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Benchmarking the Financial Sector in the Southern and Eastern Mediterranean Countries and Projecting 2030 Financial Sector Scenarios

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Abstract

This paper aims at devising scenarios for the development of the financial system in the southern and eastern Mediterranean countries (SEMCs), for the 2030 horizon. The results of our simulations indicate that bank credit to the private sector, meta-efficiency and stock market turnover could reach at best 108%, 78% and 121%, respectively, if the SEMCs adopt the best practices in Europe. These scenarios are much higher than those of the present levels in the region but still lower than the best performers in Europe. More specifically, we find that improving the quality of institutions, increasing per capita GDP, opening further capital account and lowering inflation are needed to enable the financial system in the region to converge with those of Europe.

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1. Introduction

The link between growth and finance has been deeply investigated in the literature, both theoretically and empirically (see Levine, 2005, for a detailed overview of the literature on the nexus between finance and growth). The evidence is mixed but most of the empirical results show that financial development is growth-enhancing with few exceptions in the southern and eastern Mediterranean countries (SEMCs)[1] (see Ben Naceur & Ghazouani, 2007). However, few papers investigated the determinants of financial development and those who looked at them find that a high inflation plays against financial development while financial and trade openness, high investment rate, and good institutions are pro-financial development.

This paper aims at devising scenarios for the development of the financial system in the southern and eastern Mediterranean region for the 2030 horizon. We first compare the financial system in the region with the European system in order to determine the gaps that need to be closed in order to make the former's financial system converge to the international best practices in matters of finance development. Building on the literature of the financial development determinants, we develop a model to explain and forecast bank credit to the private sector over GDP, the efficiency of the banking sector and the stock market's value traded over GDP in the southern and eastern Mediterranean region for the year 2030. Our sample is composed of both the southern and eastern Mediterranean and European countries over the period 1960-2009.

The results indicate that bank credit to the private sector, meta-efficiency and stock market turnover will reach at best respectively 108%, 78% and 121% respectively if these countries adopt the best practices in Europe. These projections are much higher than the present levels in the region, but they are still lower than the best performers in Europe. More specifically, we find that improving the quality of institutions, increasing per capita GDP, opening further capital account and lowering inflation are needed to enable the financial system in the region to converge to those of Europe.

Section 2 presents a brief review of the papers on the determinants of financial development. Section 3 benchmarks financial development in the southern and eastern Mediterranean with that achieved in Europe. Section 4 discusses the data and the models as well as the scenarios. Section 5 concludes the paper.

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[1] For the purposes of this study and the MEDPRO project, the 11 southern and eastern Mediterranean countries (SEMCs) are: Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, the Palestinian Authority, Syria, Tunisia and Turkey. Due to data limitations, in some cases only a subset of these countries is covered in the analytical discussions.

2. Determinants of financial sector development

Summarising the voluminous literature on the growth/finance nexus, Levine (2005) reached the conclusion that most of the evidence suggested that both bank and stock market development contribute to economic growth. However, Levine (2005) noted that the determinants of financial sector development remained scarcely investigated and imperfectly understood.

Based on the burgeoning research on the determinants of financial development, Huang (2010) suggested that institutions, macroeconomics and geography are the principal factors explaining the difference in financial development between countries. Huang (2010) showed that protecting property rights (see La Porta et al. 1997, 1998), enforcing contracts and good accounting standards (Mayer & Sussman, 2001) are key factors contributing to financial sector success. In the same vein, Rajan & Zingales (2003) argue, based on the interest group theory, that industrial incumbents could block the development of the local financial sector under the scenario of low trade openness. They also suggest that trade liberalisation without financial openness is unlikely to result in greater financial development.

Empirical literature on financial development investigates why some countries are more financially developed than others. Our objective here is to look extensively at this empirical literature and to determine which factors have been the most frequent contributors to financial development. In our listing, we exclude legal, cultural and geographic variables, since they cannot be changed (used for forecasting) and are considered as inherited. In addition, studies with unclear and contradictory results are not included in our review.

Table 1 presents the variables used in the literature as determinants and the measures of financial development. Table 1 suggests that stock market capitalisation, credit to private sector and value traded as a share of GDP are the most frequently used dependent variables in the studies on the determinants of financial development. As a result, these variables will be used in benchmarking the financial sector of southern and eastern Mediterranean countries against other European regions.

Table 1. Determinants of financial sector development: Literature review

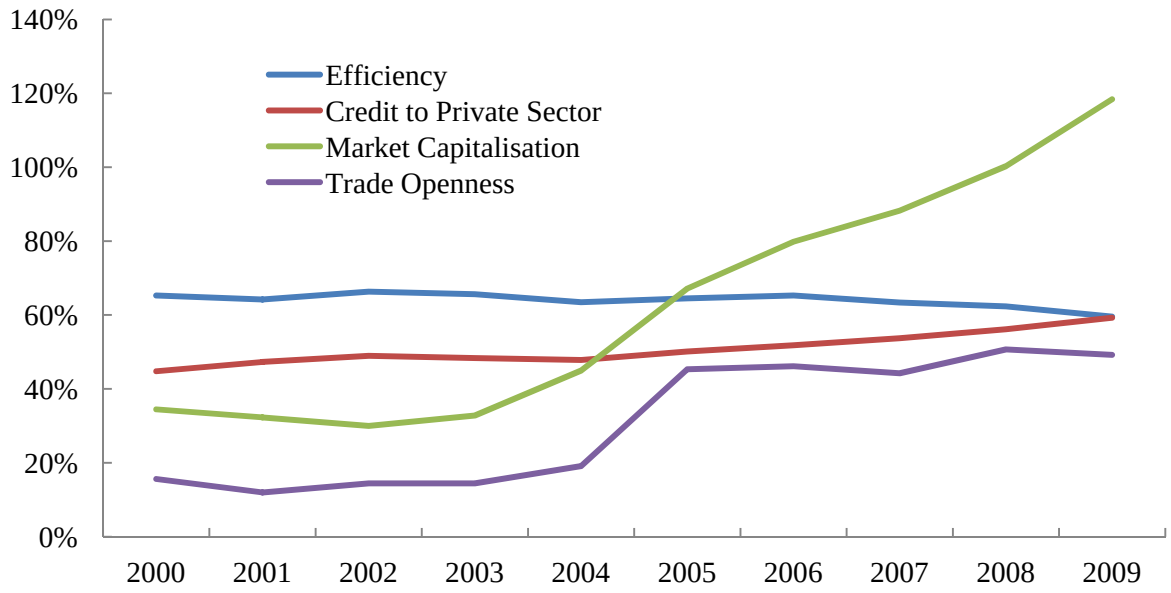
Variable name	Type of Variable	Occurrence	Sign
Liquid liabilities	Dependent	3	-
Liquid liabilities	Independent	2	Positive
Credit to private sector	Dependent	11	-
Credit to private sector	Independent	3	Positive
Bank deposits	Dependent	2	-
Stock market capitalisation	Dependent	14	-
Value traded	Dependent	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

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 financial sector development. In addition to these variables but with less occurrence, savings, investment, remittances and institutions are found to contribute to financial development. Most of the previous determinants will be used to measure the efforts needed by the region's countries to reach the level of financial development in the benchmark regions.

3. Financial sector benchmarking in the southern and eastern Mediterranean

Figure 1 suggests that financial development measures in the region are low by international standards, except for stock market capitalisation. Bank sector indicators are stagnating at 60% for both bank credit to the private sector as a share of GDP and bank meta-efficiency, which can be considered low compared to the European standards. Stock market capitalisation has increased significantly beginning in 2003, from a low of 30% in 2003 to 120% in 2009. Substantial reforms to converge to the international best practice, privatisation programmes, incentives to list in stock exchange and further opening of capital to foreign investors have contributed to the increase of stock market size in the region. However, stock market liquidity remains at a very low level of just above 40% in 2010, despite a steep increase in 2004 and 2005.

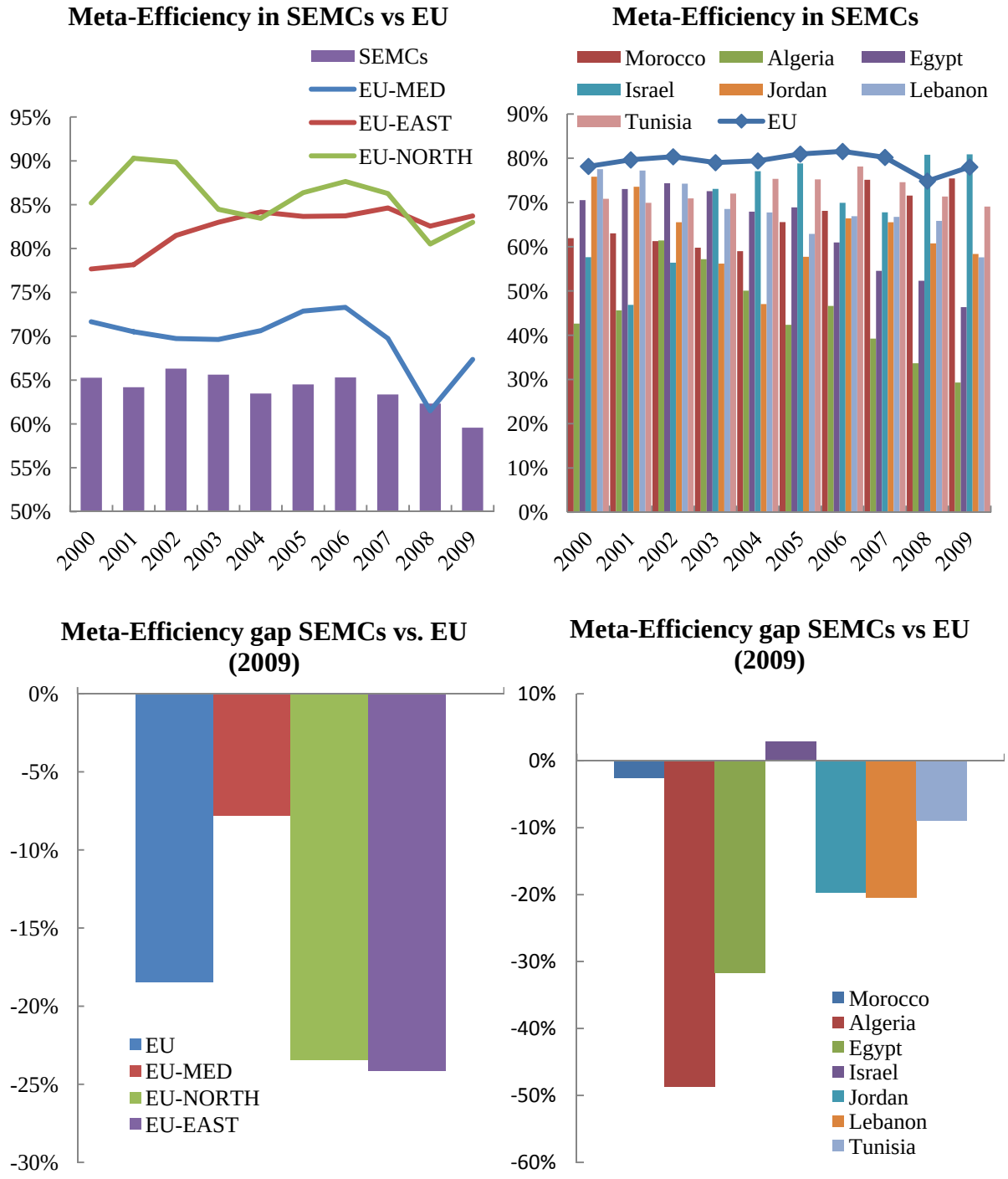
Figure 1. Financial sector development in southern and eastern Mediterranean countries



Sources: Authors' own calculations based on Bankscope database and Beck et al. (2000).

Figure 2 indicates that banks' meta-efficiency in the southern and eastern Mediterranean region is lower than in Europe and it has the highest gap with Northern Europe and the lowest with Eastern Europe. Figure 2 suggests also that the efficiency is heterogeneous where Israeli banks are performing better than the average European banks and Tunisian and Morocco banks are converging to this benchmark. However, all other countries in the southern and eastern Mediterranean region have low and declining bank efficiency.

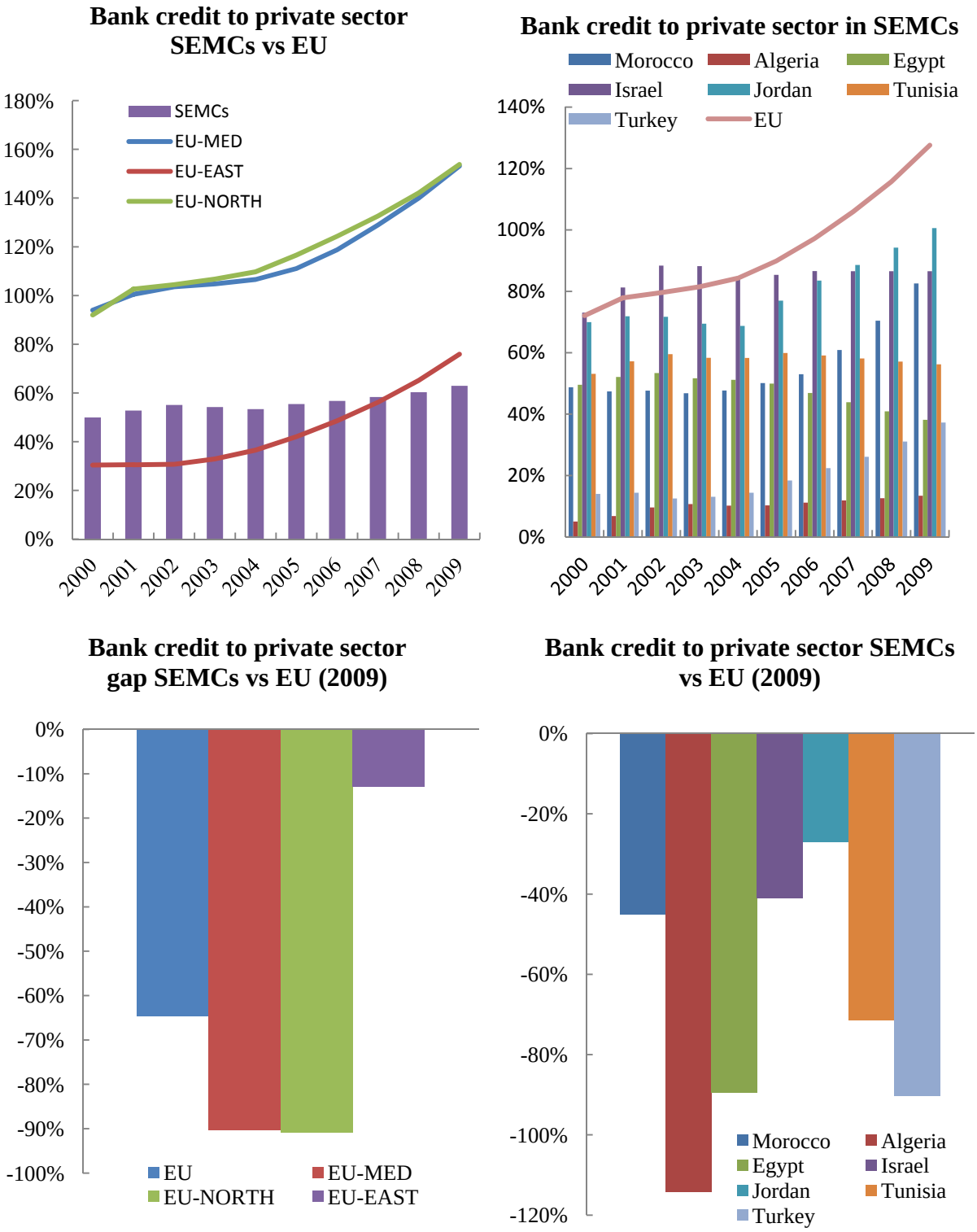
Figure 2. Meta-efficiency of southern and eastern Mediterranean vs. The EU



*Sources: A*uthors' own calculations based on Beck et al. (2000).

Figure 3 suggests that bank credit to the private sector as a share of GDP is stagnating at around 50%, which is the lowest level compared to all European regions after being overtaken by Eastern Europe in 2007. In addition, the results detailed by countries show that all the countries in the southern and eastern Mediterranean are lagging 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, whereas the gap with Europe (level in southern and eastern Mediterranean minus level in Europe) has more than halved since 2004 thanks to substantial reforms in bank regulation, credit protection and financial openness.

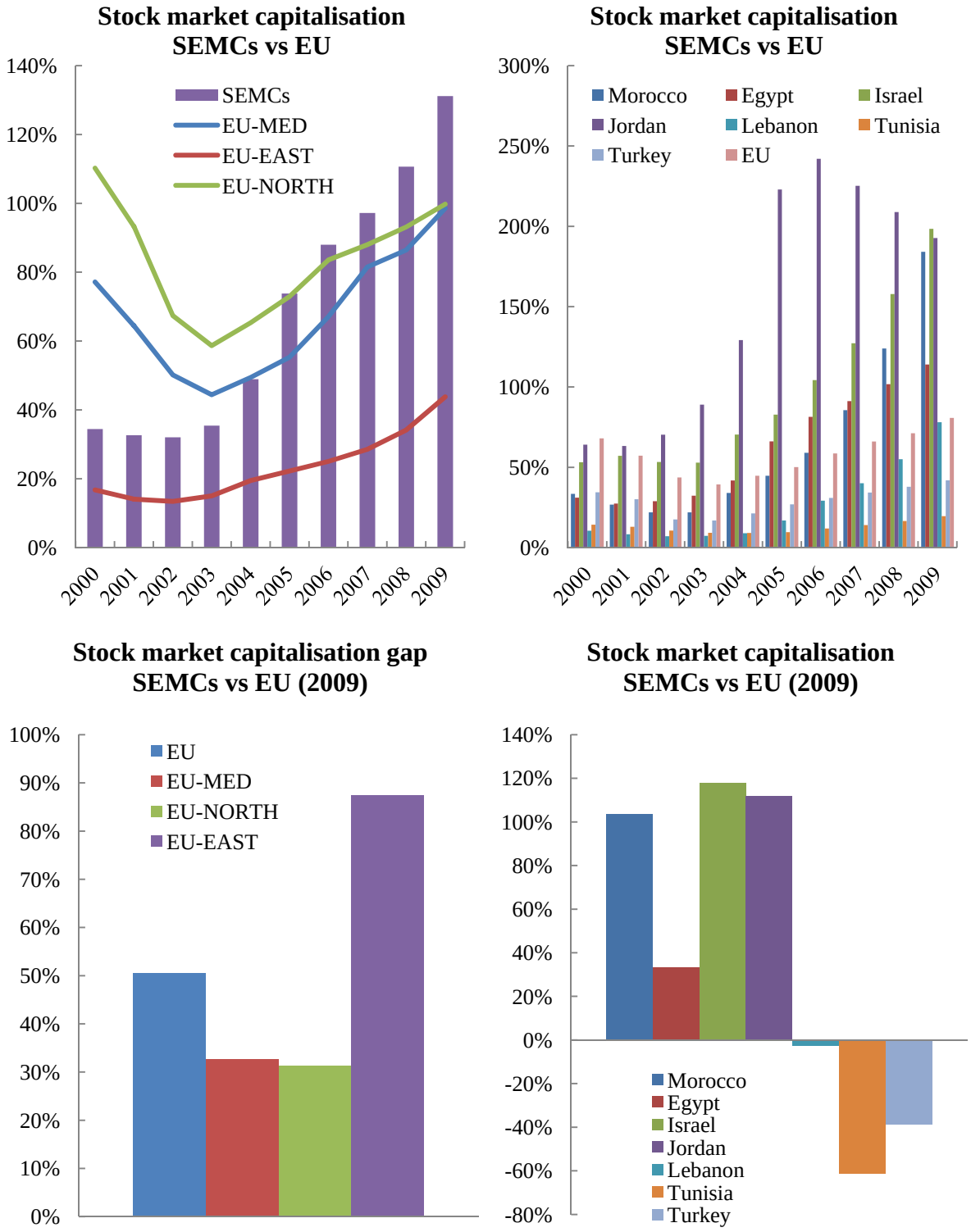
Figure 3. Credit to private sector: Southern and eastern Mediterranean vs. Europe



Sources: Authors' own calculations based on Bankscope and Beck et al. (2000).

Figure 4 shows that in contrast to the measures of bank development, stock market capitalisation in the SEMCs is higher compared to all European regions. In addition, Figure 4 suggests that stock market capitalisation in the region has been catching up since 2004 as evidenced by more favourable gap changes. However, the data by country display a more nuanced picture with Tunisia and Turkey lagging behind and Morocco, Israel and Jordan performing extremely well.

Figure 4. Stock market capitalisation: Southern and eastern Mediterranean vs. Europe

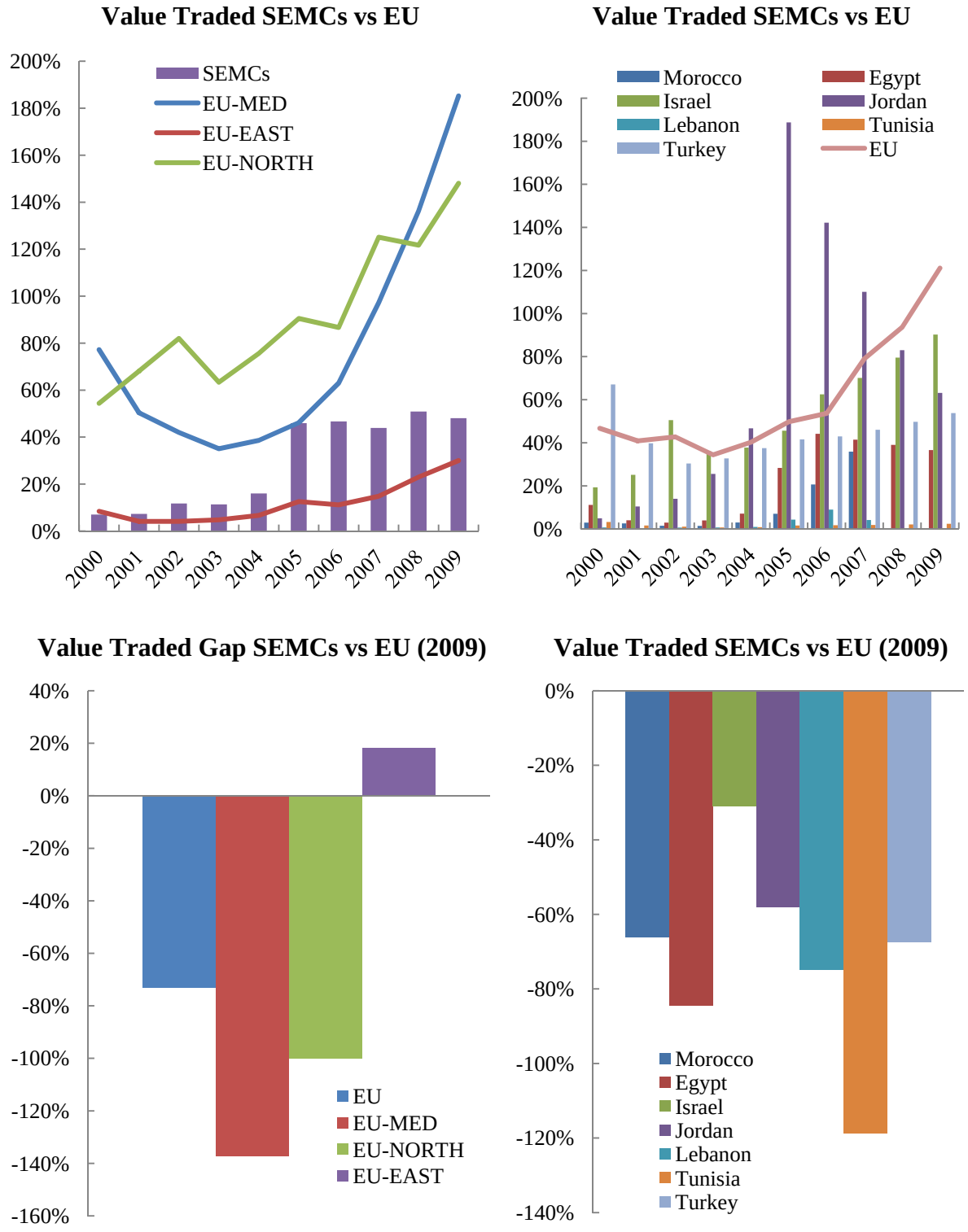


Sources: Authors' own calculations based on Bankscope and Beck et al. (2000)..

Figure 5 reports that stock market liquidity in the southern and eastern Mediterranean region, measured by value traded as a share of GDP, is extremely low compared to the other regions except Eastern Europe. The gap with EU-MED countries (level of SEMCs – level of EU-MED) is the highest, reaching a record of -140% of GDP in 2009. Figure 5 also suggests that this gap is worsening vis-à-vis all the European regions except Eastern Europe. Looking to the data by country, stock market liquidity

is lower for all southern and eastern Mediterranean countries than Europe, with the lowest gap in Israel and the highest in Tunisia and Turkey.

Figure 5. Value traded: Southern and eastern Mediterranean vs. Europe



Sources: Authors' own calculations based on Beck et al. (2000).

4. Financial sector development scenarios

4.1 Data and models

A. Data

The measures of financial development are extracted from the dataset of Beck et al. (2000). For banking development measures, the dataset includes all 11 southern and eastern Mediterranean countries except Lebanon, Libya and the Palestine Authority as well as seven EU-MED countries, nine Northern EU countries and eight eastern EU countries for the years 1985 to 2009 (see Appendix B for the exact composition of the sample). For the capital market development measures, the dataset covers all the same countries and the MED-11 countries except Algeria and Syria for the years 1989 to 2009. Table 2 provides an overview of the variables used in the study.

Table 2. Descriptive statistics

Variable	Source	N	Mean	S.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 ($)	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

Notes: The Bankscope database is compiled and distributed by Bureau van Dijk; World Development Indicators (WDI) are distributed by the World Bank.

B. Models

To define the financial development variables for the 2030 scenarios, we will look at the financial development gap found in the previous section. The European region appears to be a good benchmark for banking sector development and the liquidity of the stock market but not for the stock market size (the southern and eastern Mediterranean is outperforming the other regions). This result is mainly driven by the listing of the larger financial institutions in the stock market. We will exclude them from our scenarios of the stock market capitalisation variable since the region has the best performers for this specific indicator. For stock market liquidity, northern Europe and Euro-Med are considered to be good benchmarks for southern and eastern Mediterranean countries. Therefore, our scenarios will be based on credit to private sector, meta-efficiency and stock market turnover as a share of GDP.

To build financial development scenarios for the region, we will estimate for each financial sector variable an equation including explanatory variables we spotted in the literature review above. The model for assessing the determinants of financial development is as follows:

$$FD_{i,t} = \beta_0 + \beta_1 Inflation_{i,t} + \beta_2 Savings\ \text{Rate}_{i,t} + \beta_3 Trade\ \text{Openness}_{i,t} + \beta_4 Financial\ \text{Openness}_{i,t} + \beta_5 \text{Log real GDP per capita}_{i,t} + \beta_6 Institution\ \text{Quality}_{i,t} + \varepsilon_{i,t}$$

where *FD* include the financial development variables (bank credit to the private sector as a share of GDP, meta-efficiency[2] and value traded as a percent of GDP). *Inflation* is the inflation rate (using the GDP deflator as an index), *savings rate* is the national savings as a share of GDP, *trade openness* is the sum of export and import as a share of GDP, *financial openness* is the Chinn-Ito financial liberalisation index, Log real GDP per capita is the real GDP per capita, and institutional quality is an average of four indicators from the International Country Risk Guide (ICRG), published by the PRS Group (bureaucratic quality, control of corruption, index of democratisation and law and order).[3] The estimations are based on OLS.

Next, we will use the coefficient for each explanatory variable given by the estimation of the equations above and multiply it by the level of each benchmark value to measure the level of financial development reached if the country adopts the best practices of the benchmark regions. We will also use a best convergence scenario in which the variables of the SEMCs will be replaced by the benchmark values only if this contributes to increase financial development. We use the average of the last three years to avoid cyclical effects.

4.2 Scenarios

The results displayed in the equation on bank credit to the private sector as a percent of GDP (in Table 3) show that a lower level of inflation contributes to the development of credit to the private sector by reducing the uncertainties around the valuation of the investment decision. Besides, better institutions and a higher per capita GDP contribute to 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 savings is detrimental to private credit development since the availability of savings reduces the need for financing through banks.

The regression on meta-efficiency in Table 3 indicates that trade openness, protection of creditor and investor rights, a well-functioning law system and stable government (quality of institutions) are key contributors to bank efficiency. Besides, lower inflation and higher GDP per capita contribute significantly to bank efficiency.

The regression on value traded on GDP in Table 3 shows that increasing financial openness through more open capital account should contribute to improve the liquidity of the stock market. High-quality institutions are definitely fundamental for improving trading in the stock exchange. Inflation seems to be beneficial to stock market liquidity since stocks are good investment vehicles to protect against inflation.

Table 4 shows that bank credit to the private sector is expected to reach 108% if the southern and eastern Mediterranean countries adopt the same best practices as the North-EU benchmark region and 73.70% if eastern European practices are used as a benchmark. The level is much higher than it was in 2009 but still lower than the level of Europe at the same period which is 87%. A level of bank credit to private sector to GDP of 108% could be reached by SEMCs if they maintain their level of savings, reinforce the quality of their institutions (better investor protection, less corruption and less bureaucracy), improve their GDP per capita and reduce their inflation rate. 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 regulation is operating efficiently).

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[2] Technical growth rate (TGR) 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 TGR.

[3] See http://www.prsgroup.com/ICRG_Methodology.aspx for more on the methodology used to construct these indexes and others.

Table 3. The determinants of financial development in Europe and the SEMCs

VARIABLES	(1) Credit to private sector	(2) Bank efficiency	(3) 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

* and ** stand for significance at 5%, and 1%, respectively.

Table 4. Bank credit to private sector over GDP convergence to benchmarks, 2009

a) Convergence scenarios

	SEMCs	EU	NORTH-EU	EURO-MED	EAST-EU
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%

b) Best factors by region

	EU	NORTH-EU	EURO-MED	EAST-EU
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 5 also shows that bank efficiency is expected to reach 77% in the southern and eastern Mediterranean region if it adopts the best practices of the northern EU countries and 68% if eastern EU countries are used as a benchmark. All the scenarios are higher than the 2009 SMEC level (59%) but lower than the 83% of the Northern EU countries. One should surmise from the results that the improvement of bank efficiency is a more complex process than simply increasing credit to the private

sector. Besides, the lower R2 of the efficiency regression compared to that of credit to the private sector means that additional determinants of bank efficiency are not captured by the model that could improve the efficiency to make it reach the benchmark or score even higher. However, an improvement in the quality of institutions, higher income, more trade openness and lower inflation are key ingredients to reinforce efficiency in the southern and eastern Mediterranean region. 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 5. Meta-efficiency convergence to benchmarks

a) Convergence scenarios

	SEMCs 2009	***EU***	***NORTH-EU***	***EURO-MED***	***EAST-EU***
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%

b) Best factors by region

	EU	**NORTH-EU**	**EURO-MED**	**EAST-EU**
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

Looking now at the stock market depth, Table 6 reveals that stock market turnover is expected to reach 80% if SEMCs adopted the best practices of the North-EU benchmark. It is worth noting that if SEMCs adopted the best practices of the Eastern-EU countries, they would be worse off with an efficiency of 38% at best. This level of stock market liquidity is much higher than the 2009 level but lower that the Europe benchmark of 58%.

Table 6. Value traded convergence to benchmarks

a) Convergence scenarios

	SEMCs 2009	**EU**	**NORTH-EU**	**EURO-MED**	**EAST-EU**
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%

b) Best factors by region

	EU	**NORTH-EU**	**EURO-MED**	**EAST-EU**
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

SEMCs cannot reach the level of the Europe countries by moving the determinants of stock market liquidity to the level of that the Europe because other factors that are not captured by the model and are not measurable can improve the liquidity of the stock market. However, our model has spotted the variables that should be raised to the level of the benchmark in order to significantly improve the trading in the high GDP per capita, and an open capital account.

4.3 Policies for convergence

Let's now turn to how much the determinants of financial sector development should be improved if we take Europe as a benchmark. Inflation should be contained by at least 3.5% and income per capita increased by $22,000. Capital account openness needs to be reinforced by 2.5 points using the Chinn-Ito 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 to 5), democracy index by two grades, corruption by one and half grades, the bureaucracy index by one grade and the rule of law by only half a grade.

More broadly, linking our study to the World Bank (2001) study on financial sector development in the southern and eastern Mediterranean region, we recommend a strengthening of 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 contribute to improve its liquidity. Finally, reinforcing competition in the banking sector through privatisation, foreign entry and regulation limiting loan concentration should push for more efficient banks.

Table 7. Gap in determinants: SEMCs vs. Europe

	EU	***NORTH-EU***	***EURO-MED***	***EAST-EU***
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

Source: Authors' own calculations.

5. Conclusions

This paper looked at the scenarios for financial development in the southern and eastern Mediterranean region in 2030. We examined the literature on financial sector determinants to find out which factors are most frequently used to explain why some countries' financial systems are more developed than others.

We then compared the development of the SEMCs with European countries and found out that the former countries are lagging behind in terms of the depth and efficiency of their banking sector and stock market liquidity, but they are in a better position if we measure their stock market capitalisation.

On this basis, we devised a model that we tested on a large sample of SEMCs and European countries to explain three variables of financial development: bank credit to the private sector as a share of GDP, bank efficiency and stock market liquidity. The estimation of these models gives us coefficients for each variable that have been used to determine scenarios of financial development by interacting them with the level reached by the benchmark regions during the last three years.

We find that if the SEMCs reach the levels attained in Europe in terms of the determinants of financial development, bank credit to the private sector, meta-efficiency and stock market turnover will reach at best respectively 108%, 78% and 121%. We also find that improving institutions, achieving higher per capita income, opening further their capital account and lowering inflation are four key factors that will help place the financial system of the SEMCs on a par with European countries.

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Appendix A. Determinants of financial sector development in the southern and eastern Mediterranean

Paper	Type*	Method**	Data	FIN variables***	Findings
Garcia & Liu (1998)	M	Panel (FE)	15 European Mediterranean countries 1980-2005	MC	INCOME (+) SAVING (+) CPS (+) LLY (+) VT(+)
Billmeier & Massa (2009)	M	Panel (FE, GMM)	17 Mediterranean countries 1995-2005	MC	REMITTANCES (+) INCOME (+) INVESTMENT (+) VT(+) OIL PRICE (+) HF INDEX (+)
Andrianaivo & Yartey (2009)	M	Panel (FE, RE, GMM)	53 AFR countries 1990-2006	CPS	INCOME (+) POLITICAL RISK (+) TRADE OPENESS (+) CREDIT RIGHT (+) LAW&ORDER (+) REMITTANCES (+) INFLATION (+) FIN OPENESS (-)
				BA	INCOME (+) POLITICAL RISK (+) TRADE OPENESS (+) CREDIT RIGHT (+) LAW&ORDER (+) REMITTANCES (+) INFLATION (+) FIN OPENESS (-) RESERVE REQ (-)
				MC	CPS (+) VT(+) INFLATION (+) SAVING (+) POLITICAL RISK (+)
Ben-Naceur & Ghazouani (2005)	M	Panel (FE,RE)	11 Middle East and North African countries 1979-1999	MC	INCOME (+) SAVING (+) CPS (+) VT (+) M3 (+) INFLATION (-)
Aggarwal et al. (2011)	R	Panel (FE, GMM, IV)	109 Developing countries 1975-2007	BD & CPS	REMITTANCES (+) INFLATION (+)
Gupta et al. (2009)	R	Panel (FE, RE, IV)	44 SSA countries 1975-2004	BD	REMITTANCES (+) INCOME (+)
				M2	REMITTANCES (+) INCOME (+) TRADE OPENESS (+)
Kim et al. (2010)	TO	Panel (MG, PMG, DFE)	108 ADV&DEV countries 1960-2005	CPS, LLY, BA	Long-run: TRADE OPENESS (+) Short-run: TRADE OPENESS (-)

Appendix A (cont'd). Determinants of financial sector development in the SEMCs

Paper	Type	Method	Data	FIN variables	Findings
Rajan & Zingales (2001)	TO & FO	Panel (FE, IV)	24 ADV&DEV Countries 1913-1980	MC	TRADE OPENESS (+)
Baltagi et al. (2009)	TO & FO	Panel (GMM)	42 DEV Countries 1980-2003	CPS MC	TRADE OPENESS (+) FIN OPENESS (+) INCOME (+) IRCG POLITICAL RISK (+) TRADE OPENESS (+) FIN OPENESS (+)
Herger et al. (2007)	TO & FO	Panel (OLS, 2SLS)	126 ADV&DEV Countries 1990-1999	CPS & MC	TRADE OPENESS (+)
Klein & Olivei (2008)	TO & FO	Panel (OLS, IV)	96 ADV&DEV Countries 1986-1995	CPS LLY	FIN OPENESS (+) FIN OPENESS (+) TRADE OPENESS (+)
Ben-Naceur et al. (2008)	TO & FO	Panel (GMM)	11 MENA Countries 1979-2005	MC VT TURN	FIN OPENESS (+) CPS (+) TRADE OPENESS (+) INCOME (+) TRADE OPENESS (+) SAVING (+) FINANCIAL OPENESS (+) TRADE OPENESS (+) INCOME (+)
Sourafel & Shortland (2008)	PF	Panel (OLS, GMM)	110 ADV&DEV Countries 1975-2000	CPS, MC, VT	DEMOCRACY (+) REGIME CHANGE (+)
Roe & Siegel (2011)	PF	Panel (FE, IV)	64 ADV&DEV countries 1965-2003	CPS & MC	POLITICAL INSTABILITY (-)
Hauner (2008)	GS	Panel (OLS, GMM)	142 ADV&DEV countries 1980-2006	CPS & LLY	CREDIT TO GOV (-)

Appendix A (cont'd). Determinants of financial sector development in the SEMCs

Paper	Type	Method	Data	FIN variables	Findings
Cooray (2011)	GS	Panel (OLS, IV)	71 ADV&DEV countries 1990-2005	CPS & BD NIM & OC	INITIAL GDP (-) GOV QUALITY (+) INITIAL GDP (-) GOV QUALITY (-) GOV OWNERSHIP (+) GOV EXPENDITURE (+)
Hauner (2009)	GS	Panel (OLS, FE)	73 DEV countries 1960-2004	CPS & LLY	PUBLIC SECTOR CREDIT (-) INFLATION (-)
Boyd et al. (2001)	INF	Panel (OLS, GMM)	97 ADV&DEV countries 1960-1995	BA, CPS, LLY VT & TURN	INCOME (+) INFLATION (-) INFLATION (-)
Ben-Naceur & Ghazouani (2007)	INF	Panel (GMM)	11 MENA countries 1988-1999	CPS & MC	SCHOOLING (+) INFLATION (-)
Huang (2010)	EI	Panel (OLS, FE, GMM)	90 ADV & DEV countries 1960-99	LLY, CPS, CCB	POLIT (+) INCOME (+) TRADE OPENESS (+)
Singh et al. (2009)	EI	Panel (FGLS)	40 SSA=sub-Saharan Africa countries 1996-2006	CPS	INCOME (+) FIN LIB (+) PROPERTY RIGHTS (+) RULE of LAW (+) INFORMATION SHARING (+)

* M = Mixed
R =Remittances
TO = Trade Openness
FO = Financial Openness
PF = Political Factor
GS = Government Sector
INF = Inflation
EI = Economic Institutions

** FE = Fixed Effects
GMM = Generalised Method of Moments
RE = Random Effects
IV = Instrumental Variable
MG = Mean Group
PMG = Pooled Mean Group
DFE = Dynamic Fixed Effect
OLS = Ordinary Least Squares
FGLS = Feasible Generalised Least Squares
2SLS = Two-Stage Least Squares

*** MC = Market Capitalisation over GDP
CPS = Credit to Private sector over GDP
BA = Bank Assets over GDP
BD = Bank Deposits over GDP
M2 = M2 over GDP
LLY = Liquid Liabilities over GDP
CCB = Commercial-Central Bank (BTOT), the ratio of commercial bank assets over the sum of commercial bank and central bank assets.
NIM = Net Interest Margin
OC = Overhead Costs

Appendix B. Sample Composition

Region	Countries	Observation period
Southern and eastern Mediterranean	Algeria	1975-2009
	Egypt	1960-2009
	Jordan	1977-2009
	Lebanon	1977-2009
	Morocco	1960-2009
	Syria	1960-2009
	Tunisia	1988-2009
	Turkey	1981-2009
Eastern EU	Bulgaria	1992-2009
	Czech Republic	1994-2009
	Estonia	1993-2009
	Hungary	1983-2009
	Latvia	1994-2009
	Poland	1981-2009
	Slovak Republic	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
	United Kingdom	1960-2009
EURO-MED	Cyprus	1992-2009
	France	1960-2009
	Greece	1960-2009
	Israel	1975-2009
	Italy	1964-2009
	Malta	1961-2009
	Portugal	1969-2009
	Spain	1973-2009

About MEDPRO

MEDPRO – Mediterranean Prospects – is a consortium of 17 highly reputed institutions from throughout the Mediterranean funded under the EU's 7th Framework Programme and coordinated by the Centre for European Policy Studies based in Brussels. At its core, MEDPRO explores the key challenges facing the countries in the Southern Mediterranean region in the coming decades. Towards this end, MEDPRO will undertake a prospective analysis, building on scenarios for regional integration and cooperation with the EU up to 2030 and on various impact assessments. A multi-disciplinary approach is taken to the research, which is organised into seven fields of study: geopolitics and governance; demography, health and ageing; management of environment and natural resources; energy and climate change mitigation; economic integration, trade, investment and sectoral analyses; financial services and capital markets; human capital, social protection, inequality and migration. By carrying out this work, MEDPRO aims to deliver a sound scientific underpinning for future policy decisions at both domestic and EU levels.

Title	MEDPRO – Prospective Analysis for the Mediterranean Region
Description	MEDPRO explores the challenges facing the countries in the South Mediterranean region in the coming decades. The project will undertake a comprehensive foresight analysis to provide a sound scientific underpinning for future policy decisions at both domestic and EU levels.
Mediterranean countries covered	Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, Tunisia and Turkey
Coordinator	Dr. Rym Ayadi, Centre for European Policy Studies (CEPS), rym.ayadi@ceps.eu
Consortium	Centre for European Policy Studies, **CEPS**, Belgium; Center for Social and Economic Research, **CASE**, Poland; Cyprus Center for European and International Affairs, **CCEIA**, Cyprus; Fondazione Eni Enrico Mattei, **FEEM**, Italy; Forum Euro-Méditerranéen des Instituts de Sciences Economiques, **FEMISE**, France; Faculty of Economics and Political Sciences, **FEPS**, Egypt; Istituto Affari Internazionali, **IAI**, Italy; Institute of Communication and Computer Systems, **ICCS/NTUA**, Greece; Institut Europeu de la Mediterrania, **IEMed**, Spain; Institut Marocain des Relations Internationales, **IMRI**, Morocco; Istituto di Studi per l'Integrazione dei Sistemi, **ISIS**, Italy; Institut Tunisien de la Compétitivité et des Etudes Quantitatives, **ITCEQ**, Tunisia; Mediterranean Agronomic Institute of Bari, **MAIB**, Italy; Palestine Economic Policy Research Institute, **MAS**, Palestine; Netherlands Interdisciplinary Demographic Institute, **NIDI**, Netherlands; Universidad Politecnica de Madrid, **UPM**, Spain; Centre for European Economic Research, **ZEW**, Germany
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