survey samples are unlikely to be accurate proxies for the population shares, the employment rates are based on educational attainment and employment rates, accounting for varying unemployment and labor participation rates across different age and education groups, to the extent of data availability.

17.3.2 Data

The study relies on a large micro-level dataset extracted from the fourth wave of the WVS and EVS, which were conducted between 1999 and 2002.[3] For the sampled countries, the surveys were conducted in 2000/1. We included only six EU-MED countries and six SEMC due to inadequate coverage (see Sect. 17.1).

[3] The incomes data were incomplete for most countries of interest for the fifth wave of the survey. In particular, subjects were asked to rank their incomes on a subjective scale, rather than a pre-defined and clearly stated income ranking, as was the case in our database.

Aside from some individual characteristics, including the subject's gender, age (used for schooling calculations), whether s/he is the chief income earner in the household and civil status (married or not), we used two sets of variables on earnings and education levels for the purpose of the empirical exercise.

The first set relates to annual (or in some cases monthly) household earnings, accounting for all wages, salaries, pensions, and other supplemental income. Instead of reporting the actual incomes, the WVS and EVS ask subjects to identify their household incomes within a scale of income groups, provided to the respondents during the interview. The scales are country-specific and recorded as a separate variable, which we used as the basis for the econometric specifications. We translated the scaled incomes into hourly earnings in USD.

The second set of variables covers level of schooling. The database provides two relevant variables: age out of school and highest level of education attained. The first variable, age out of school, was translated into years of schooling by subtracting the official starting age for elementary education (six in most countries; five in Israel and Malta for the years studied). The same variable was used to obtain a proxy for (post-school) experience, set to current age minus age out of school.[4]

The descriptive micro-data set are provided in Table 17.1. The average years of schooling show little variance. In the EU-MED and the SEMC, adults have an average of 12.5 years and 12.0 years of education, respectively.

Details on country-specific coverage in Table 17.2 suggest that the sample is unbalanced and not weighted by the population shares. Turkey, which has the

Table 17.1 Descriptive statistics for survey data, adults of ages 20–59

Sub-region/variable	Obs.	Mean	Std. dev.	Max.	Min.
EU-MED					
Household income, lower bound (USD, ppp)	4,200	11.64	6.93	33.00	0.00
Years of schooling	5,537	12.50	4.52	25.00	0.00
Years of experience	5,147	20.66	12.72	52.00	0.00
Rural area (1 = less than 50,000 inhab.)	5,538	0.65	0.48	1.00	0.00
Gender (0 = male)	5,537	0.53	0.50	1.00	0.00
Civil status (1 = married)	5,471	0.56	0.50	1.00	0.00
SEMC					
Household income, lower bound (USD, ppp)	4,916	3.89	5.76	50.81	0.00
Years of schooling	5,617	12.02	4.59	25.00	0.00
Years of experience	5,376	18.48	12.09	61.00	0.00
Rural area (1 = < 50,000 inhabitants)	5,627	0.52	0.50	1.00	0.00
Gender (0 = male)	5,627	0.50	0.50	1.00	0.00
Civil status (1 = married)	5,611	0.64	0.48	1.00	0.00

[4] A more appropriate measure would be the years employed; however, the survey does not contain respective data.

Table 17.2 Data coverage, adults of ages 20–59

Sub-region	Country	Source	Year	Obs.	Income reported[a]
EU-MED	Spain	EVS	1999	755	66.6 %
	France	EVS	1999	1,151	81.3 %
	Greece	EVS	1999	962	84.5 %
	Italy	EVS	1999	1,360	76.0 %
	Malta	EVS	1999	724	73.2 %
	Portugal	EVS	1999	586	65.7 %
SEMC	Algeria	WVS	2002	907	81.1 %
	Egypt	WVS	2000	1,516	90.4 %
	Israel	WVS	2000	928	80.6 %
	Jordan	WVS	2001	909	93.4 %
	Morocco	WVS	2001	466	70.0 %
	Turkey	EVS	2001	901	98.4 %

Note: [a]Share of respondents reporting their household income

second largest population, does not have a corresponding share of respondents in the pooled sample. Nevertheless, most households report their income levels across the sample, especially among the SEMC.

17.3.3 Model Specification

The aim of the econometric exercise is to estimate the earnings functions of each individual, using the following Mincerian model:

$$y_i^* = \alpha + \beta_1 \cdot s_i + \beta_2 \cdot {s_i}^2 + \beta_3 \cdot x_i + \beta_4 \cdot {x_i}^2 + \delta \cdot Z + \varepsilon_i \qquad (17.2)$$

where $y^* = ln\ w^*$ is the actual log-earnings, s and x are years of schooling and experience, and Z is a vector of control variables. The intercept in Eq. 17.2, α, provides an estimate of the base incomes for those with no schooling or experience. Quadratic terms are included to control for non-linear terms.

Two control variables are included in the assessment of returns to education in the EU-MED and the SEMC. The first one is a dummy for rural location, indicating that the respondent lives in an area with a population of less than 50,000 inhabitants. The second one indicates whether the subject is married or not, in an attempt to control for divergence in household earnings. These control variables are not included in the country-specific estimates to build the human capital measures in order obtain standardized results.

If, instead, the two control variables were included in the estimation of human capital levels, they would imply that the returns to education and experience would correspond to the general population while the base salary, depicted by the intercept

estimate, would correspond to unmarried individuals living in urban areas. Since the human capital measures are effectively weighted averages of the said coefficients, the results would be biased.

Since actual earnings are unobserved, the dependent value y is defined as[5]:

$$y_{ij} = \begin{cases} 0 & \text{if} \quad 0 \leq w_{ij}^{*} < a_{1i} \\ 1 & \text{if} \quad a_{1i} \leq w_{ij}^{*} < a_{2i} \\ \quad \vdots & \\ 10 & \text{if} \quad a_{9i} \leq w_{ij}^{*} < \infty \end{cases}. \tag{17.3}$$

The OLS regression may lead to a biased estimate for interval-censored dependent variables (Maddala 1983). One solution is assigning to each observation midpoints of each income bucket and making a distributional assumption to resolve the top-coding problem.[6] But such a procedure is unlikely to lead to consistent estimates, except when the incomes are uniformly distributed. In particular, assigning mid-points to censored intervals would lead to consistent results only when incomes are uniformly distributed or when the number of intervals is sufficiently large, both of which are unrealistic assumptions for our purposes.

We made an assumption regarding the distribution of the income variable and estimated the censored variables using maximum likelihood procedures. We assumed that household income has a log-normal distribution. The rest of the estimation procedure is similar to the one proposed by Amemiya (1973).

We made four additional assumptions and corrections to reduce potential biases in estimating returns to education. Only employed adults of age between 20 and 59 were considered. For younger or older individuals, ongoing education and divergent life expectancies could complicate the estimations. Only males were considered in the estimation exercise. Although omitting female responses resulted in a reduced sample (by roughly 50 % in all cases), men are more likely to be the chief wage earners in most of the countries under study, which helps us limit potential biases from estimating household income.[7] The schooling data were checked for consistencies. Years of schooling that were different from the implied education attainment levels were dropped from the estimations, leading to a 1–3 % reduction in the sample size for each country. The 5-percentile outliers were removed based on income data for each educational attainment group.

[5] Note that under the previous specification, the income scales, a, may differ between countries.

[6] A similar approach was used by Krueger and Lindahl (2001) to resolve the interval data for income in the WVS dataset. In particular, the authors have resolved the top-coding problem by fitting a Pareto distribution to family incomes beyond the median income and calculating the mean for the censored distribution for the top income category. For all other cases, the authors assign mid-points of each income interval.

[7] Although we use only household income, the human capital measure in Eq. 17.1 is essentially a ratio of two incomes, which should limit this bias.

17.3.4 Estimating Employment Rates

The construction of the human capital measure relies on aggregate data on employment rates by level of education and age. We solicited national sources to create a database on labor participation and unemployment and employment rates across the countries in the sample. For countries for which employment information was incomplete, linear estimations were made using the national figures on employment rates and the education attainment indicators of Barro and Lee (2010) to fill out the table of employment rates across the different age and education levels.

The estimation of employment rates followed three steps. The information on employed population (or active population) was gathered in a table. If employment rates were not available, a corresponding table was constructed with the use of Barro and Lee (2010). The empty elements were estimated by extrapolation.

17.4 Results

17.4.1 Returns to Schooling

In order to assess the returns to education, a series of estimations were made for the pooled samples. Since Israel and Turkey were distinct from their peers, a third set of regressions was run by pooling the data for Algeria, Egypt, Jordan, and Morocco.

The results for the pooled regressions are depicted in Table 17.3. The figures provide evidence of differences in the returns to schooling and the incomes of households. The linear element for the returns to schooling equation show that an additional year of schooling results in an approximately 11 % increase in the incomes in the EU-MED. For the SEMC, the returns are even greater, 13–14 % per year of schooling. In both cases, the returns diminish with increasing schooling, as indicated by the negative square-terms. Unlike Psacharopoulos and Patrinos (2004), we found the SEMC face lower returns to education than the EU-MED countries. While the returns to schooling are comparable between the EU-MED and the SEMC, a distinction emerges once Turkey and Israel are removed from the latter sample.

Experience has a substantial positive impact on incomes in the EU-MED countries, diminishing over time but nevertheless remaining present for the entire life span of most adults. The impact of experience appears to be partly absorbed when civil status is controlled for. This is most likely due to some interaction between the two variables as married couples tend to be older (and thus more experienced).

For all the SEMC, experience has no impact on income. When Turkey and Israel are left out of the sample, inexperience appears to lower income. With increasing experience, the square-term kicks in and offsets and eventually leads to higher income. Once again, the impact of experience appears to be absorbed by the

Table 17.3 Private returns to schooling in the Mediterranean, pooled interval regressions

	EU-MED			SEMC			SMC without Turkey or Israel		
	I	II	III	IV	V	VI	VII	VIII	IX
Years of schooling	0.110***	0.107***	0.110***	0.137***	0.130***	0.126***	0.024	0.046*	0.051**
	(0.016)	(0.016)	(0.016)	(0.022)	(0.020)	(0.020)	(0.024)	(0.024)	(0.023)
Years of schooling squared	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***	0.001	−0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Experience	0.012***	0.012***	0.002	0.002	−0.004	0.014**	−0.020***	−0.019***	0.002
	(0.004)	(0.004)	(0.004)	(0.007)	(0.006)	(0.007)	(0.007)	(0.007)	(0.008)
Experience squared	−0.001*	−0.001*	−0.000	0.001***	0.001***	0.000	0.001***	0.001***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Rural area dummy		−0.074***	−0.085***		−0.955***	−0.912***		−0.541***	−0.520***
		(0.026)	(0.026)		(0.042)	(0.042)		(0.051)	(0.051)
Married dummy			0.152***			−0.305***			−0.319***
			(0.031)			(0.055)			(0.068)
Constant	1.298***	1.379***	1.405***	−0.638***	0.154	0.109	0.286	0.520***	0.397**
	(0.119)	(0.121)	(0.120)	(0.164)	(0.151)	(0.149)	(0.180)	(0.175)	(0.172)
Observations	1,909	1,909	1,895	2,338	2,338	2,330	1,593	1,593	1,588
Log likelihood	−4016.00	−4012.00	−3970.00	−5378.00	−5149.00	−5113.00	−3633.00	−3580.00	−3554.00
Chi sq.	322.90	330.40	348.80	223.00	741.50	781.30	67.11	181.70	202.60
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Robust standard errors are reported in parentheses. The significance levels are as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

marriage dummy. The positively signed square-terms are present, implying a J-shaped relationship between income and experience, which is most likely evidence of the persistently depressed income for young graduates with low levels of experience in the region.

Those living in rural areas have a severe disadvantage across the Mediterranean. In the SEMC, the earnings differentials are striking. Rural households earn 40–80 % less income than households in urban areas (i.e. with a population above 50,000). The disparities are even more striking when Turkey and Israel are included in the SEMC sample. Further tests (not included here) show that rural residents are severely disadvantaged in Turkey. The differences are smaller in the EU-MED, albeit still significant.

As noted in Sect. 17.3, the second set of estimations considers the base equation and identifies country-specific income for different education and experience levels. We used these estimates to build human capital measures. We used a simple econometric model to ensure that the coefficient estimates and the intercepts correspond to the same group of individuals.

The results of the country-specific estimations are presented in Table 17.4. The returns to schooling appear to be more homogenous among the EU-MED. They are extremely high in Italy and Malta in early years of education but the square-term dampens the positive gains from continued schooling. In France, Greece, Portugal, and Spain, an additional year of schooling increases income between 6.2 % and 8.0 % in almost all years of schooling, which implies constant returns. In addition, apart from Malta, experience pays off, increasing incomes by 1.6–3.5 % in early years. The constant terms are significant in all the EU-MED. Base incomes are high in Greece and Spain.

In the SEMC, returns to schooling are less uniform (Table 17.5). In Algeria, the returns are almost flat, even for different experience levels. The constant term, in turn, is significant and high, at least when compared to the other SEMC. Substantial sample variation leads to smaller returns to schooling in Morocco even though they are not zero (a 3 % return to an additional year of schooling). Turkey and Israel have the greatest returns to schooling. In Turkey, an additional year of education leads to an 18.5 % increase in income, even though the dampening effect of the square terms for years of schooling is strong.

Whenever they are significant, the square terms are negative, pointing to lower returns at higher education levels. This is the case in Italy, Malta, Egypt, and Turkey, all with limited predominance of tertiary education. In turn, in countries where obtaining a tertiary degree is more commonplace, such as France, Greece, Israel and Spain, the square terms are insignificant.

Experience has a substantial impact on incomes in several countries. With the exception of Malta, an additional year of experience leads to a 2–4 % income rise in the EU-MED. In France and Portugal, those with 10 years of experience earn around 25–30 % more than their peers with an identical schooling level. Among the SEMC, experience has a significant impact only in Morocco, with nearly 7 % for the first year and rising to over 30 % in 5 years. In Egypt, experience pays off exponentially but the effect is limited, with the wage differential between a young

Table 17.4 Private returns to schooling in EU-MED, pooled interval regressions

	I	II	III	IV	V	VI
Variable	France	Greece	Italy	Malta	Portugal	Spain
Years of school	0.110**	0.040	0.157***	0.257***	0.075	0.075**
	(0.044)	(0.056)	(0.031)	(0.086)	(0.050)	(0.032)
Years of school sq.	−0.001	0.000	−0.004***	−0.007**	−0.000	−0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.002)	(0.001)
Experience	0.037***	0.021**	0.003	−0.032***	0.028**	0.015
	(0.009)	(0.009)	(0.008)	(0.012)	(0.013)	(0.011)
Experience sq.	−0.0005***	−0.0004*	0.000	0.0015*	−0.001**	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.824***	1.848***	1.237***	0.837	1.207***	1.414***
	(0.318)	(0.429)	(0.230)	(0.602)	(0.355)	(0.244)
Observations	423	288	479	259	152	219
Log likelihood	−940.30	−646.50	−1102.00	−560.90	−194.10	−488.40
Chi sq.	100.70	45.39	75.42	60.02	47.29	33.51
p-value	0.00	0.00	0.00	0.00	0.00	0.00

Notes: Robust standard errors are reported in parentheses. The significance levels are as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 17.5 Private returns to schooling in SEMC, pooled interval regressions

	I	II	III	IV	V	VI
Variable	Algeria	Egypt	Israel	Jordan	Morocco	Turkey
Years of school	0.022	0.097***	0.121*	0.067**	0.028	0.197***
	(0.032)	(0.024)	(0.068)	(0.029)	(0.083)	(0.037)
Years of school sq.	0.000	−0.002*	−0.001	−0.001	0.003	−0.005***
	(0.001)	(0.001)	(0.003)	(0.001)	(0.003)	(0.001)
Experience	−0.011	−0.002	0.009	−0.006	0.069**	−0.003
	(0.010)	(0.009)	(0.018)	(0.009)	(0.031)	(0.013)
Experience sq.	0.000	0.0004*	0.000	0.000	−0.002**	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Constant	1.170***	−1.122***	0.599	0.340	−0.504	−0.332
	(0.263)	(0.187)	(0.488)	(0.229)	(0.617)	(0.275)
Observations	333	718	318	380	162	427
Log likelihood	−575.50	−1537.00	−633.20	−713.80	−326.50	−736.80
Chi sq.	13.41	79.57	65.64	26.92	44.54	152.60
p-value	0.01	0.00	0.00	0.00	0.00	0.00

Notes: Robust standard errors are reported in parentheses. The significance levels are as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

graduate with no experience and another with 10 years of experience, holding all else constant, of only 2 % of additional income. In other SEMC, the impact is more ambiguous.

17.4.2 Human Capital Measures

The wage estimates can be used to build the human capital measure for 2000/1, which the data is based on, and for 2030. For the latter case, the extrapolations were made using three assumptions. The dataset of Barro and Lee (2010) detailing the highest level of diploma received for 5-year groups for the years 1950–2010 was used to identify long-term and short-term trends in attainment.[8] Employment rates were adjusted using long-term participation and unemployment trends. Returns to education were modified by paying special attention to countries with less developed markets (see Arbak 2012).

According to the results shown in Fig. 17.2, Israel and France have the highest stock of human capital, suggesting that the productivity of an average worker is approximately 4.5–5 times the productivity of a worker with no experience or skills. If the productivity of those earning base salaries is comparable across countries,

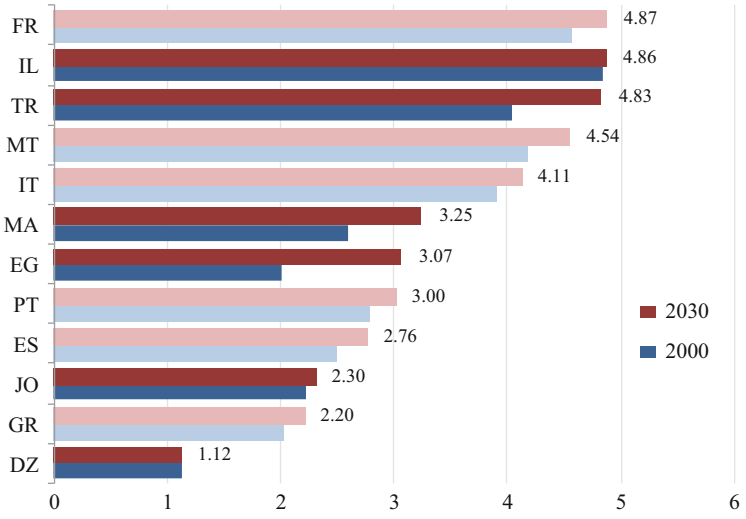

Fig. 17.2 Human capital measures, multiples of base income (Note: Base income is equivalent to estimated income earned by a male with no education or experience)

[8] Barro and Lee (2010) use a specific methodology for filling in missing observations. These methods were closely followed here to generate the forecasts using backward extrapolation.

then both countries come top of the list of the human capital comparison in the Mediterranean. Malta's labor market represents a high stock of human capital but drops behind Turkey in 2030, which has one of the highest (linear) returns terms within the sample.

Morocco remains roughly in the middle of the list, where modest gains in schooling translate into a modest rise in private returns. In Egypt, despite persistently lower returns, returns to education increase. These developments mean that both countries can reap the benefits of better educated workforces. The conditions in Algeria barely improve, despite the 2 % jump in linear returns to schooling. In Jordan, the returns remain low and experience does not pay off, which results in lower income differentials.

Several EU-MED countries are placed at the bottom of the list. For Greece, one of the best educated populations in our sample, those results are due to low returns to schooling. We suspect that this is due to wage setting procedures, which lead to an under-estimation of the results. Although education pays off in Spain, the returns are not that high when compared with regional figures, which can be explained by the wage-setting process.

17.5 Conclusions

We assessed human capital attainment levels around the Mediterranean using a unique micro dataset, which covers a substantial portion of the region. Despite its weaknesses, notably its reliance on perfect competition assumptions, the methodology enabled us to make regional comparisons, using income levels as the basis for measuring aggregate productivity.

We found that labor markets in the EU-MED reward schooling more than in the SEMC, with the exception of Israel and Turkey. The returns to education are low in Algeria. In Morocco, experience matters more than education. The regional analysis found that rural–urban inequality is prevalent in the SEMC.

Turkey, Israel, and Morocco, rank higher than some EU-MED countries. Returns to education in Greece, Spain, and Portugal are low. It is likely that job market conditions may be responsible for these results, especially in Greece and Spain, where unemployment among young university and secondary school graduates is high.

In 2030, assuming that returns to education will drop with increasing attainment levels (a general finding in the literature), some of the distinctions between the EU-MED and the SEMC will remain. France, Malta, and Italy will continue to have greater than average productivity; Israel and Turkey will be the only SEMC at the top of the list. The persistently lower returns to education in Greece, Spain, and Portugal will keep those countries at the bottom of the list. Among the SEMC, Egypt shows the largest jump, thanks to increasing returns to higher education.

These findings call for a reassessment of education policies in the region. Educational attainment has only a weak and indirect impact on human capital

development. Labor markets find ways to compensate for weaknesses in the education system, but that may lead to a disproportionate valuation of experience over education. Thus, countries that have achieved a high level of attainment should target industries that value human capital more in an attempt to increase returns to education while at the same time treating the structural problems that undermine wages for the skilled workforce.

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Chapter 18
Determinants and Measures of Inequality

Heba El Laithy

18.1 Introduction

There are several reasons why inequality and its determinants remain at the heart of the development agenda. First, human development cannot be built on the exploitation of certain groups by others or on greater access to resources and power by some groups. Inequitable development is not human development (HDR 2010). Second, empirical studies have shown that poverty can be reduced through enhancing growth or reducing inequality or both; pro-poor growth strategies are more effective when they reduce poverty. Third, several studies have shown that reducing inequality, both among the population as a whole and across gender and other groups, can improve overall outcomes in health and education, economic growth and vice versa. Fourth, reducing poverty and inequality means increasing people's access to productive and decent employment. It also means enhancing their human capital by increasing social investment in health and education.

Welfare is a multi-dimensional concept not only concerning material living standards (where it can be seen as the outcome of consumption choices) but also about how non-material goods and services are distributed among households. The standard monetary solution of increasing individual income levels ignores the fact that some household members are discriminated against and may not be given a proportional share of household income. For instance, when children work, a family's income often rises above the poverty level. These children are deprived, yet, according to the traditional income approach, they would not be considered poor. Hence, inequality in income and other dimensions of welfare should be addressed.

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18.2 Income Inequality

Policy-makers and scholars have usually computed the effectiveness of policy changes on the basis of general Lorenz-based inequality criteria. Recent literature, however, stresses the multi-faced aspects of income distribution.

The consumption-based measure is the internationally accepted indicator to measure living standards and it is based on data collected in national HIECS. The focus is placed on consumption, rather than income, because it is much easier to measure and households are less reluctant to reveal their consumption than their income. Both food and non-food items are included, but public services and home-produced services are not. Because consumption is measured at the household level, it can provide information on the consumption of the average household member rather than for individuals within the household, such as women or children.

There are many measures of inequality. We use mostly three of them: (i) quintile ratios; (ii) Gini coefficients; and (iii) Theil inequality measures.

The most common quintile ratio is the 80/20 ratio, which is the equivalent consumption at the 80th percentile of the equivalent consumption distribution divided by the equivalent income at the 20th percentile. This measure is easy to interpret. For example, if the 80/20 ratio is equal to 4, then the poorest person of the richest 20 % of the population consumes four times as much as the richest person of the poorest 20 %. Quintile ratios are insensitive to outliers either in the very top or the very bottom tail of the consumption distribution. However, quintile ratios do not reflect what happens in other parts of the distribution. For example, no change in inequality anywhere between the 21st and the 79th percentile would ever be reflected in 80/20 ratio. To address this shortcoming, we also use Gini and Theil coefficients.

The Gini coefficient is defined, graphically, as the area between the Lorenz curve (which portrays the cumulative fraction of income versus the cumulative fraction of the population arranged in ascending order) and the line of perfect equality. The Gini coefficient is bounded between 0 and 1, with 0 indicating absolute equality and 1 indicating absolute inequality. The Gini coefficient is especially sensitive to changes in inequality in the middle of the equivalent consumption distribution.

Another widely used class of inequality indicators is the generalized entropy indexes developed by Theil. Within that class, we use the *Theil mean log deviation index* E(0) and the *Theil entropy index* E(1). Both measures are zero for perfect equality. For complete inequality (one person consumes everything), E(0) goes to infinity while E(1) reaches $n\ln(n)$. The two Theil inequality measures differ in their sensitivity to inequality in different parts of the distribution. The entropy measure E (1) is most sensitive to inequality in the top range in the distribution, while the mean log deviation measure E(0) is most sensitive to inequality in the bottom range of the distribution.

Table 18.1 Income inequality measures (Based on author's calculation using WB WDI database and POVCAL software)

Country	Year	Gini (expenditure)	Richest/poorest quintile	% of middle class
Algeria	1988	40.1	7.21	73.86
	1995	35.3	6.12	74.42
Egypt	1990	32	4.71	71.21
	1995	30.1	4.2	72.74
	1999	32.8	4.7	79.33
	2004	32.1	4.6	80.24
	2008	33		
Jordan	1986	36	6.01	87.38
	1992	43.4	8.44	78.89
	1997	36.4	5.92	84.77
	2002	38.9	6.92	82.62
	2006	37.7	6.29	88.15
Lebanon	2004	36	6.14	
Morocco	1984	39.2	6.87	69.7
	1990	39.2	7.03	78.87
	1998	39.5	7.22	72.28
	2000	40.6	7.48	71.97
	2007	40.9	7.34	81.31
Syria	1997	33.7	5.32	
	2004	37.4	5.67	
	2007	34		
Tunisia	1985	43.4	9.28	70.6
	1990	40.2	7.85	76.93
	1995	41.7	8.5	74.12
	2000	40.8	7.98	79.75
	2005	41.3	8.13	
Turkey	1987	43.57	8.47	83.84
	1994	41.53	8.22	81.17
	2002	42.71	8.65	80.69
	2005	43.23	9.42	78.64

18.2.1 Gini Coefficient

The inequality patterns in the SEMC show significant differences, with Turkey, Morocco and Tunisia showing relatively high inequality and Egypt and Syria moderate to low inequality (Table 18.1). Only a slight change in the expenditure distribution was detected for the majority of countries between the 1980s and the 2000s.

In addition, with few exceptions, inequality within individual countries has remained relatively unchanged over time. In the 2000s, the Gini coefficient ranged from 0.30 in Egypt (2008/09) to 0.4323 in Turkey (2005), followed by Morocco

(0.4088 in 2007). The country-specific Gini coefficient fluctuated within the 1990–2009 period, but always fell between 0.30 and 0.43. As of 1990, inequality rose in Turkey, Morocco and Tunisia. Jordan experienced the largest decline in inequality, with the Gini coefficient falling by 6 % points within a 14-year span. In other countries it remained unchanged.

The median value of the Gini coefficient for eight SEMC in the 1990s was 0.39, close to the global average.

The consumption ratio of the richest quintile and the poorest quintile also tells the same story. Inequality is highest in Turkey, Tunisia and Morocco, where consumption in the richest quintile is more than seven times the consumption of the poorest quintile. Egypt, followed by Syria, experienced the lowest inequality.

18.2.2 Polarization

Income polarization is the extent to which a population is clustered around a small number of distant poles. A population displaying high inequality, with few persons appropriating the majority of the income, is not a polarized society simply because most people are concentrated around the same pole in the income space.

Bibi and Nabli (2008) argue that the more polarized a society is, the more likely it seems that a conflict can break out (see the example of bread riots in Tunisia in 1980s). Consequently, finding an increase in income polarization could be a powerful means to detect and predict possibilities of social unrest and perhaps civil conflict.

A special aspect of income polarization, the middle class, has been discussed intensively since the early 1980s. There is considerable debate about how to measure the middle class. Ravallion (2009) uses a measure that is comparable across developing countries: the households with a consumption per capita of between USD2 and USD13 a day at 2005 PPP levels. The lower bound is the median poverty line of developing countries while the upper bound is based on the US poverty line. He finds that in 1990, about one in three persons in the developing world belonged to the middle class, and the proportion had risen to one in two by 2005. Ravallion (2009) finds that the MENA region has the largest proportion of population which can be considered middle class: 75.5 % in 1990 and 78.7 % in 2005.

As Table 18.1 shows, the size of the middle class ranged from 88 % of the Jordanian population in 2007 to 78 % of the Moroccan population in 2005. All analyzed countries experienced an increase in the middle class share, except Turkey. Jordan exhibited the biggest increase - by 10 % points between 1992 and 2006.

18.2.3 Growth Incidence Curves

GIC can explain trends in income distribution and their relation to overall growth. GIC shows the rate of change in real consumption at different points in the distribution. The *horizontal axis* shows the expenditure groups arranged in percentile increments from the poorest to richest. The *vertical axis* shows growth in expenditures, in %, for a given expenditure group between the two reported dates.

Kheir-El-Din and El-Laithy (2006) estimated the Egyptian GIC using the 1991, 1995, 1999, and 2004 HBS. They noted that the mean real per capita expenditure has been declining over the whole period of study, as well as during the first and third sub-periods. It increased only during the second sub-period (1995–1999). GIC for the whole period decreased over all quintiles, implying that inequality declined, as higher quintiles decline more rapidly than lower quintiles. The annualized increase in per capita expenditure is estimated to have exceeded 10 % for the poorest two percentiles, then declined steadily to reach zero around the 30th percentile. It then turned negative to reach −2 % (the average growth of per capita expenditure) around the middle of the eighth decile and continued to decline thereafter. This indicates that expenditure distribution markedly improved over the whole period under consideration, with a clear decline in poverty incidence. However, in the subsequent period of 2005–2009, the entire GIC curve was below zero (Fig. 18.1), suggesting that in terms of ability to buy, the 'poverty basket,' the

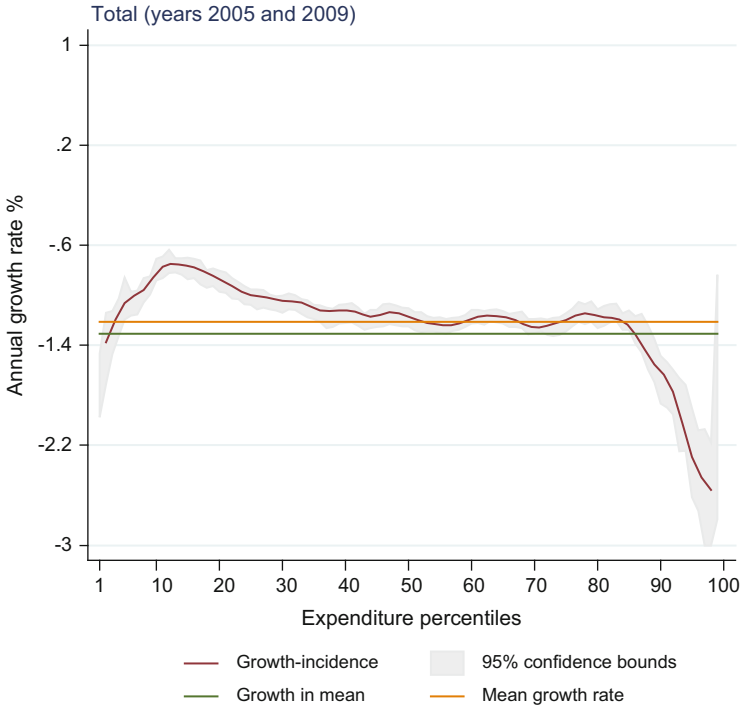

Fig. 18.1 Growth incidence curve in Egypt for 2004/5–2008/9 (From Author's calculation based on HBS of 2005 and 2009)

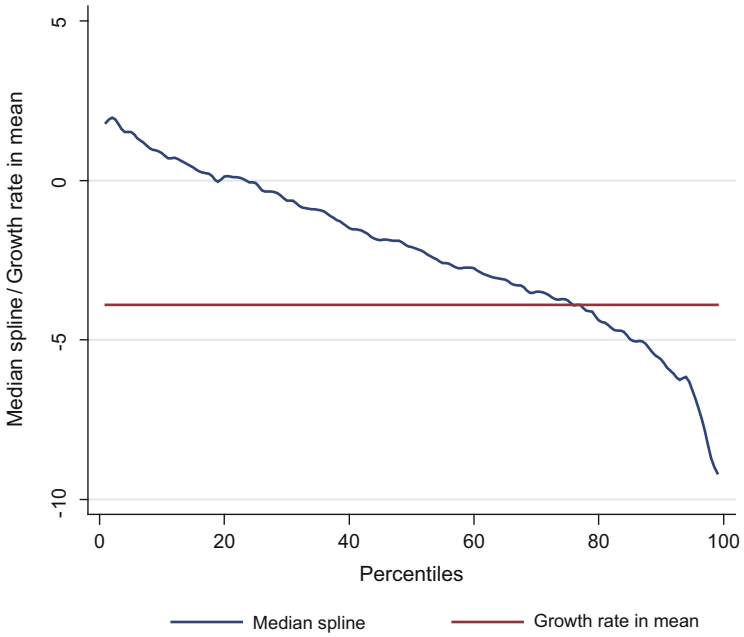

Fig. 18.2 Growth incidence curve in Syria for 2004/5–2008/9, total, urban and rural (From El-Laithy and Abu-Ismail 2005)

purchasing power of the population fell. The curve has an inverted U-shape, which means that the very poor and very rich were the main losers, but the rich were the worst hit. Changes in welfare levels of the middle of the distribution were kept at the average level. From the poverty perspective, the distribution deteriorated sharply, with great losses for the poorest among the poor (those who were already barely meeting their basic needs).

El-Laithy and Abu-Ismail (2005) have shown that income distribution in Syria increased between 1996 and 2004 because growth rates at the national level were not fairly distributed among the population. For instance, the lower percentiles of the expenditure distribution grew at a lower annual rate than the average rate, indicating that growth was accompanied by a rise in expenditure inequality. However, the period of 2004–2007 saw the opposite trend: the average real per capita expenditure declined, the bottom percentiles experienced gains in their welfare and the richest percentiles experienced large losses, which were particularly pronounced in the highest decile (see Fig. 18.2).

18.3 Break-Down of Inequality

Major factors which determine welfare are related to socio-demographic characteristics such as age and household composition, educational attainment, and employment status. The distribution of welfare in any society depends on

differences in the characteristics of its population (e.g. illiteracy rate, share of skilled labor) and on their earning capacity.

Inequality can be broken down in two ways: by income source (using the Gini coefficient), and in terms of inequality within population groups and between those groups. This decomposition can be performed using the Theil indices.

Decomposition by population group allows us to look more closely at the causes of inequality. Following Bourguignon et al. (2007) and Shorrocks (1982), we decompose total inequality into inequality across population subgroups and within these subgroups.

As the individual effort is expected to vary within each group, the intra-group component of overall inequality could be deemed as the natural outcome of differentiated individual efforts, i.e., dependent on individual responsibility. On the other hand, inter-group inequality reflects the inequality of opportunities. As the inequality of opportunities is beyond the individuals' responsibility, it should be reduced through appropriate social and economic policies.

Location, educational attainment and employment status have been identified as the most important factors affecting welfare level and its distribution. First, regions differ not only in their natural resources, but also in the provision of public services. Second, education is a key determinant of the command over resources. It determines the income-earning opportunities of individuals through their access to various types of employment. Education usually has a high explanatory power in respect to patterns of income distribution. Third, changes in employment structure and productivity can influence both determinants of change in income and its distribution. Growth in employment and productivity can improve the growth rate of an economy. Moreover, changes in employment structure and productivity can improve income distribution by pushing up the relevant segment of the Lorenz distribution. This can happen by increasing employment and its remuneration.

Based on micro-data for Egypt, Syria and Lebanon (Tables 18.2, 18.3, 18.4, 18.5, 18.6, 18.7, 18.8, 18.9 and 18.10), we decomposed overall expenditure inequality into inequality between and within individual population groups. We investigated inequality by location, education attainment and employment status for different years.

In Egypt, we first took the country as a whole and asked how much of the overall inequality is attributable to the inter-group component in a series of settings. The decline in the overall Theil inequality index E(0) from 0.171 to 0.157 is mainly due to a decline in inequality in urban areas (by 1.4 % points). If one breaks Egypt down into urban and rural sectors (Table 18.4), in 2008 only 20 % of overall inequality could be attributed to the difference in average consumption between these two areas. Thus most inequality would remain if this difference in averages were removed. The conclusion holds, irrespective of the inequality measure being used. A slight reduction was observed in the contribution of inequality measures due to urban/rural differences, indicating smaller differences between urban and rural areas in 2008 as compared to 2004 (from 20.4 % to 20.05 %). The persistent inequality between urban and rural areas raises concerns about the rural development process and calls for further investigation of its determinants.

Table 18.2 Inequality decomposition by educational attainment: Egypt (Author's calculation based on HBS of 2005 and 2009)

	2004–2005			2008–2009		
Group	Entropy index	Population share	Relative contribution	Entropy index	Population share	Relative contribution
Illiterate	0.112	0.224	0.146	0.112	0.217	0.155
Read and write	0.138	0.130	0.105	0.124	0.125	0.099
Primary/ preparatory	0.151	0.158	0.139	0.132	0.160	0.135
Secondary	0.150	0.181	0.159	0.141	0.189	0.170
Above secondary	0.154	0.021	0.019	0.138	0.021	0.019
University	0.245	0.067	0.096	0.224	0.068	0.098
Above university	0.257	0.002	0.003	0.267	0.002	0.003
Within			0.668			0.679
Between			0.171			0.160
Population	0.171	1	1	0.157	1	1

Table 18.3 Inequality decomposition by employment status: Egypt (Author's calculations based on HBS of 2005 and 2009)

	2004–2005			2008–2009		
Group	Entropy index	Population share	Relative contribution	Entropy index	Population share	Relative contribution
Wage earner	0.191	0.196	0.219	0.168	0.199	0.213
Employer	0.187	0.054	0.059	0.176	0.049	0.055
Self employed	0.115	0.066	0.045	0.110	0.056	0.039
Unpaid worker	0.079	0.054	0.025	0.072	0.057	0.026
Unemployed	0.154	0.021	0.019	0.138	0.018	0.016
Out of labor force	0.177	0.440	0.454	0.162	0.445	0.460
Out of human force	0.157	0.169	0.155	0.153	0.176	0.172
Within			0.975			0.981
Between			0.025			0.019
Population	0.171	1	1	0.157	1	1

If Egypt were broken down into seven regions (Metropolitan, Urban Lower, Rural Lower, Urban Upper, Rural Upper, Urban Border, Rural Border – Table 18.5), disparities due to differences between regions' averages reached 27.5 % in 2008–2009. Thus, results suggest that inequality would be lower (around 27.5 %) if differences in average consumption across all regions were removed. However,

Table 18.4 Inequality decomposition by location: Egypt (Author's calculations based on 2005 and 2009 HBS)

	2004–2005			2008–2009		
Group	Entropy index	Population share	Relative contribution	Entropy index	Population share	Relative contribution
Urban	0.199	0.434	0.503	0.185	0.411	0.486
Rural	0.089	0.566	0.293	0.083	0.589	0.314
Within	–	–	0.796	–	–	0.799
Between	–	–	0.204	–	–	0.201
Population	0.171	1	1	0.157	1	1

Table 18.5 Inequality decomposition by region: Egypt (Author's calculations based on 2005 and 2009 HBS)

	2004–2005			2008–2009		
Group	Entropy index	Population share	Relative contribution	Entropy index	Population share	Relative contribution
Metropolitan	0.212	0.187	0.231	0.202	0.170	0.220
Lower urban	0.120	0.121	0.085	0.114	0.115	0.084
Lower rural	0.071	0.307	0.128	0.066	0.318	0.134
Upper urban	0.203	0.119	0.140	0.178	0.115	0.131
Upper rural	0.094	0.254	0.139	0.085	0.266	0.144
Borders urban	0.083	0.007	0.003	0.153	0.010	0.010
Borders rural	0.214	0.005	0.007	0.086	0.005	0.003
Within			0.735			0.725
Between			0.265			0.275
Population	0.171	1	1	0.157	1	1

the data shows that differences between regions have widened between 2004–2005 and 2008–2009, and the contribution of inter-regional differences to overall inequality has increased from 26.5 % to 27.5 %.

In Syria, where overall inequality was much higher than in Egypt, urban–rural disparities contributed to a lesser degree (7.4 % in 2003–2004 and 4.9 % in 2006–2007 – see Table 18.8). Intra-urban and intra-rural inequality increased and its contribution to overall inequality increased from 92.6 % to 94.6 %. Moreover, the reduction in inequality was mainly due to a decline in urban inequality, which caused the Theil index to decline from 23.6 % to 17.7 %.

The Theil index for Egypt, Syria and Lebanon was decomposed by education levels, within and between groups (Tables 18.2, 18.6, and 18.9). In all countries, the intra-group component was always the most important. Disparities between education levels were the highest in Egypt, contributing to 16 % of the overall index in 2008–2009.

Table 18.6 Inequality decomposition by educational attainment: Syria (Author's calculations based on 2004 and 2005 HBS)

Group	2003–2004			2006–2007		
	Entropy index	Population share	Relative contribution	Entropy index	Population share	Relative contribution
Illiterate	0.205	0.176	0.158	0.187	0.076	0.074
Can read and write	0.201	0.245	0.214	0.189	0.156	0.154
Primary	0.202	0.351	0.308	0.164	0.279	0.239
Preparatory	0.228	0.105	0.105	0.183	0.115	0.110
Secondary	0.217	0.066	0.062	0.184	0.072	0.069
Above secondary	0.229	0.031	0.031	0.184	0.029	0.028
University	0.290	0.027	0.034	0.196	0.025	0.026
Post graduate				0.321	0.002	0.003
Unspecified	0.100	0.000	0.000	0.173	0.003	0.002
Within			0.912			0.704
Between			0.088			0.095
Population	0.229	1	1	0.192	1	1

Table 18.7 Inequality decomposition by employment status: Syria (Author's calculations based on 2004 and 2005 HBS)

Group	2003–2004			2006–2007		
	Entropy index	Population share	Relative contribution	Entropy index	Population share	Relative contribution
Wage earner	0.230	0.154	0.154	0.189	0.154	0.152
Employer	0.275	0.020	0.024	0.255	0.019	0.025
Self-employed	0.223	0.071	0.069	0.179	0.072	0.067
Unpaid worker	0.184	0.039	0.031	0.176	0.033	0.030
Unemployed	0.189	0.027	0.022	0.208	0.012	0.013
Out of labor force	0.239	0.439	0.457	0.195	0.464	0.472
Within	–	–	0.757	–	–	0.760
Between	–	–	0.027	–	–	0.033
Population	0.229	1	1	0.192	1	1

The impact of education level on inequality in Syria is less important as the contribution of the inter-group component to overall inequality reached 9.5 % in 2006–2007.

For both Egypt and Syria, inequality in each educational category had declined except for individuals with a qualification higher than a university degree. In both

Table 18.8 Inequality decomposition by location: Syria (Author's calculations based on 2004 and 2005 HBS)

	2003–04			2006–07		
Group	Entropy index	Population share	Relative contribution	Entropy index	Population share	Relative contribution
Urban	0.236	0.508	0.522	0.177	0.541	0.499
Rural	0.188	0.492	0.404	0.187	0.459	0.447
Within	–	–	0.926	–	–	0.946
Between	–	–	0.074	–	–	0.049
Population	0.229	1	1	0.192	1	1

Table 18.9 Inequality decomposition by educational attainment: Lebanon (Author's calculations based on 2004 HBS)

	2004–05		
Group	Entropy index	Population share	Relative contribution
Illiterate	0.186	0.079	0.062
Read and write	0.206	0.045	0.039
Primary	0.187	0.185	0.147
Intermediate	0.179	0.140	0.107
Secondary	0.186	0.092	0.073
University	0.219	0.070	0.066
Within	–	–	0.494
Between	–	–	0.104
Population	0.235	1	1

Table 18.10 Inequality decomposition by employment status: Lebanon (Author's calculations based on 2004 HBS)

	2004–05		
Group	Entropy index	Population share	Relative contribution
Wage earner	0.254	0.184	0.199
Self-employer	0.234	0.014	0.014
Self-employed	0.209	0.085	0.076
Unpaid worker	0.223	0.008	0.008
Unemployed	0.208	0.025	0.022
Out of labor force	0.247	0.015	0.016
Within	–	–	0.335
Between	–	–	0.026
Population	0.235	1	1

countries, inequality increases as we move from a lower to higher level of education. In Lebanon, as in the other two countries, disparities between education level

averages explain only 10.4 % of the overall inequality but there is no clear relationship between educational level and inequality.

A decomposition of the Theil index by employment status (Tables 18.3, 18.7, and 18.10) shows that most of the observed inequality in the three countries and in all years is within rather than between groups. In Egypt, there was a slight decline in inter-group inequality. There was also a slight increase in intra-group inequality in both Egypt and Syria. Variation within wage workers and employer categories is much higher as compared to other employment categories. These two categories also witnessed the largest decreases in intra-group inequality.

18.4 Social Expenditure, Human Capital and Inequality

Public expenditure on infrastructure, health, and education is usually expected to improve equality in opportunities, total factor productivity, and growth. In the SEMC, expenditure on social services has always been seen as a major re-distributional mechanism. It has helped to improve access to these services and in poverty reduction.

Van de Walle (2004) analyzed the impact of public spending programs in Morocco on the geographical aspects of poverty and social outcomes. She found that social programs were well targeted towards the rural poor, who obtained substantial benefits, but not to the urban poor.

The most common approach to assess the impact of social expenditures on inequality in developing countries is the so-called benefit incidence analysis. The BIC plots the percentage share of benefits against the population shares. The horizontal axis represents the cumulative percentage of the population from the poorest on the left to the richest on the right. The vertical axis is the cumulative distribution of those who actually benefited from public expenditure.

If benefits are equitably distributed, the share of benefits for any population group equals its population share, i.e., it overlaps with the 45° line. When the BIC is higher than the 45° line, poorer population groups receive a higher share of benefits than its population share. When the BIC lies below the 45° line, it indicates that public spending targets the relatively less vulnerable.

Figure 18.3 illustrates that public health expenditure in Egypt in 2008 favored the more vulnerable. The BIC for all types of government health institutions was above the 45° line, indicating that the poor received more benefits than the better off. It looks like the social targeting mechanism worked well in the case of health subsidies. The poor chose cheap or free health care as they had no other alternative. On the other hand, the better off were crowded out as a result of the low quality of health services provided by government institutions. In fact, households have to consider the trade-off between the cost of medical services and their quality.

Table 18.11 shows that public spending on basic education in Egypt in 2008 was almost neutral: all income deciles got almost equal shares. The poorest 10 % of households received 9.5 % of the total public basic education subsidies, and the

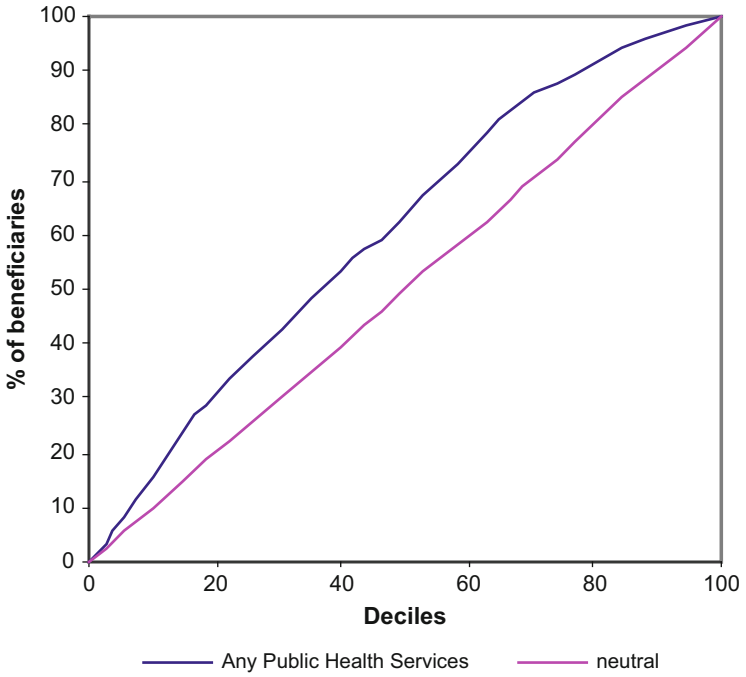

Fig. 18.3 BIC for public health expenditure in Egypt, 2008, all types of institutions (Author's calculations)

Table 18.11 Distribution of Egypt's public spending on education by deciles, 2008 (Author's calculations based on 2008 HBS)

Per capita expenditure deciles	Basic education	Secondary education	Tertiary education
10	9.58	5.87	5.84
20	19.49	12.41	10.45
30	29.53	23.90	15.51
40	39.76	34.86	20.12
50	49.85	44.83	25.78
60	59.99	55.15	33.47
70	70.47	62.62	45.76
80	81.08	75.05	64.05
90	90.50	88.10	80.92
100	100	100	100

richest 10–9.5 %. One could argue that benefits should be targeted to the most vulnerable so that children in the lower deciles receive more benefits.

However, the degree of equity in the benefit-incidence analysis differed by level of education. While public spending on basic education favored the poor, spending on secondary public schools and universities was heavily tilted toward the rich.

Incidence curves for both secondary and higher education were below the neutral curve (45° line), especially for tertiary education, indicating that the rich obtained more benefits. The poorest decile benefited with 6 % as opposed to the richest decile, which gained 12 % and 20 % for secondary and tertiary education, respectively.

18.5 Inequality in Human Development

The HDR (2010) introduced the IHDI, a measure of the level of human development of people in a society that accounts for inequality. The IHDI takes into account not only a country's average human development, as measured by health, education and income indicators, but also how it is distributed. We can think of each individual in a society as having a 'personal' HDI. If everyone had the same life expectancy, schooling, and income, and hence the average societal level of each variable, the HDI for this society would be the same as each personal HDI level and hence the HDI of the 'average' person. In practice, of course, there are differences among people, and the average HDI differs from personal HDI levels. The IHDI accounts for inequalities in life expectancy, schooling and income, by 'discounting' each dimension's average value according to its level of inequality. The IHDI is equal to the HDI when there is no inequality across people, but falls further below the HDI as inequality rises. In this sense, the HDI can be viewed as an index of 'potential' human development (or the maximum IHDI that could be achieved if there were no inequality), while the IHDI is the actual level of human development (accounting for inequality). The difference between the HDI and the IHDI measures the 'loss' in potential human development due to inequality.

Table 18.12 shows the HDI and IHDI and the corresponding losses. The average loss in the HDI in the SEMC due to inequality is about 20 %. It ranges from 12.5 % (Israel) to 28.1 % (Morocco). Morocco, Egypt and Tunisia lost more than 25 % of their HDI. Egypt and Tunisia were downgraded by seven and six positions in the global HDI ranking, respectively, as a result of adjusting their HDI to inequality. Their HDIs were reduced by 17 % points for this reason. On the other hand, due to their relative equity in human development, Jordan and Syria moved to higher positions.

People in Morocco suffered the largest HDI losses because of substantial inequality across all three dimensions, followed by Egypt and Tunisia. Egypt and Morocco, for example, each lost 28 % of their HDI largely because of inequality in education. The countries under investigation show the highest inequality in education followed by income dimension. The health dimension shows the smallest losses.

Losses in the education dimension ranged from 7.9 % in Israel to 43.6 % in Egypt. The loss in the income dimension was smaller than the educational loss but it was still high enough. People in Turkey suffered the biggest loss (26.5 %), and Egypt recorded the smallest loss at 15.6 %. The inequality-adjusted life expectancy

Table 18.12 Inequality-adjusted human development index (From HDR 2010)

	HDI	IHDI			Inequality-adjusted life expectancy at birth index		Inequality-adjusted education index		Inequality-adjusted income index		Income Gini coefficient
	Value	Value	Overall loss (%)	Change in rank	Value	Loss (%)	Value	Loss (%)	Value	Loss (%)	
Country	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2000–2010
Israel	0.872	0.763	12.5	−11	0.922	4.8	0.799	7.9	0.603	23.7	39.2
Libya	0.755	..	..	..	0.759	12.1	..	..	..	..	..
Tunisia	0.683	0.511	25.2	−6	0.751	12.7	0.378	38.7	0.469	21.8	40.8
Jordan	0.681	0.550	19.2	7	0.729	13.3	0.508	25.1	0.450	18.7	37.7
Turkey	0.679	0.518	23.6	1	0.690	16.5	0.405	27.4	0.498	26.5	41.2
Algeria	0.677	..	..	..	0.688	17.9	..	..	..	..	35.3
Egypt	0.620	0.449	27.5	−7	0.641	19.8	0.304	43.6	0.465	15.9	32.1
Syria	0.589	0.467	20.8	4	0.769	11.1	0.312	31.5	0.424	18.3	..
Morocco	0.567	0.407	28.1	2	0.670	18.3	0.246	42.7	0.409	20.7	40.9

at birth index, which was mainly driven by infant and child mortality, showed the smallest relative losses in all SEMC. Egypt experienced the largest loss of 19.8 % while Syria suffered only an 11.1 % loss and Israel a 4.8 % loss.

The above findings show the value of a truly multidimensional measure of inequality. Inequalities in health and education are a major challenge for policymakers.

In terms of health policy, programs are needed to reduce the gap in access to public services, such as vaccination programs for both the rich and the poor. And, as most schooling is publicly provided, greater efforts are needed to promote equitable access to education services.

18.6 Measuring Gender Inequality

The disadvantages facing women and girls are a major source of inequality. Measuring them can raise awareness of the importance of gender equality, permit monitoring progress in this area and keep governments accountable.

The GII, introduced by the HDR (2010), measures educational attainment, economic and political participation, and female-specific health issues at the national level. The GII is higher when gender disparities affect its various components. This results from the complementary character of individual GII components. For example, inequality in schooling tends to be correlated with uneven access to work opportunities and higher maternal mortality. Overlapping disadvantages are an important aspect of gender inequality, and capturing them is a major advantage of the GII. Low performance in one GII component cannot be fully compensated by high achievement in another.

The risk of death at childbirth is reduced through basic education, adequate nutrition, access to contraceptives, antenatal health services and skilled attendants at birth. However, such services are still unavailable to many women even if many of them are inexpensive.

As seen in Table 18.13, among the SEMC, the GII ranges from 0.332 in Israel to 0.714 in Egypt. This means that the gap between men and women is the largest in terms of all human development dimensions in Egypt, followed by Morocco and Syria. On the other hand, Libya has the smallest GII among Arab SEMC (0.504).

There is a strong correlation (0.93) between GII and the loss in HDI due to inequality (see Sect. 18.5 and Table 18.12). This suggests that countries with high inequality in human development also experience high inequality between women and men and vice versa. Morocco and Egypt are doing badly on both fronts, each with losses of more than 40 % (HDI inequality) and 70 % (gender inequality).

The SEMC record large variations in maternal mortality ratios, even in countries at similar human development levels. Algeria and Tunisia have a similar HDI to that of Jordan and Turkey, but Algeria's maternal mortality ratio is more than three times higher than that of Jordan. Morocco has the highest maternal mortality ratios

Table 18.13 Gender inequality index (From HDR 2010)

					Population with at least a secondary education (% ages 25 and older)		Labor force participation rate (%)	
	GII	Maternal mortality ratio	Adolescent fertility rate	Seats in parliament (%)	Female	Male	Female	Male
Country	2008	2003–8	1990–2008	2008	2010	2010	2008	2008
Israel	0.332	4	14.3	14.2	78.9	77.2	61.1	70.1
Libya	0.504	97	3.2	7.7	55.6	44.0	25.1	81.1
Tunisia	0.515	100	6.9	19.9	33.5	48.0	27.7	74.2
Jordan	0.616	62	24.5	8.5	57.6	73.8	24.7	78.3
Turkey	0.621	44	38.8	9.1	27.1	46.8	26.9	74.6
Algeria	0.594	180	7.3	6.5	36.3	49.3	38.2	83.1
Egypt	0.714	130	39.0	3.7	43.4	61.1	24.4	76.4
Syria	0.687	130	61.1	12.4	24.7	24.1	22.0	82.1
Morocco	0.693	240	18.9	6.2	20.1	36.4	28.7	83.6
Lebanon	..	150	16.2	4.7	..	..	24.1	74.8
Palestine	..	..	78.7	..	..	..	16.7	72.4

(240 deaths for 100,000 live births in 2003–2008), followed by Algeria and Lebanon.

Women have traditionally been disadvantaged in the political arena at all levels of government. To capture this disadvantage, the GII uses the ratio of female to male representatives in parliament. National parliamentary representation, which reflects women's visibility in political leadership and more generally, in society, has been increasing over time, even though the global average is still only 16 %. In 2008, Tunisia's parliament had the highest share of women (19.9 %), and Egypt had the smallest (3.7 %). Women's representation in parliament was less than 10 % in seven out of ten SEMC.

Higher educational attainment expands women's freedoms by strengthening their capacity to question, reflect and act on their condition and by increasing their access to information. Educated women are more likely to enjoy satisfaction at work, participate in public debate, care for their own and their family's health and take other initiatives. The GII focuses on differences in secondary and tertiary educational attainment. Only about one fifth of women in Morocco had completed their secondary and tertiary educations, as opposed to 57.6 % in Jordan and 77.2 % in Israel. The percentage of women with secondary and university degrees exceeded the corresponding percentage of men in Libya, Syria and Israel. The gap between men and women in this respect was the widest in Morocco, Turkey and Tunisia.

Female labor force participation, which includes both the employed and unemployed (actively looking for work) as well as those seeking part-time work, stagnated at around 51 % in 2008. Women in Arab countries have increased their

participation by about 9 % points since 1980, up to 27 % in 2008, which was still only about half of the global average. While useful, labor force participation neglects occupational segregation in the labor market and the gender wage gap.

In the SEMC, the female participation rate ranged from 17 % in Palestine to 38.2 % in Algeria and 61.1 % in Israel. In 2008, all of the SEMC except Israel and Algeria had female participation rates below 30 % and five SEMC had rates below 25 %. Women's participation in the labor market represented only one third of the corresponding rate for men.

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Chapter 19
Female Labor Force Participation and Economic Development

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19.1 Introduction

This chapter assesses the impact of changes in female labor force participation on the economic development of the SEMC. We used a combination of econometric and CGE modeling. In the first stage, an econometric model was used to assess the relationship between economic growth and female labor force participation. This drew on pooled time-series cross-section data for 160 countries, including the SEMC, for the period 1960–2008.

The aim of the exercise was to:

- Test the hypothesis that there is a U-shaped relationship between female labor force participation rates and economic development;
- Test the presence of region-specific effects which may impede women's entry into the labor force; and
- Obtain the coefficients to be used in the second stage of the analysis (CGE modeling).

A CGE model, the GEM-E3-MEDPRO, was used to simulate two alternative scenarios for the development of female labor force participation rates in the SEMC. The first of these simulated the effects of lower participation rates resulting from income trends forecast for the region in the period 2015–2030. The quantification of the relationship between income and female labor force participation was based on the econometric estimations obtained during the first stage of the analysis. We found the presence of region-specific characteristics (such as social, family and cultural norms) which might impede female entry into the labor force. The estimated coefficients suggest that the absence of such barriers could increase female

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labor force participation rates by 5 %. The second scenario simulated with the GEM-E3-MEDPRO model assessed the effects of removal of these barriers to the economic growth. The econometric results were used for the quantification of the assumptions employed in this scenario.

The econometric estimations complement both the evidence on the determinants of female labor force participation and the debate on the U-shaped relationship between these rates and economic growth. In its use of a CGE model, the study complements the methodologies already being used to assess the impact on economies of changes in female labor force participation.

We sought to advance discussions in the region itself about policies to promote female inclusion in economic life and growth.

The remainder of this chapter is organized as follows: Sect. 19.2 reviews the current situation and the literature on female labor force participation in the SEMC. Section 19.3 summarizes the methods and the data used in the econometric specification and the estimation results. Section 19.4 summarizes and discusses the results of the different simulations. Section 19.5 examines the implications of our findings for policy development.

19.2 Female Labor Force Participation in the SEMC

Most of the SEMC are undergoing a transformation in the wake of the Arab Spring. The region's social and economic prospects are uncertain. Nevertheless, the future may bring opportunity to enhance the economic, social, and political inclusion of women. Progress has been made in closing gender gaps in education and health outcomes. This has not yet translated into higher female participation in economic life:

- Female labor force participation rates in the region remain low in comparison to other developing and developed countries.
- Young entrants into the labor force, particularly women, face high levels of unemployment. In many of the SEMC, female unemployment rates are as high as 50 % (World Bank 2012).
- High unemployment rates discourage women from entering the labor force and restrict economic opportunities that are available to them.
- Jobs in the informal sector may mask women's underemployment while offering few benefits and limited job security. They may also underutilize the skills of educated women who have been unsuccessful in securing formal-sector job.

Several reasons have been suggested to explain lower female labor market participation in the SEMC, for example, religious values and norms. The available data point to a diversity within the region (Rauch and Kostyshak 2009; World Bank 2012). This implies that there are other factors which may offer a better explanation for low female labor participation rates in the SEMC.

Moghadam (2004a) and Ross (2008) have debated the role of oil in determining female labor participation rates in the region's oil-rich economies that tend to have non-diversified male-dominated private sectors; there are fewer employment opportunities for women, and most of those that do exist are in the public sector. Karshenas and Moghadam (2001) argue that the dependence on oil revenues and windfalls in natural resources which have sustained economic growth, limit the opportunities for women to work in tandem with the prevailing social conventions. Oil industries are capital intensive and the jobs generated favor male employment.

An increasing volume of work points towards religious and cultural factors and their manifestation in different regulations, social and family norms as important influences on women's rights and opportunities. Several authors have argued that cultural factors may be more important in explaining gender outcomes in the region (Youssef 1978; Clark 1991; Moghadam 2004a, b). Many argue that the dominance of the patriarchal family unit acts as a constraint on women's mobility and employment (Kandiyoti 1988; Moghadam 1993).

The patriarchal family is defined as a kinship-based unit in which members have defined gender roles derived from age and sex. Men are the ones engaged in economic activities (Karshenas and Moghadam 2001; Semyonow 1980) and women are economically dependent on them. In urban areas, it is the smaller, nuclear family, rather than the wider extended family, that is regarded as the patriarchal family, but the traditional division of labor into male breadwinners and female homemakers remains. This structure is protected by legal codes, social policies, and family laws, creating constraints on women's employment.

Furthermore, Karshenas and Moghadam (2001) support the view that female labor participation rates in the SEMC are influenced by the levels of pay offered as these economies modernize. The preservation of patriarchal family structures has been attributed to the fact that these are high-wage economies. Households can afford to keep female family members at home and out of paid employment.

19.3 Econometric Assessment: Methods, Data and Estimation Results

Our first step was to develop an econometric model of the determinants of female labor force participation rates. This was needed to quantify the region-specific barriers to female labor force participation and the relationship between economic growth and the participation rates. The resulting estimated coefficients were used to quantify the changes in female labor participation that were simulated by the GEM-E3-MEDPRO CGE model.

The economic literature provides a rich discussion on the determinants of female labor force participation and on its impact on economic growth. Whether or not women participate in the labor force seems to be decided jointly in their households. Individual education levels and influences of overall economic and labor

market conditions, such as the level of urbanization and unemployment, seem to play a role in this decision-making process.

There is evidence based on historical experience of developed countries and on multi-country studies that the relationship between female labor force participation and economic development is U-shaped (Boserup 1970; Durand 1975; Kottis 1990; Schultz 1991; Tam 2011). Goldin (1995) finds that in the US, female labor force participation fell during the initial stages of economic growth and began to rise later as this growth continued (hence the U-shaped pattern). Hill (1983), Mincer (1985), Pampel and Tanaka (1986) and Psacharopoulos and Tzannatos (1989) argue that high-income and low-income countries have the highest female labor force participation rates, while middle-income countries have the lowest.

Boserup (1970, 1990) and Goldin (1995) argue that when income is low, women often work in family farms and in small home-based businesses. As the economy develops, the place of production shifts from the home to factory and non-family enterprises, making it more difficult for women to combine their childbearing role and production activities and also making it more costly for them to work. Boserup (1970) argues that men's privileged access to education and new technologies displaces women from the labor force during the early stage of economic development. As development continues, women gain access to education and technologies and their labor force participation rate increases (the U-shape).

Other factors may include a reduction in the relative price of home-produced goods and a decline in the demand for women's labor in agriculture. Social custom or employer preference may hinder women's employment in manufacturing. In the growing industrial and service sectors, women may not be able to compete with men because of their lower educational attainments. They are also held back by tradition, culture and household responsibilities. However, as women's education improves and their wages relative to the price of goods rise, so does their participation in the labor force.

Goldin (1995) and Tam (2011) consider the income effects (change in labor supply as household income changes) and substitution effects (income remains constant, but changing wages lead to a change in the labor supply) that contribute to the U-shaped pattern. The declining part of the U-shaped curve suggests that a strong income effect dominates. In the rising part, the substitution effect of higher wages (away from home to market activities) dominates the small income effect (Mincer 1962; Killingsworth and Heckman 1986; Goldin 1995).

According to the theory of time allocation (Becker 1965, 1991; Heckman 1978; Killingsworth 1983), a decision by a woman to join the labor force is the result of a collective decision-making process in her household. The household maximizes a combined utility function subject to the constraints it faces in determining the times allocated to home work, paid work, and leisure for the individuals. Thus, the time allocated to paid work will depend on a number of personal (education) and household (income) characteristics and on overall economic and labor market conditions (economic growth, unemployment rates, urbanization, social norms).

Education can have an effect on an individual's decision to participate in the labor market and how much time to spend on employment (Tansel 2001). The

impact of education on female labor force participation is ambiguous. It depends on the relative strength of two forces: the substitution effect and the income effect. First, education increases the potential earnings and therefore the cost of not working (positive effect). Second, as a result of higher earnings, the income target is achieved sooner. The higher income can then be used to consume more leisure and reduce the need to work (negative effect).

Empirical studies by Tansel (1994, 1996) and Psacharopoulos and Tzannatos (1989) suggest that the substitution effect is stronger than the income effect and, therefore, that there are more educated females in the labor force. Smith and Ward (1985) and Kottis (1990) find that the relationship between education and the female labor participation is negative. Several researchers argue that the effect of education on female labor force participation depends on the stage of development of the country concerned. As such, the inclusion of education as a determinant of the female labor force participation rate is criticized on the grounds of multicollinearity and endogeneity bias.

The effects of unemployment on female labor force participation are ambiguous and depend on the strengths of the 'discouraged-worker effect' and the 'added-worker effect' (Tansel 2001). The higher the unemployment rate, the less likely it is that a woman will find a job. The economic and psychological costs associated with looking for work will be higher when the unemployment rate is high. For these reasons, women may be discouraged from looking for a job and may drop out of the labor force.

According to the 'added-worker' hypothesis, when unemployment increases and men lose their jobs, wives may enter the labor force in order to compensate for the loss of family income. The 'added-worker' hypothesis implies that local unemployment has a positive effect on female labor force participation.

However, the paucity of jobs for women means that the 'added-worker' effect is likely to be small. In practice, this means that the 'discouraged-worker' effect will probably prevail over the 'added-worker effect', ensuring that unemployment has a negative effect on female labor force participation.

The degree of urbanization is suggested to affect the number of jobs available and their accessibility (King 1978). Urban areas may offer more paid employment opportunities than rural areas. Thus, the higher the proportion of the population living in urban areas, the higher will be female labor force participation. This determinant is vulnerable to criticism because women in rural areas may participate in the labor force in large numbers as unpaid family workers on farms. This could mean that the overall participation of women in the labor force is low in a region where there is a large rural population. It could also lead to underestimating female labor force participation in urban areas.

Economic growth may boost female labor force participation because of the greater availability of jobs. Conversely, contraction of the economy reduces work opportunities and female labor force participation.

The above determinants of female labor force participation were used by us in the econometric specification:

$$FLPR_{i,t} = b_0 + b_1 GDP_{i,t} + b_2 LGDP_{i,t}^2 + \sum_{n=1}^{k-1} b_n X_{n,i,t} + b_k MED11_{i,t} + e_{i,t} \quad (19.1)$$

where $FLPR_{i,t}$ is female labor force participation rate, $LGDP_{i.t}$ is the log of the real GDP per capita, $LGDP_{i,t}^2$ its square, $X_{n,i,t}$ is a set of n variables controlling for education, fertility, urbanization, religious norms and unemployment rates. $MED11_{i,t}$ is a dummy control variable for the SEMC, $e_{i,t}$ is an error term capturing all other omitted factors, measurement errors, and possible misspecifications.

The econometric approach used pooled time-series cross-section data for a set of 160 countries for the period 1960–2008. $FLPR_{i,t}$ is defined as the number of female labor participants aged between 15 and 64 divided by the total female population of the same age group. Labor force participation is defined as employed (paid and unpaid family workers) plus unemployed (actively seeking work). Data on $FLPR_{i,t}$ were taken from the ILO figures. They came from available national censuses and were adjusted so that agricultural and unpaid family workers, definitions of unemployment, members of the armed forces and reference periods were treated consistently for all nations. Data on real GDP, unemployment, urbanization, fertility rates and school enrolment were taken from the WB WDI database (2011 edition).

Table 19.1 summarizes the estimation results under alternative specifications. The estimation results remained robust when alternative control variables were used, thus confirming the arguments developed in the literature on the determinants and characteristics of female labor force participation. The econometric estimations confirmed the U-shaped hypothesis on the relationship between the female labor force participation and economic growth.

Women's childbearing role and social conventions were found to have negative implications for their labor force participation, while education (as measured by enrolment for primary, secondary and tertiary education) was found to have a positive influence. The control variable for urban population was inconclusive.

To ensure robustness of the estimation results, the model summarized in Eq. 19.1 was tested further on a balanced dataset. Only the countries/years for which data for all the explanatory variables were available were included in the analysis. This was done in an attempt to rule out the possibility that the differentials among the alternative results might be due to the different samples used. The estimation results confirmed the initial findings on the U-shaped hypothesis as well as those on the impact of the control variables. The robustness of the model was checked further by carrying out alternative estimations with past values for the control variables. The estimation results confirmed the findings. The model was difficult to estimate using a time-series analysis due to the poor quality and availability of the data.

When controlling for region-specific characteristics that may not be adequately captured by the model (Table 19.1, column 12), the estimation results confirmed that the SEMC recorded lower female labor force participation rates when compared to other developed and developing countries included in the dataset. The estimated coefficients for the relationship between income and female labor force participation and for the SEMC (a dummy variable) were used in the second stage

Table 19.1 Female labor force participation rates (From Authors' estimates)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
lgdpcap	−39.92***	−13.52**	−42.67***	−86.60***	−41.68***	−84.39***	−73.24***	−48.30***	−31.99**	−77.97***	−35.81***	−33.890***
	(4.876)	(6.363)	(5.173)	(9.292)	(8.566)	(9.576)	(4.476)	(4.666)	(4.636)	(9.323)	(9.348)	(9.361)
lgdpcap^2	6.602***	2.891***	6.879***	12.32***	5.166***	12.01***	9.843***	7.398***	5.324***	10.16***	4.336***	4.117***
	(0.696)	(0.883)	(0.717)	(1.246)	(1.148)	(1.288)	(0.624)	(0.663)	(0.663)	(1.221)	(1.234)	(1.234)
unempl		−0.161***								−0.131*	−0.0625	−0.0386
		(0.059)								(0.070)	(0.093)	(0.094)
urban			0.0302							0.0402*	−0.104***	−0.0964***
			(0.019)							(0.024)	(0.030)	(0.030)
primary_net				0.312***						0.133**		
				(0.043)						(0.051)		
secondary_net					0.329***						0.395***	0.368***
					(0.028)						(0.044)	(0.046)
tertiary_net						0.304***						
						(0.044)						
fertility							−5.262***			−4.647***	1.221	0.922
							(0.208)			(0.463)	(0.803)	(0.815)
muslim80								−0.152***		−0.116***	−0.102***	−0.085***
								(0.009)		(0.013)	(0.015)	(0.017)
med11									−15.35***			−5.111*
									(1.068)			(2.678)
Constant	87.22***	45.07***	91.60***	152.7***	93.73***	149.2***	179.5***	108.8***	76.77**	180.3***	84.69***	82.64***
	(8.351)	(11.16)	(8.793)	(14.61)	(15.17)	(15.02)	(8.191)	(8.080)	(7.917)	(15.91)	(18.12)	(18.07)
Observations	1,687	1,081	1,687	712	336	634	1,500	1,591	1,687	522	307	307
Adjusted R-sq	0.139	0.174	0.140	0.195	0.343	0.190	0.382	0.257	0.234	0.426	0.460	0.476

Notes: Dependent variable: Female labor force participation rate. Estimations based on Pooled OLS. Standard errors in parentheses. * Significant at 10 %, ** significant at 5 %, *** significant at 1 %. For sources and definitions of variables – see Table 19.A1

of modeling, where GEM-E3-MEDPRO, a CGE model has been used for the simulation of the alternative assumptions on female labor force participation rates in those countries. The coefficients estimated in the dummy variable were assumed to capture cultural and social norms specific to the region, not captured by other covariates, which may be found in family structures and legal codes and restrict the rate of female participation in the labor force.

19.4 GEM-E3-MEDPRO Simulation Results

The GEM-E3-MEDPRO model[1] was used to simulate alternative scenarios. This is a CGE multi-country model, treating each country separately and linking them through endogenous trade in goods and services. It covers several different industrial sectors and economic agents, allowing consistent evaluation of policies' distributional effects. It is dynamic recursive over time, involving dynamics of capital accumulation and technological progress, stock and flow relationships, and retrospective expectations. It covers the major aspects of public finance including all substantial taxes, social policy subsidies, public expenditure, and deficit financing.

The GEM-E3-MEDPRO model can be applied worldwide. The version used for this study covers 19 countries/regions and 23 economic activities (see Tables 19.A2 and 19.A3 in the Appendix.) It covers the period from 2010 to 2030 in 5-year steps and is calibrated on the GTAP v.8 database (which has 2007 as its base year – see https://www.gtap.agecon.purdue.edu/). In the case of those SEMC which have no data available on the GTAP, the authors developed a detailed database including social accounting, consumption, trade, and investment matrices.

In CGE models, it is the deviations from the reference scenario which are the key to evaluating structural changes. The reference scenario relates to the development of an economic outlook for each region and sector of the GEM-E3-MEDPRO model and requires assumptions to be made for the main drivers of growth, population growth, and expectations of exogenous growth.

We used the reference scenario developed by Paroussos et al. (2012). In their assumptions on the labor force, Paroussos et al. (2012) do not distinguish between

[1] The GEM-E3-MEDPRO model is a version of the GEM-E3 model which was created in the 1990s by a consortium involving the National Technical University of Athens-E3MLab, the Catholic University of Leuven (Centre for Economic Studies), the University of Mannheim and the Centre for European Economic Research (ZEW) as the core modeling team. The original model has been extended several times by E3MLab and other partners and there are now versions suitable for analyzing growth, market reforms (such as the EU's internal market) and structural policies. It has been used extensively in a series of studies undertaken for the European Commission and in several research projects. See: http://www.e3mlab.ntua.gr/index.php?option=com_content&view=category&id=36%3Agem-e3&ltemid=71&layout=default&lang=en, http://ipts.jrc.ec.europa.eu/activities/energy-and-transport/gem-e3/

male and female workers. In this chapter we extended the scenario by making appropriate assumptions on the female and male shares of the labor force and on female participation rates.

Active population data for the base year came from the ILO (www.ilo.org) and active population growth rates from Groenewold et al. (2012). They developed four alternative demographic scenarios (S1-S4) for each SEMC up to 2050. The scenario S1 (extrapolation of past trends) was used as the reference scenario. It assumes that the EU continues to impose severe restrictions on legal immigration and that refugee stocks will not alter. The presence of refugees (such as Iraqi refugees in Jordan) will put pressure on available national resources (health, housing) and the ecosystem, and that this may affect health of the host population. As result, the net migration rates observed in 2005–2010 for individual countries are assumed to remain constant for the whole projection period, with the exception of the sub-period of 2010–2015 for which the political turmoil and insecurity in some SEMC will lead to increased emigration. The presence of large refugee stocks may affect labor (im)migration flows as refugees try to compete in the local labor market.

The observed decline of fertility rates in most SEMC is assumed to continue and eventually remain at 2.1, the constant replacement level. It is also assumed that the current differences in countries' respective life expectancy rates will remain unchanged.

The figures for the male and female shares of the active population came from the ILO database. The ILO provides projections for the period up to 2020; it was assumed that trends recorded over the period 2007–2020 would continue from 2020 to 2030. Labor participation rates were taken from Paroussos et al. (2012). Data on the proportion of female labor force were taken from the WB WDI (2011 edition). It was assumed that it would not change up to 2030 (Table 19.2). Combining these data, projections, and assumptions made it possible to calculate the female labor force participation rates for the reference scenario.

Two alternative cases were simulated and compared to the reference scenario. In both of these, the econometric estimations were used to calculate the size of the female labor force that was fed into the model. The first alternative assumed that the growth in per capita income would lead to lower female labor participation rates. This was based on the supposition that, from 2015 to 2030, women might not be able to compete with men for jobs in the industrial and service sectors due to employer preferences or cultural and social norms. It was assumed further that income effects would be strong and dominate. In other words, changes in household income would have an impact on the supply of female labor. The econometric estimations on the relationship between income levels and female labor participation rates were used to quantify these assumptions and calculate the changes in female labor force participation rates.

In the second alternative, the GEM-E3-MEDPRO model was used to assess the effects of higher female labor participation rates. Here it was assumed that region-specific barriers to women's entry into the labor force, such as cultural factors and family norms, would cease to exist.

Table 19.2 Reference scenario female labor force in year 2030, as a % of total labor force (From authors' estimation)

Country	2030
Algeria	15.83
Egypt	23.73
Israel	46.60
Jordan	17.47
Lebanon	25.20
Libya	27.84
Morocco	27.42
Palestine	17.88
Syria	16.06
Tunisia	26.65
Turkey	25.91

The quantification of this scenario was based on the econometric estimations for the dummy control variable for the SEMC which suggested that the removal of region-specific barriers could lead to female labor force participation rates increasing by 5 % between 2015 and 2030. We assumed the same rate of increase in each SEMC except Israel where the female labor force participation rate would increase by 1 % above the reference scenario.

In the first simulation, female labor force participation was assumed to be lower than in the reference scenario (leading to a smaller entire labor force pool). In the second case, female labor force participation was higher for all of the SEMC compared with the reference scenario. The estimated changes in female labor force participation were applied to the participation rates adopted in the reference scenario so as to derive the new estimates to be input into the alternative scenarios.

These figures were added to the figures assumed for the male labor force in the reference scenario. Hence the only changes in the alternative scenarios as compared with the reference one came from different assumptions on the female labor force in each SEMC (see Tables 19.3 and 19.4).

In the first simulation, female labor force participation was assumed to be lower than in the reference scenario (leading to a smaller entire labor force pool). In the second case, female labor force participation was higher for all of the SEMC compared with the reference scenario. The estimated changes in female labor force participation were applied to the participation rates adopted in the reference scenario so as to derive the new estimates to be input into the alternative scenarios.

These figures were added to the figures assumed for the male labor force in the reference scenario. Hence the only changes in the alternative scenarios as compared with the reference one came from different assumptions on the female labor force in each SEMC (see Tables 19.3 and 19.4).

Table 19.5 summarizes the impact of lower female labor force participation on GDP, wages, and trade in the individual SEMC, which is small because this participation is low in most of them. Small changes in female participation rates mean small changes in the total labor force and so would not have a significant

Table 19.3 Change in female labor force and total labor force when lower female labor force participation rates are assumed (From authors' estimation)

	Labor force change from reference, cumulatively from 2015 to 2030		
Country	Female, in %	Total, in mn	Total, in %
Algeria	−2.76	−0.89	−0.44
Egypt	−1.60	−2.04	−0.38
Israel	−1.30	−0.37	−0.61
Jordan	−3.01	−0.18	−0.53
Lebanon	−1.51	−0.10	−0.38
Libya	−1.33	−0.16	−0.37
Morocco	−1.61	−0.92	−0.44
Palestine	−0.84	−0.04	−0.15
Syria	−1.80	−0.35	−0.29
Tunisia	−2.33	−0.43	−0.62
Turkey	−1.91	−2.41	−0.49

Table 19.4 Change in female labor force and total labor force when higher female labor force participation rates are assumed (From authors' estimation)

	Labor force change from reference, cumulatively from 2015 to 2030		
Country	Female, in %	Total, in mn	Total, in %
Algeria	22.69	7.34	3.59
Egypt	8.09	10.34	1.92
Israel	1.39	0.40	0.65
Jordan	16.58	0.98	2.90
Lebanon	9.74	0.66	2.45
Libya	7.14	0.86	1.99
Morocco	8.40	4.78	2.30
Palestine	9.73	0.41	1.74
Syria	13.67	2.66	2.20
Tunisia	9.33	1.72	2.49
Turkey	8.95	11.31	2.32

impact on macroeconomic variables. In Israel, the effects are greater because the labor force is divided equally between women and men.

Lower female participation in the labor force decreases labor supply and wages increase as a result. Higher wages mean higher production costs. SEMC exports become less competitive; domestic production contracts and imports of intermediate goods reduce as a result. A deteriorating trade balance and lower consumption and investments all reduce GDP. The effects on GDP are more pronounced in Tunisia and Morocco, where labor-intensive sectors like textiles and public service are important. SEMC GDP was found to contract by 0.3 % cumulatively between 2015 and 2030, and be USD 123bn (in 2007 values) lower than in the reference scenario.

Table 19.5 Impact on wages, GDP and trade of lower female labor force participation rates, change from reference scenario, in %, cumulatively from 2015 to 2030 (From GEM-E3-MEDPRO)

Country	GDP	Real wage (man hour)	Imports	Exports
Algeria	−0.20	0.79	−0.15	−0.18
Egypt	−0.23	0.54	−0.15	−0.13
Israel	−0.45	0.37	−0.39	−0.44
Jordan	−0.25	0.82	−0.22	−0.20
Lebanon	−0.30	0.44	−0.27	−0.27
Libya	−0.12	1.31	−0.05	−0.10
Morocco	−0.32	0.42	0.27	−0.26
Palestine	−0.03	0.13	0.07	−0.18
Syria	−0.19	0.40	−0.12	−0.14
Tunisia	−0.46	1.09	−0.4	−0.41
Turkey	−0.31	0.94	−0.24	−0.23

Table 19.6 Impact on wages, GDP, trade, and investment of higher female labor participation rates, change from reference scenario, in %, cumulatively from 2015 to 2030 (From GEM-E3-MEDPRO)

Country	GDP	Real wage (man hour)	Imports	Exports	Investment
Algeria	1.57	−6.11	1.02	1.27	1.33
Egypt	1.10	−2.69	0.71	0.65	0.65
Israel	0.48	−0.38	0.44	0.48	0.28
Jordan	1.33	−4.33	1.15	1.05	0.87
Lebanon	1.90	−2.78	1.68	1.64	1.12
Libya	0.59	−6.57	0.21	0.49	0.39
Morocco	1.59	−2.18	1.37	1.33	1.16
Palestine	0.25	−1.69	0.29	0.40	0.28
Syria	1.41	−2.96	0.83	1.00	0.89
Tunisia	1.73	−4.25	1.55	1.57	1.23
Turkey	1.42	−4.17	1.08	1.04	1.11

In the second alternative, increased female labor force participation increases labor supply and the cost of labor and wages fall as a result. This drives production costs down and makes SEMC exports more competitive in international markets. The reduced prices, resulting from lower labor costs, increase private consumption. Higher consumption and investments lead to growth in GDP (Table 19.6). As with the first alternative, the effects of increased female labor force participation are more pronounced in countries where labor-intensive sectors dominate. From 2015 to 2030, Lebanon, Tunisia, and Morocco record the largest cumulative change in GDP when compared with the reference scenario. In Tunisia, the change is of USD 20bn, in Morocco and Lebanon USD35bn and 12bn, respectively (all in 2007 values). Oil-producing Algeria and Libya record a higher drop in real wages but

the impact on economic growth is limited as these economies are dominated by capital-intensive sectors.

Summing up, the effects on GDP of increased female labor force participation are considerable. An increase of 5 % in female labor force participation rates leads to a cumulative decrease in real wages of 3.5 % for the whole region between 2015 and 2030. This results in a cumulative 1.3 % increase in GDP above the reference scenario over the same period; in monetary terms, this equates to an increase of USD 525 bn (2007 values).

19.5 Concluding Remarks and Policy Implications

Female labor force participation may decrease if economic growth in the region is modest and may increase if it is sufficiently high. Qualitative characteristics specific to the SEMC may explain the low levels of female participation.

The econometric results were fed into the GEM-E3-MEDPRO model used to simulate two alternative assumptions on female labor participation in the region. The first case simulated the fall in this participation caused by changing income levels in the SEMC and estimated from the population and GDP growth assumptions used in the reference scenario. The second alternative assumed the lowering of region-specific barriers which deter female labor force participation.

Lower female labor participation rates may have marginal effects on the macroeconomic outcomes in the region. In contrast, if barriers to women joining the labor force are removed and their participation increases, the economic benefit may be significant.

The importance of our findings lies in their policy implications. They suggest that policies aimed at removing region-specific barriers to female labor force participation may enhance economic growth. The female labor force remains an untapped resource of the SEMC. Thus efforts should be made to remove barriers to women's entry into the labor force.

The focus should be on policies and cooperation strategies which promote the modernization of cultural norms and legal codes. These could include legislative reform, changes to the education curriculum, encouraging more female attendance at school, and cultural exchange and cooperation programs with developed countries. Deeper cultural integration with the EU could help. The EU could share its experience with policies promoting female labor participation.

Appendix

Table 19.A1 Variables' sources and definitions

Variable	Definition	Source
flpr	Female labor participation rate, defined as the number of female labor participants of age 15–64 divided by the total female population of the same age group	ILO LABOURSTA database
lgdpcap	Log of GDP per capita. Authors' estimations based on GDP data (in constant 2000 USD) and total population figures	WB WDI database
unempl	Unemployment, total (as % of total labor force)	WB WDI database
urban	Urban population (as % of total)	WB WDI database
primary_net	School enrolment, primary, female (as % of net)	WB WDI database
secondary_net	School enrolment, secondary, female (as % of net)	WB WDI database
tertiary_net	School enrolment, tertiary, female (as % of net)	WB WDI database
fertility	Fertility rate, total (births per woman)	WB WDI database
muslim80	Muslims, as % of total population in 1980	La Porta et al. (1999)
med11	Dummy variable taking the value of 1 in case of SEMC, 0 otherwise	Authors' compilation

Table 19.A2 GEM-E3-MEDPRO sectoral aggregation

No	Sector	No	Sector
1	Agriculture	13	Transport equipment
2	Animal products	14	Consumer goods industries-Food
3	Coal	15	Consumer goods industries-Rest
4	Crude oil	16	Textiles and clothing
5	Oil refining	17	Construction
6	Natural gas extraction	18	Transport
7	Gas distribution	19	Communication
8	Transmission and distribution of electricity	20	Business-Financial services
9	Water	21	Public services
10	Chemical products	22	Recreational and other services
11	Other energy intensive	23	Dwellings
12	Electric goods-other equipment goods		

Table 19.A3 GEM-E3-MEDPRO regional aggregation

No	Country	No	Region
1	Algeria	12	EU15
2	Egypt	13	EU10 (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia, Bulgaria, Romania)
3	Israel		
4	Jordan	14	EU-MED
5	Lebanon	15	Emerging Asia (China, Hong Kong, Taiwan, Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam and India)
6	Libya		
7	Morocco	16	Rest of OECD (Australia, New Zealand, Rest of Oceania, Japan, Korea, Canada, US, rest of North America, Switzerland, Norway and Rest of EFTA)
8	Palestine		
9	Syria	17	Rest of emerging economies (Mexico, Argentina, Brazil, Chile, Venezuela, Albania, Belarus, Croatia, Russia, Ukraine, Rest of CEE, Rest of Europe, Kazakhstan, Kyrgyzstan, rest of FSU, Azerbaijan and Georgia)
10	Tunisia	18	Rest of Middle East (Armenia, Bahrain, Iran, Kuwait, Oman, Qatar, Saudi Arabia, UAE, Yemen and Iraq)
11	Turkey	19	Rest of the world

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Part V
Summary

Chapter 20
The Economic and Social Policy Reform Agenda in the SEMC: Towards a Sustainable Transition

Rym Ayadi, Marek Dabrowski, and Luc De Wulf

20.1 Introduction

The average GDP per-capita level in the SEMC is lower than the world average. In 2010 it ranged from nearly USD30,000 in Israel to less than USD5,000 in Morocco. The pace of economic growth in the SEMC was not particularly impressive for quite a long time (see Chap. 1), especially in the 1980s and early 1990s, when several countries recorded either a decline or a stagnation in output (related to low oil and commodity prices, among other reasons). A visible improvement came only in the decade of the 2000s, but it did not fully compensate for the previous poor performance and differed across countries. As of the beginning of the Arab Spring, the growth record deteriorated again (Table 20.1).

Per-capita income growth was tempered by high population growth (more than 2 % annually) compared with an annual rate of 1.2–1.3 % for the entire world. The growth performance of the region was not sufficient to reduce unemployment, which is in excess of 10 % in most countries, with even higher rates for female workers. Youth unemployment, at 25 % or more, is the highest in the world (ILO 2012). Emigration is high and labor migrant remittances contributed to strengthening the external positions of several SEMC, particularly Lebanon, Jordan and Palestine and, to a lesser extent, Morocco, Tunisia and Egypt. The long-term growth prospects of the major hydrocarbon producers (Libya, Algeria and, to a lesser degree, Syria) remain highly dependent on oil and natural gas prices.

Persistent high unemployment, growing income disparities, an unequal playing field in business, corruption and nepotism, poor governance, the conspicuous

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Table 20.1 Annual growth in real GDP, in % 2007–2013 (From the IMF WEO database, April 2014)

Country	2007	2008	2009	2010	2011	2012	2013
Algeria	3.4	2.4	1.6	3.6	2.8	3.3[a]	2.7[a]
Egypt	7.1	7.2	4.7	5.1	1.8	2.2	2.1
Israel	6.9	4.5	1.2	5.7	4.6	3.4	3.3[a]
Jordan	8.2	7.2	5.5	2.3	2.6	2.7	3.3
Lebanon	9.4	9.1	10.3	8.0	2.0	1.5[a]	1.0[a]
Libya	6.4	2.7	−0.8	5.0[a]	−62.1[a]	104.5[a]	−9.4[a]
Morocco	2.7	5.6	4.8	3.6	5.0	2.7	4.5
Syria	5.7	4.5	5.9	3.4	n.a.	n.a.	n.a.
Tunisia	6.3	4.5	3.1	2.9	−1.9	3.6	2.7[a]
Turkey	4.7	0.7	−4.8	9.2	8.8	2.2	4.3[a]

[a]IMF staff estimates

consumption of a small elite, and the lack of a political voice have led to broad discontent, as seen in the revolutionary events of the Arab Spring in 2011–14. It is too early to assess their impact on long-term governance, economic policies and growth performance. In the short term, the political turbulence and violent conflicts (such as those in Syria, Egypt and Libya) have damaged macroeconomic stability, the investment climate, and trade, tourist and financial flows. This has had negative effects on growth performance. Political instability also produced populist policy decisions. For example, the phasing-out of subsidies has been either suspended or even reversed in some countries as social unrest has put pressure on governments to offset the impact of surging global food and fuel prices, adding to the already existing fiscal imbalances (Dabrowski 2014).

In this chapter, we summarize the policy recommendations that have emerged in the previous chapters of this volume. They concern macroeconomic and fiscal management, trade and economic integration, investment, private sector development and privatization, the financial sector and other sectors/industries of crucial importance, social policy and human capital development.

We also discuss the role of the EU as the large and economically more developed neighbor and the key trade and investment partner of the SEMC, which contributes, in various ways, to the economic and social modernization of the SEMC.

20.2 Maintaining Macroeconomic and Fiscal Stability

The analysis of Chap. 1 confirms that macroeconomic stability (measured by inflation and budget deficits), openness to trade, investment and FDI (for which a good business climate and a predictable macroeconomic environment are essential), a developed financial market and good infrastructure help economic growth.

In addition, education in an environment of good governance is also favorable to economic growth (De Wulf et al. 2010).

20.2.1 Fiscal Imbalances

Several SEMC are experiencing serious fiscal challenges. These are manifested, among others, through high and increasing fiscal deficits (Table 20.2) and a high (by emerging-market standards) gross public debt to GDP ratio. In 2013, it was close to 140 % in Lebanon, close to 90 % in Egypt and Jordan, over 65 % in Israel and over 60 % in Morocco (Table 20.3). Such a high level of indebtedness can lead to various adverse macroeconomic consequences such as problems with continuous debt financing/rollover (risk of sovereign insolvency), a narrowing of the room for maneuver in expenditure policy (as a result of growing interest payments), higher taxation, and increasing debt monetization (which, in turn, can lead to higher inflation, depleting official reserves, currency instability, etc.).

Fiscal adjustment should involve both expenditure and revenue measures. Expenditure growth should be contained and targeted at budget objectives that are clearly defined. This requires a continuous expenditure review that involves a detailed analysis of those policies that have the biggest impact on the total spending bill. In particular, a reduction of price subsidies, a rationalization of public employment and a further reduction in military and security expenditure are the three priority measures that may reduce fiscal imbalances in the SEMC. In the longer term, budgetary expenditures should be reviewed to enhance their effectiveness and efficiency.

Table 20.2 GG net lending/borrowing, % of GDP, 2007–2013 (From the IMF WEO database, April 2014)

Country	2007	2008	2009	2010	2011	2012	2013
Algeria	6.1	9.1	−5.5	−0.4	−0.4	−4.2	0.1[a]
Egypt	−7.5	−8.0	−6.9	−8.3	−9.8	−10.5	−14.1
Israel	−1.5	−3.7	−6.3	−4.6	−4.2	−3.9	−3.2[a]
Jordan	−4.7	−4.3	−8.5	−5.6	−6.8	−8.2	−5.3
Lebanon	−11.0	−10.0	−8.2	−7.6	−5.9	−8.7	−9.5
Libya	28.6	28.3	6.2	17.2	−6.6	25.9[a]	1.6[a]
Morocco	−0.1	0.7	−1.8	−4.4	−6.7	−7.3	−5.4
Syria	−3.0	−2.9	−2.9	−7.8[a]	n.a.	n.a.	n.a.
Tunisia	−2.0	−0.6	−1.2	−0.9	−3.5	−5.2	−5.9[a]
Turkey	−2.0	−2.7	−6.0	−3.4	−0.7	−1.8	−1.5

[a]IMF staff estimates

Table 20.3 GG gross debt, % of GDP, 2007–2013 (From the IMF WEO database, April 2014)

Country	2007	2008	2009	2010	2011	2012	2013
Algeria	13.9	8.8	10.8	11.7	9.9	9.6	9.2[a]
Egypt	80.2	70.2	73.0	73.2	76.6	78.9	89.2
Israel	74.6	72.9	75.3	71.5	69.7	68.2	66.7[a]
Jordan	73.8	60.2	64.8	67.1	70.7	80.2	87.7
Lebanon	171.0	163.1	145.6	138.4	133.9	135.7	139.7
Libya	0.0	0.0	0.0	0.0	0.0	0.0[a]	0.0[a]
Morocco	54.6	48.2	48.0	51.3	54.4	60.2	61.9
Syria	42.7	37.3	31.2	30.0[a]	n.a.	n.a.	n.a.
Tunisia	45.9	43.3	42.8	40.3	44.4	44.3	44.4[a]
Turkey	39.9	40.0	46.1	42.3	39.1	36.2	35.8

[a]IMF staff estimates

20.2.2 Energy and Food Subsidies

A major fiscal challenge relates to generalized price subsidies to energy and food which continue to put a huge fiscal burden on several SEMC, especially Egypt, Algeria, Libya, Jordan and Lebanon. Most of this burden relates to energy subsidies, i.e., subsidies to petroleum, electricity, natural gas, and coal. The cost of food subsidies is relatively smaller; it averages to 0.7 % of the GDP of the MENA region (IMF 2013a: 42), but ranges between 1 % and 2 % of GDP in Libya, Tunisia, and Egypt.

The IMF (2013a: 42) estimated the total cost of pre-tax energy subsidies in MENA, defined as the difference between the value of supplied products and services at either international prices (tradable goods) or cost-recovery prices (non-tradable goods) and domestic prices paid by their consumers, both final and intermediate, at the level of USD 236.7 bn, i.e., 8.6 % of their GDP and 22 % of GG revenue in 2011. About half of this was absorbed by subsidies to diesel and gasoline. In a global comparison, MENA is the region with the highest energy subsidies; they constituted almost half of total pre-tax world energy subsidies in 2011. If one adds implicit tax subsidies (measured as the difference between efficient taxation, which takes into account externalities such as the environmental impact of energy production and consumption and actual tax subsidies), the total post-tax energy subsidies in the MENA region approach 15 % of GDP (Clements et al. 2013).

Table 20.4 presents estimates of energy subsidies in individual SEMC and their disaggregation into major energy products. Pre-tax subsidies are the highest in oil- and gas-exporting Algeria and Libya and oil-importing Egypt but are also substantial in other SEMC apart from Israel, Morocco and Turkey. However, the product structure of subsidies differs among countries. Large subsidies to petroleum products are provided in Algeria, Egypt, and Libya and, to a lesser extent, Jordan. The highest electricity subsidies are recorded in Lebanon, followed by Jordan, Egypt

Table 20.4 Subsidies for energy products in SEMC, 2011, as % of GDP (From Clement et al. 2013, Appendix A, Tables 2 and 4)

	Petroleum products		Electricity		Natural gas		Coal	
Country	Pre-tax	Post-tax	Pre-tax	Post-tax	Pre-tax	Post-tax	Pre-tax	Post-tax
Algeria	4.30	6.11	1.08	1.15	5.36	6.07	0.00	0.00
Egypt	6.74	8.60	2.30	2.50	1.60	2.59	0.00	0.05
Israel	0.00	0.00	n.a.	n.a.	n.a.	0.10	n.a.	0.54
Jordan	2.15	5.27	3.81	4.10	n.a.	0.34	n.a.	n.a.
Lebanon	0.07	3.57	4.46	4.61	n.a.	0.17	n.a.	0.11
Libya	6.40	8.81	1.85	2.33	0.59	1.49	0.00	0.00
Morocco	0.66	2.83	n.a.	n.a	n.a.	0.04	n.a.	0.33
Tunisia	0.77	2.56	2.23	2.43	n.a.	0.70	n.a	n.a.
Turkey	0.00	0.00	n.a.	n.a.	n.a.	0.31	0.02	0.66

and Tunisia. Subsides to natural gas are the highest in Algeria. Coal subsidies are of marginal importance in the analyzed region.

Although poverty alleviation remains a major and legitimate policy objective, it is often overused as a justification for substantial price subsidies for energy and food. In fact, the higher- and middle-income groups are major beneficiaries of these subsidies. In addition, the subsidies have devastating microeconomic and structural impacts: discouraging producers of subsidized products (energy and agricultural products) from increasing their output and quality parameters, stimulating excessive and wasteful consumption, damaging the environment, hampering the development of renewable energy, etc. (see Bergasse et al. 2013 for an analysis of energy subsidies).

Energy and food subsidies crowd out other important expenditures by absorbing a substantial share of fiscal resources; in Egypt they are half of GG revenue and in Algeria, Jordan, Lebanon and Libya they are between 20 % and 30 % of GG revenue. For example, public spending on education is much lower than spending on energy subsidies in Algeria, Egypt, Libya, Jordan and Lebanon (IMF 2013a: 42).

Price subsidies should be replaced by targeted social safety nets, including targeted cash transfers following, among others, the experiences of CEE or Turkey (see Clements et al. 2013 for a broader overview of experiences related to subsidy reforms). They would absorb part of the resources economized as a result of the elimination/reduction of subsidies. Another part of budget savings would remain and would help reduce the fiscal deficit or increase expenditure for priority public goods such as education, healthcare and transport infrastructure (see Sects. 20.6 and 20.7).

20.2.3 Oversized Public Employment

The low effectiveness of public sector employment is another big challenge in the region. Several SEMC hoard an excessive labor force in both public administration

bodies and agencies of various levels. State-owned enterprises also serve as an instrument of social policy, with the aim of reducing high unemployment and providing income support to at least part of the population. Too often such employment policies disproportionally benefit relatives, friends, political supporters, retired military and law enforcement personnel. In other cases, jobs are offered in exchange for material goods.

Needless to say, such policies do not meet their goal: instead of reducing poverty, they put a heavy burden on public finances and the economy. According to the IMF (2013a: 98–99), countries with a higher share of spending on public sector wages and salaries in total budget expenditure experience greater income inequality.

In addition, an oversized, incompetent and often corrupt public service is not able to provide basic public goods and, instead, inhibits private sector development and its ability to provide productive jobs. On the other hand, inefficient public enterprises distort competition and the allocation of resources.

According to the IMF (2013b: 45), in 2011, the public-sector wage bill exceeded 7 % of GDP in Turkey and Egypt (where the number of public employees is equal to a quarter of the population). It oscillates around 12 % of GDP in Algeria, Morocco and Tunisia.

The oversized public service must be reduced in terms of the number of employees. However, the remaining staff should be better paid and selected on the basis of professional competence rather than political and personal relations. Also, the subsidization of state owned enterprises that operate with excessive staff levels has to end or at least be substantially reduced and loss-making firms should either be closed down or restructured. The SEMC should continue to privatize their state owned financial and non-financial corporations in an open, competitive and transparent manner (Sect. 20.4.3). Revenue from privatization can contribute to a reduction of the public debt.

Increasing job creation in the public sector should be replaced by policies that emphasize job creation in the private sector (which requires labor market reform and an improvement of the business climate – see Sect. 20.4.2).

20.2.4 Military Expenditure

Unresolved regional and internal conflicts as well as the authoritarian or semi-authoritarian character of many political regimes in the region are responsible for high expenditures on defense and law enforcement agencies.

Although military expenditure in the SEMC has decreased substantially as a % of GDP compared to the record-high spending levels of the 1980s and early 1990s (Fig. 20.1), it continues to exceed the world average in all analyzed countries except for Tunisia. Israel is the highest military spender in the region and one of the highest in the world followed by Jordan, Lebanon, Syria, Algeria and Morocco. Egypt's expenditures on defense have gone down systematically (in relative terms) from

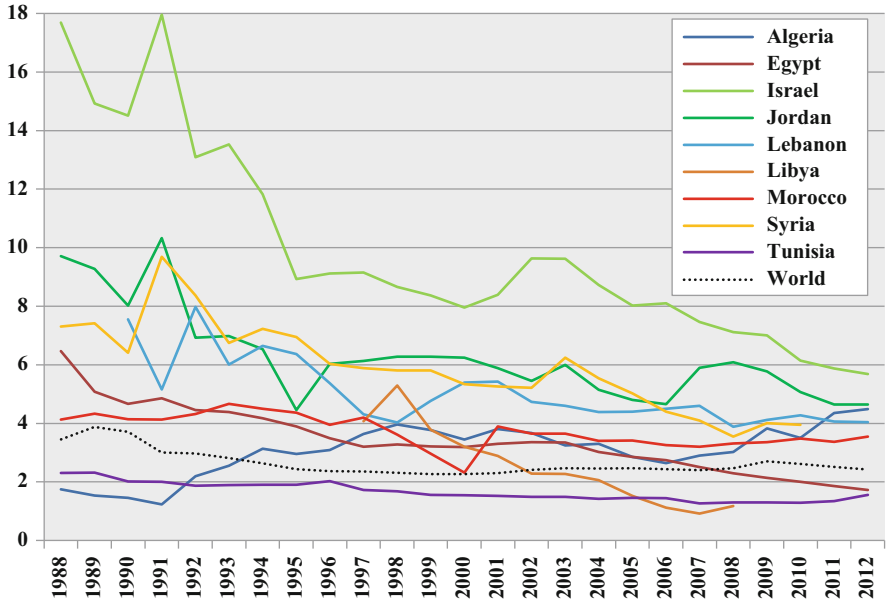

Fig. 20.1 Military expenditure, % of GDP, 1980–2012 (From WB WDI)

over 6 % of GDP at the end of the 1980s to less than 2 % of GDP after the Arab Spring.

The above data clearly indicate the remaining huge potential of the so-called peace dividend in the region. Further cuts in those expenditures would not only help restore the sorely needed fiscal balance but would also create room for the provision of more and better non-military public goods such as education or infrastructure. Indirectly, resolving existing conflicts could facilitate opening borders and boosting intra-regional trade and economic growth.

20.2.5 Active Revenue Policies

Fiscal policies should take into account that revenues from foreign trade have already been eroded and will continue to do so as a result of trade liberalization. They should be replaced by less distortive taxes, preferably by broad-based VAT and higher energy taxation (through the elimination of implicit tax subsidies – see Sect. 20.2.2 and Table 20.3). More generally, tax systems should be simplified, and numerous tax exemptions and loopholes should be eliminated.

Income distribution considerations that would favor greater reliance on income taxes – personal and corporate – should be carefully weighed against their distortive effects, which tend to negatively affect economic growth (see De Wulf et al. 2010).

Also, the recognition of the often poor administrative capacity to effectively administer a complex tax regime should affect tax policy design.

20.2.6 Coordination Between Monetary and Fiscal Policies

Budget deficits should be contained and financed in a non-inflationary manner. This means further developing domestic treasury bond markets and their liquidity and refraining from monetary financing by central banks. Improvements in the coordination between fiscal and monetary policy that the region experienced in the decade of the 2000s should be continued.

Unfortunately, central banks in the SEMC are only partly independent from political influence, and act as the primary obstacle to the modernization of policy instruments. A chief example are politically motivated price controls, which undermine the effectiveness of inflation targeting. Another one relates to the continuous failure to use interest rates as the primary tool for monetary policy, with notable exceptions of Israel, Turkey and Morocco (Mouley 2012). This leads to an over-reliance on quantitative approaches, e.g. monetary aggregates or credit targeting. In addition, although inflation targeting is identified as the primary objective of many of the region's central banks, exchange rate stability remains an effective overriding objective. In the future, monetary policy should act to mitigate high volatility in interest movements, while using a flexible exchange rate regime to counter volatility in more mature markets.

20.3 Deepening Euro-Mediterranean Economic Integration

Trade plays a crucial role in most of the economies analyzed, which are relatively small (apart from Turkey, whose economy can be considered medium-sized) and often heavily dependent on energy and other commodity exports. Their relative under-industrialization and the continually high share of agricultural production in GDP make their modernization prospects dependent on duty-free imports, robust exports and investment openness. While the openness of the SEMC has improved considerably it is still significantly below potential. Their trade flows, except Jordan and Palestine, are concentrated on the EU. Intra-SEMC trade is rather limited.

Chapter 2 identifies measures that would further boost SEMC openness, with a positive impact on their external competitiveness, balance of payments and job creation. These include removing tariffs, reducing trade-restricting NTM, decreasing high transport costs and improving uncompetitive trade logistics. Trade in services also faces serious restrictions, the removal of which could lead to considerable trade expansion.

Despite the tariff-reducing implications of multilateral trade negotiations under the aegis of the WTO and the gradual implementation of the bilateral EU-SEMC FTA, import tariffs in several SEMC still constitute a significant barrier to imports, particularly of agricultural products. Israel and Turkey have basically abolished tariffs on their imports from the EU, but in Algeria, Egypt, Tunisia and Syria, their average level still exceeded 10 % in 2009. SEMC exports of manufactured products to the EU and to signatories of AA are tariff-free. Tariffs on agricultural products are higher than those for manufactured products. Under the PAFTA, tariffs on intra-SEMC trade have been largely abolished.

NTM are the procedures that can hamper trade, if they are in excess of what is needed to achieve legitimate sanitary, security and other objectives. They can be summarized as follows:

- Technical standards: there is no system of mutual recognition of conformity assessments issued by the exporting country. Despite progress made so far, there are still major problems with labelling and packaging requirements, testing procedures and their results, the performance of testing laboratories that struggle with inadequate equipment and poorly trained staff, poor market surveillance systems and the decision on which standards to choose for all traded products.
- The harmonisation of SPS measures still has a long way to go, despite progress in some countries.
- Inefficient customs procedures result in long and costly clearance processes. Failure to make the best use of ICT, redundant clearance procedures, the absence of post-clearance audits, and cumbersome and excessive inspection practices are among the factors responsible for this poor performance.
- Protection of IPR: While the legislation is mostly in place, enforcement lags seriously.
- Competition and government procurement: Legislation to enforce competition and government procurement is still in its infancy in most SEMC.

AVE estimates of the protective value of the NTM are presented in Chap. 2 and suggest that they are consistently higher than the tariffs themselves. Given the nature of NTM, they are more difficult to remove, as they require major institutional reforms and institution building whereas the reduction of tariffs, while difficult to negotiate, can be easily implemented.

Average transport costs in SEMC exceed those of the EU by about 16 %, with the lowest in Egypt and Israel and the highest in Algeria. Trade logistics in most SEMC are significantly more costly than in many other regions of the world, particularly in the EU. According to the WB LPI, Israel, Lebanon and Turkey rank rather well, while other countries lag significantly behind, especially Algeria and Libya.

If all tariffs were abolished, NTM removed and TLI substantially improved, trade would expand substantially (see Chap. 2), more so for those countries whose initial trade restrictions were greater. SEMC exports to the EU would increase less than their own imports, because the EU's initial level of tariffs was practically zero

and its LPI much better than the SEMC's. Any scenario that assumes a slower removal of trade impediments offers less trade expansion.

Similar conclusions apply for intra-SEMC trade. In most cases (with the exception of Algeria), tariffs have already been removed under the PAFTA process, so there is little room for further improvement. On the other hand, the removal of NTM could bring trade expansion by ca. 35 %. Improvements in LPI would also lead to significant import and export increases, especially in Algeria due to its poor logistics performance.

In view of these benefits, SEMC and their economic partners (in the first instance, the EU) should continue the policy of removing the remaining tariffs. They should also identify the most harmful NTM for key exports and imports and set up a strategy to ease their trade-constraining effects. Building a domestic consensus and mobilizing external resources for the removal of NTM can speed up this process. Adopting a comprehensive program of improving LPI could also generate substantial trade gains.

The EU can provide technical assistance and investment support to SEMC in (i) harmonizing their technical standards and SPS with international norms, which will require extensive training, strengthening laboratories, etc., (ii) improving customs and other related procedures to reduce border-crossing costs, (iii) protecting IPR and (iv) improving competition policies and government procurement.

It can also open the EU market for importing services from the SEMC, while urging them to take similar measures with respect to importing services from the EU and eliminating the remaining restrictions to FDI.

As a next step, after completing a deep and comprehensive FTA, the EU can offer the SEMC a CU following the experience of such a union between the EU and Turkey (see Chap. 3), while avoiding its asymmetry (free access of countries that have FTAs with the EU to the Turkish market without granting Turkey automatic free access to the markets in those countries).

20.4 Investment and Private Sector Development

20.4.1 Attracting FDI

FDI is an important conveyer of technological innovation and management changes – it connects the new production centers to the world market, has important backward linkages to the local economy and thus fosters growth beyond the FDI-financed economic activity and, not least of all, adds to the local saving available for investment (see Chap. 4). In the period 1995–2000, the SEMC scored one of the lowest ratios of FDI flows to GDP (1.1 %) compared with other regions in the world. By 2005–2009, this had changed and the region exhibited one of the highest ratios (4.2 % of GDP), just behind the ECA (4.5 %) and the EU (4.7 %), and

far ahead of the other regions. Since the Arab Spring, however, FDI flows have fallen off sharply due to the region's political instability and policy uncertainty.

To return to previous FDI dynamics, the SEMC should maintain an open economy policy that welcomes investors, especially in high growth and employment-generating sectors. Good governance – in all its dimensions – has a crucial importance, as in its absence investors will require higher rates of return to compensate for the cost of a poor business climate. Capital account openness matters too, as it permits investors the unrestricted transfer of profits. Other pro-FDI measures include better infrastructure, which helps reduce production costs, and investment in human resources so that employers can find workers who are able to take on jobs created by modern manufacturing.

On the other hand, governments should be very careful in extending tax advantages to investors, as these have not been shown to positively affect the inward flow of FDI. Ensuring a favorable investment climate is much more important than granting tax privileges. Investors are more interested in generating decent profits than paying lower taxes on small profits.

20.4.2 Private Sector Development

In spite of several policy reforms in the 2000s, most SEMC, except for Israel and Tunisia (the latter before the Arab Spring), continue to suffer from a poor business and investment climate (see Chap. 5). This has been documented in the annual WB DB reports and other international surveys and ratings, such as the Heritage Foundation Index of Economic Freedom and Transparency International's Corruption Perception Index. The WB study conducted before the Arab Spring gives credit for legislative reforms in several SEMC, but at the same time underlines weak institutional frameworks and arbitrariness in their implementation, i.e. bureaucratic discretion, corruption and unequal treatment of investors (World Bank 2009: 79 et seq.).

Credit is the lifeline of private sector development. Yet empirical studies (e.g. Anzoategui et al. 2010) suggest that the banking sector in the SEMC suffers from a low degree of competition compared to other regions as a result of excessive restrictions on entry into the sector and the relatively high share of state-owned banks. The dominant role of state-owned banks gives them great discretion in credit allocation, to the advantage of well-connected and well-established enterprises (see Chaps. 11 and 14). Coupled with weak financial supervision, this situation hampers private sector growth.

The set of concrete measures to support private business should include, among others, the following:

- mapping out the country-specific legal and regulatory constraints that impede private sector development, according to the categories used in the WB DB

reports (which have proven to be very effective in focusing the minds of business leaders and policymakers);
- preparing strategies to tackle the identified impediments to a favorable business and investment climate; building a consensus between government and business community representatives on these strategies and making them public;
- focusing on implementation, notably creating an implementation mechanism for the adopted strategies and public monitoring of their progress (or lack of progress);
- credibly reforming the governance of the remaining state-owned banks and their privatization; and
- fostering competition in the banking sector by reducing the barriers to entry and improving banking supervision.

20.4.3 Privatization

All of the SEMC have ongoing privatization programs (Woodward and Safavi 2012). Some of them began in the 1980s as an element of policies departing from their countries' socialist/statist past. Others are only in the early stages of implementation or are stalled for a variety of reasons. In comparison with other regions, the privatization performance of the SEMC looks very modest. The regulatory framework for privatization needs strengthening to provide, among other issues, greater transparency.

20.5 Financial Sector Development

Financial services and capital markets are at the heart of economic transition. A well-functioning financial system is essential for an efficient allocation of national savings to real investment opportunities that contribute to growth and ultimately to job creation. Apart from its effect on growth, a well-developed and inclusive financial system may also have a positive impact on equality by providing poorer individuals with savings opportunities and much-needed credit.

Despite the financial reforms undertaken and various efforts to reduce the state's involvement in the financial sector, FD has been very uneven in SEMC in recent decades (see Chaps. 11, 12, 13 and 14). In practice, this has led to low access to financial services, high transaction costs and restriction of access to finance for SME and microenterprises.

There are several reasons behind such an unsatisfactory development of the financial sector. First, inflation has had a negative impact on private credit and deposits. Second, public debt expansion lowers private credit growth through a 'crowding out' mechanism. Since the government uses the financial sector for its own purposes, the institutions lend less to the private sector, which in turn results in

chronic financial repression. Third, the absence of strong legal and democratic institutions leads to a situation in which autocratic governments have been using the financial reforms in a self-serving manner for decades to enhance politically connected lending practices or to further engage in financial repression. Fourth, in the regulatory sphere, despite some convergence in credit information, capital adequacy and supervisory stringency, key divergences remain in deposit insurance, entry obstacles, supervisory independence and legal rights.

In particular, deposit insurance systems in many SEMC are not explicit, which could lead to uncertainties in the provision of support to banks in the case of default. Moreover, most systems do not attempt to align the banks' incentives in risk-taking with those of taxpayers by implementing risk-based premiums or coinsurance schemes. Another persistent issue is the presence of entry barriers to the sector and the continued state-ownership of banks. The comparison of regulatory systems also highlights high political interference in supervisory functions. Lastly, while creditor protection remains relatively weak, substantial improvement in credit information has occurred after 2003, in particular through establishing private credit bureaus with universal coverage.

The future FD policy in the SEMC should promote competition, efficiency, financial inclusion and financial stability simultaneously. Strengthening legal institutions and democratic governance, diminishing state ownership in the financial sector, ensuring the full independence of central banks, and harmonizing the regulations and infrastructure in financial services and capital markets will promote access to efficient, competitive and safe financial services to companies, investors and individuals. A stable macroeconomic environment, in which inflation is contained, the capital account is gradually opened, and investment and trade is fostered, is also important.

Financial regulatory reforms should strengthen financial infrastructure through an upgrade of the credit information systems and private monitoring, capital market clearing and settlement mechanisms, collateral, insolvency regimes, investors and consumer protection rules. Such reforms would provide better protection for lenders and investors and contribute to banking and stock/bond market development. Beyond that, targeted actions must be taken to enhance access to finance to SME and microenterprises, for example, in the form of properly designed loan and equity guarantee schemes.

20.6 Sectors of Key Importance

Some sectors in the SEMC are of key importance for economic development, trade and employment creation, generating foreign exchange revenue and prospects for modernization. Our analysis has concentrated on five of them, namely transport infrastructure, ICT, tourism, the textile industry and agriculture.

The SEMC lag behind other middle-income countries in terms of the available **transport** infrastructure (see Chap. 6), which hampers trade and economic growth

in the region. Efforts should be made to bridge this gap. The budget allocation for the next several decades should fund a reasonable program of catching up in this sphere. Domestic resources should be supplemented with external resources.

The SEMC, on average, lag behind other regions in terms of their **telecommunication** infrastructure, especially in the density of fixed telephone lines, partly due to the continuous domination of state-owned monopolies (see Chap. 10). The situation with mobile telephony looks better and is improving systematically, largely due to the opening of this subsector to private sector operators. To ensure the further rapid development of the ICT sector in the SEMC and their catching-up with other middle-income countries, the policy focus must be placed on privatizing fixed-line telephony, which is very important for business development and could support the nascent telework business, improving the business environment for private sector development (see Sect. 20.4.2) and strengthening the regulatory framework to avoid anti-competitive practices.

The **tourism** sector is very important in several SEMC in terms of its contribution to GDP and employment, particularly in Egypt, Jordan, Lebanon, Morocco and Tunisia, but also in Israel and Turkey even if their economies are more diversified (see Chap. 8). In the 1990s and 2000s, the SEMC recorded the highest growth rates in inbound world tourism, while domestic tourism also increased rapidly. This trend came to a halt in 2011 during the Arab Spring, but seemed to resume partly in 2012–2013 despite the economic slowdown in the EU, its main market. To ensure the further development of this sector, future policies should focus on:

- a more propitious climate for private sector operations, in particular better access to financial resources for SME (see Sect. 20.4 and 20.5);
- greater reliance on Internet services, which would enable local entrepreneurs to retain a larger share of tourist revenues (by eliminating intermediaries from developed countries);
- the impact of climate change that will affect some segments of the sector and needs to be addressed in advance; and
- continuity in government support and greater private sector participation in public promotion activities.

The EU and other international donors such as the WB should support (financially and through technical assistance) both national and regional projects in the areas of transport and telecommunication and energy infrastructure. This would help close the existing gaps between the SEMC and other countries and facilitate regional trade, investment, and the movement of people (including tourism).

Textile production and textile exports play an important role in six economies: Tunisia, Morocco, Turkey, Jordan, Egypt and Syria. There are important differences, however, in the position of the countries in the value chain and their dependence on specific trading partners (see Chap. 9). While Egypt and Syria, the traditional cotton producers, export over 20 % of raw textiles, Jordan, Morocco and Tunisia seem to operate higher up the value chain with only 2–3 % and Turkey with 9 % of raw textile exports. The expiration of the WTO MFA in 2005 eliminated the export quotas on low-cost Asian producers and exposed the SEMC to greater

competition. To address these challenges, the SEMC should improve the business environment for the private sector, which could help to attract more FDI (see Sect. 20.4) and move up the value-added ladder, which is the only way to survive against lower wage-cost Asian competitors. However, the latter will require serious improvement in the technical education system.

Agriculture is another sector of key importance in the SEMC, with the exceptions of Israel and Jordan (see Chap. 7). Yet, it suffers from low productivity (which only slightly improved in the 1990s and 2000s), underpinned by largely conservative agricultural policies based on import tariff protection and government subsidies. Food self-sufficiency rather than food security is still an argument that influences agricultural policies in the region. The vulnerability of the sector to fluctuations in rainfall, and more generally climate changes, creates an additional challenge.

The sector can contribute more to future growth if the following policies are implemented:

- irrigation policies are continued with due respect to the regional water scarcity;
- agricultural policies are focused more on food security and less on food self-sufficiency; and
- food subsidies are gradually eliminated so as to avoid distorting producer and consumer incentives.
- the EU market is successfully opened to SEMC exports by eliminating tariffs and import quotas. The EU, which is the most important partner in agricultural trade, should assist the SEMC to adhere to international SPS.

20.7 Social and Human Development

The expected demographic and social transformation in the SEMC will call for new sets of public policies in the fields of employment and social and human mobility (see Chap. 16). The increase in the working-age population over the next few decades could be an asset for long-term economic growth (demographic 'dividend') if certain conditions are met. However, the past trends in education, human capital, skill mismatch, unemployment, migration and increasing levels of inequality (see Chap. 18) point to malfunctioning social policies that, if continued, will turn the potential demographic 'dividend' into a demographic 'penalty'.

20.7.1 Unlocking the Human Capital Potential

In the field of education, past reforms have concentrated on increasing enrolment rates in order to lower illiteracy levels and narrow the gender gap in access to schooling. As a result, the SEMC have achieved significant progress in increasing

gross enrolment rates at the primary level, decreasing the gender gap in gross enrolment rates (particularly at the primary level), and allocating a considerably higher share of public spending on primary and secondary education. Despite this progress, human capital attainment varies substantially across the region. Although it remains low overall (as compared to other regions), there are high levels of inequality, with the exceptions of Israel and Turkey (see Chaps. 16 and 17).

There are several reasons for the weak link between schooling and broader economic gains. Educational systems suffer from low quality schooling, including inadequate funding, large class sizes, inappropriate pedagogy and so on. On the labor demand side, a limited number of formal job opportunities undermine the economy-wide benefits, especially if the more skilled young workers are also more likely to accept informal job contracts. More importantly, a large public sector may prevent the realization of productive capacities if public employment is used primarily as a tool to counter unemployment (Sect. 20.2.3). In addition, underutilized skills, in particular those of women due to the persistent cultural obstacles, continue to undermine the potential economic benefits of schooling (see Chap. 19). Finally, a mismatch between the skills demanded and supplied could diminish returns to schooling, either through a large-scale 'brain drain' (i.e. skilled emigration) or through an inefficient allocation of labor domestically.

The above observations suggest that countries in which the returns to education are high (Israel and Turkey) should continue to increase their attainment levels. In others, the principal aim should be to address the structural factors that hamper the link between schooling and economic outcomes, i.e., improving the quality of education, starting with decreasing class sizes and investing in modern teaching techniques and teacher training. Most importantly, a concentrated effort is needed to shift the pedagogical approach away from rote memorization practices towards critical thinking, especially at the primary and secondary levels.

20.7.2 Containing Inequality Through Inclusive Social Policies

El Mahdi et al. (2013) argue that social protection systems, if they do exist in the SEMC, are very embryonic. For example, the typical pension system is a partially funded PAYG scheme covering, to various degrees, survivors, old-age retirement, unemployment benefits, disability, work injuries, sickness and maternity. In many cases, important social protection mechanisms such as unemployment benefits and health insurance do not exist (e.g. in Lebanon, Jordan or Syria) or if they exist (Egypt), they are literally ineffective. Universal healthcare services exist in Israel only. In other countries they are provided to limited subscribing groups of employees or public sector workers. However, their quality is rather poor (in Egypt and Turkey) or they are relatively expensive due to mandatory copayments as in Lebanon and Palestine.

Future policies should involve several actions to alleviate inequality in SEMC:

- well-planned income redistribution policies along with economic policies aimed at avoiding a widening of the inequality gap;
- better-targeted services to the poor, such as health, education and social welfare to increase access to subsidized social services;
- more investment in low-cost housing and an extension of infrastructure to cover poor settlements and underprivileged areas to improve their living conditions.

New policies should consider widening social protection schemes to cover new aspects of insurance, including new segments of society and improving the quality of services. This would allow for a substantial reduction of generalized price subsidies to energy and food which currently serve as the main (though largely inefficient) social protection tool (Sect. 20.2.2).

So far, modest contributions by both employers and employees have provided most revenues to the social protection schemes, with the state budget covering the deficits. If the social insurance coverage expands, budgetary pressures are likely to grow. Thus, identifying new revenue sources and introducing new and more equitable social-protection schemes could help in reducing the governments' subsidy burden.

20.7.3 The Role of Migration

Migration flows between the SEMC and the EU have fluctuated over time and have varied between countries of origin. For instance, while migration from Turkey, Morocco and Algeria to Europe have been substantial, flows from Egypt, Libya and Syria have been comparatively insignificant. Wars and internal conflicts, for example in Palestine (1950–1985), Tunisia (1960–1965), Algeria (1960–1965) and Lebanon (1975–1990) triggered large waves of refugees. Similarly, recent civil wars in Syria and Libya have caused an increase in the number of asylum seekers and refugees in need of international protection (Carrera et al 2012). However, other socio-economic and political factors have also played an important role in explaining migration flows from the SEMC to the EU, including the GDP per capita gap between sending and receiving countries, income and employment expectations, security issues, concerns over the rule of law, and institutional quality.

Cooperation between the EU and SEMC on migration policy has focused overwhelmingly on control and surveillance of the EU external borders, 'capacity building' in the SEMC geared towards 'migration management' and the 'fight against irregular immigration'. A highly restrictive framework governing migration to the EU has left very few channels allowing mobility for the purposes of employment, training or education between both regions. Equally, EU policy cooperation and initiatives focused on the protection of migrants' rights, promoting up-skilling, 'brain circulation' or facilitating the flow of remittances and the portability of social security rights have been limited.

A new approach is therefore needed that will replace the paradigm of mobility as an insecurity/threat with one that will consider mobility as a potential tool to foster economic growth, human capital and political reform. For this approach to materialize, stronger links should be established between migration and other domains of sector policy cooperation between the EU and the SEMC, including trade, employment, education and training, and human rights.

EU migration policies and its cooperation with the SEMC should be re-focused on opening and supporting legal channels of mobility, including for employment and education. Mobility should not be 'exchanged' for measures stemming irregular migration flows, but could be used to encourage reforms geared towards safeguarding human rights, building independent courts and narrowing socioeconomic differences.

International agreements between the EU and the SEMC on cooperation in the migration sphere can include flanking measures to facilitate mobility such as recognition of the international qualifications of third-country workers in the EU, guarantees on the portability of social security schemes, and training and educational exchanges. The mutually agreed upon 'roadmap to mobility' can sequence steps needed by both sides to arrive at a mutually beneficial framework for migration management, including the perspective of visa facilitation and liberalization for various categories of individuals.

20.8 Conclusions

This chapter suggests a number of policy measures that could support the future economic and social development of the SEMC. These recommendations are based on the analysis of data from before the Arab Spring. We believe they remain valid, regardless of how much time will be required to stabilize the post-revolutionary situation in individual countries. Furthermore, their implementation seems to be even more urgent now if growth is to be resumed and unemployment reduced. Studies of countries that have gone through political transitions suggest that they can return to a growth trajectory in a few years if the right policies are in place (World Bank 2011: 2).

For the SEMC, the ambition should be to build on and improve their growth trajectory from before the Arab Spring. The support of the EU and other development partners will be crucial in attaining this objective. Still, lessons drawn from several decades of development assistance teach us that such aid cannot be productive if provided in a domestic policy and institutional vacuum. It needs to be supported by domestic demand for reforms and initiatives (country ownership of the reform program). Domestic stakeholders, including civil society, need to be convinced that the changes required (some of which, like the elimination of consumer subsidies, can be seen as highly unpopular and politically difficult) are in the country's own interest and will, in the end, contribute to a better future. Their adherence to such a policy package within a democratic context is needed, while

outside advice has its obvious limits. But once changes are decided domestically, external support may be crucial to achieve the desired objectives.

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