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Institutional determinants of financial development in MENA countries

by Mondher Cherif and Christian Dreger[1]

Abstract. Developed and well regulated financial markets are usually seen as a precondition for an efficient allocation of resources and can foster long term economic growth. This paper explores the institutional determinants for financial development in the countries of the Middle East and North African (MENA) region. Institutional conditions are from the International Country Risk Guide. Paneleconometric techniques are applied to assess the development in the banking sector and the stock market. As a main finding, institutional conditions are important in both financial segments, even after controlling for standard macroeconomic determinants and fixed effects. For the banking sector, corruption seems to be most decisive. For the stock market, the impact of corruption and law and order appear to be relevant. While per capita income and inflation do not seem to play a vital role, openness to foreign trade is quite important for all areas of financial development. Hence, Overall, faster real economic integration is of key policy priority to improve financial development as a condition for higher GDP growth. Better law and enforcement practices and anti corruption policies are strategies to accompany this process.

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1   Introduction

Developed and well regulated financial markets are usually seen as a precondition for an efficient allocation of resources and can foster long term economic growth. On average, countries with better financial systems have experienced faster growth than those with less developed systems (King and Levine, 1993). According to Levine and Zervos (1998), developments in the bank and stock market are usually good predictors for subsequent output growth. Industrial sectors that are exposed to external finance expand faster in countries with more favourable financial markets (Rajan and Zingales, 1998). This result holds independently of the nature of the financial system, i.e. whether it is dominated by banks or stock market based (Beck and Levine, 2002).

The main argument for linking financial development to output growth is that developed financial systems perform critical functions to enhance the efficiency of intermediation by reducing information, transaction and monitoring costs (Levine, 2004). Financial intermediation can allocate savings and resources to the most appropriate investment projects; boost the rate of technical progress by identifying entrepreneurs with best chances of successful initiating new products and processes, monitor managers, promote sound corporate governance, provide insurances and sectoral and intertemporal pooling of risk. There is widespread agreement that countries should adopt appropriate macroeconomic policy measures, encourage competition in the financial sector, and develop a transparent institutional and legal framework for the financial system.

The law and finance literature emphasized the decisive role of the institutional framework for financial development and output growth, see La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998). Since a suitable legal environment protects potential financiers against expropriation from entrepreneurs, it increases their willingness to surrender funds in exchange for securities and expands the size of financial markets. Two dimensions of the legal environment, legal rules and the quality of their enforcement are particularly striking. According to Himmelberg, Hubbard and Love (2002) stronger investor protection tends to decrease the cost of capital due to lower risk premia and could therefore accelerate the speed of capital accumulation. Beck and Levine (2004) argued that legal institutions are suitable to explain differences in the degree of financial development across countries to a large extent. Galindo and Micco (2004) concluded from their analysis that higher investor protection will reduce the elasticity of credit supply to shocks and hence the amplitude of the credit cycle. Following Boone, Breach, Friedman and

Johnson (2000) measures of corporate governance, in particular the effectiveness of protection of minority shareholders are crucial to understand the extent of exchange rate depreciation and the decline of stock markets during the Asian crisis in 1997/98, even after controlling for macroeconomic determinants. See Wurgler (2000) for evidence that higher protection of minority investors can boost capital allocation.

Using a cross section of countries and industrial sectors, Perotti and Volpin (2007) found that competition and entry rates are positively correlated with investor protection in branches which depend more on external finance. Better formal protection, however, might not automatically improve the access to finance, as reforms can be captured by the current elites. Poor legal enforcement and unclear property rights limit the ability of individuals to raise funding (Rajan and Zingales, 2003). Improvements in legal protection may harm incumbents. By facilitating access to finance of new entrepreneurs, the rents of established firms decrease. As a consequence, incumbents will try to influence the political process to impede the respective reforms (Tommasino, 2006). According to Herger, Hodler and Lobsinger (2008) institutions constraining political elites from expropriating financiers could have a positive effect on capital markets. Pistor, Raiser and Gelfer (2000) argued that legal reforms can have a strong impact especially in transition economies.

Besides the legal system, Beck, Demirguc-Kunt and Levine (2003) stressed the role of historical determinants for financial development in former colonies. Legal traditions, brought by colonizers, differ in terms of protecting private investor and creditor rights and have a long lasting impact on financial development. See also Djankov, McLiesh and Shleifer (2007) on this point. According to Girma and Shortland (2008) and Roe and Siegel (2011) democratic structures and political stability can acccelerate financial development. The banking sector benefits from regime stability and democracy, while stock market capitalization is often faster in democratic regimes. Following Calderon, Chong and Galindo (2001) trust is correlated with financial depth, efficiency and stock market development. See also Guiso, Sapienza and Zingales (2004) for evidence that private households are more likely to accept financial instruments when social capital is high.

This paper explores the institutional determinants for financial development in the countries of the Middle East and North African (MENA) region. Despite the national uprising of the Arab spring, ongoing regional conflicts, increased political tensions and delays in the implementation of structural reforms continue to weigh on output in many states. Urgent policy priorities

are still to restore confidence and to pursue reforms towards diversification and faster job creation in private firms. Although there is high growth potential in principle, a major failure of the Arab world is that it has been unable to develop an innovative and competitive private sector, which is often a precondition for the emergence of a reform-oriented middle class. Financial shortages constitute a serious obstacle for a more encouraging development and new firm foundation. A typical manufacturer in Algeria, Morocco, Egypt, Yemen or Jordan finances 75 percent or even more of its investment from internal funds. Only a few firms have credit lines from banks. According to the demographic projections, about 15 million jobs are needed in the next decade. Therefore, a substantial acceleration of growth is of high importance. Albeit the development of the financial sector is high relevant in this regard, little work has been done for the MENA region, and most results are contradictory. Ben Naceur and Ghazouani (2007) reported evidence that the relation between bank sector evolution and GDP growth is actually negative, probably due to the low stage of financial development. In order to be a trigger for economic growth, financial markets may exceed a certain threshold (Cherif and Gazdar, 2015). While higher GDP growth has a positive impact on the stock market, it does not seem to promote banking activities (Ben Naceur, Cherif and Kandil, 2014). This points to existing deficits in the intermediation function of banks. According to Cherif and Gazdar (2014), institutional quality is more relevant for the banking sector than for the stock market. While better institutions will promote financial development, some institutions may matter more than others. In particular, a better developed legal system can signal confidence and predictability.

To access the robustness of the institutional impact, this analysis distinguishes between financial development in the banking and stock market. In the MENA countries, these two segments of the financial market are positively, but not intimately connected. According to the panel analysis presented below institutional conditions are important to explain the development in both financial areas, even after controlling for macroeconomic determinants. For the banking sector, corruption seems to be the most important determinant in the institutional setting. For the stock market, corruption as well as law and order appear to be relevant. In contrast, bureaucracy matters only to a minor extent. Its effect is even negative for some of the stock market indicators. While per capita income and inflation do not seem to play a decisive role, openness to foreign trade is quite important for financial development, especially in the stock market. Overall, faster real economic integration is of key priority to improve the financial evolu-

tion. Better law and enforcement practices and anti corruption policies are strategies to accompany this process.

The rest of the paper is structured as follows: Section 2 reviews the financial environment in MENA countries by looking at the banks and stock market. Section 3 describes indicators for financial development and institutions. Section 4 discusses the econometric approach and the results. Section 5 concludes with policy recommendations.

2   Banks and stock markets in MENA countries

Financial systems in MENA countries are dominated by banks and in some economies by state owned banks, despite recent privatization efforts. According to standard measures such as deposits held by the financial system or liquid liabilities to GDP, the size of the banking sector is quite large, compared to emerging markets in Latin America, Eastern Asia or Eastern Europe (Cihak, Demirguc-Kunt, Feyen and Levine, 2012). However, banks are less prepared to allocate credit than in other regions, as shown by low credit to deposit rates or high values of collateral demanded for loans. The preference of banks is on relations with large and well-established firms and to support development plans of the government.

According to the World Bank, almost 40 percent of all firms in the region identify the access to finance as a major or very binding constraint for their business activities. Less than 20 percent of the small and medium sized enterprises have credit lines at their disposal. Credit to these recipients amount to less than 10 percent of overall lending[2]. At the same time, competition in the banking sector is weak, as witnessed by low values of the *h*-statistic, i.e. the elasticity of bank revenues with respect to input prices (Panzar and Rosse, 1987). Competition did not improve over the last decades, implying that concentration is still high. The five largest institutes control 90 percent of the total assets hold by commercial banks. Substantial barriers for market entry include high capital requirements and poor credit reporting systems that impede a proper evaluation of risk of potential borrowers. Countries where stock markets and other non-bank financial intermediaries play an important role tend to have more competition in the banking sector (Anzoategui, Martinez Peria and Rocha, 2010).

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[2] In principle, micro credits might provide an alternative to bank lending, as noted by Schaefer, Siliverstovs and Terberger (2010) for the case of Kasachstan. Nonetheless, this instrument is not widespread in the MENA countries.

Compared to the banking sector, stock markets are less important as a source of external finance. Most bourses operate as public institutions or state owned companies (Amico, 2012). Stock exchanges may promote and monitor good corporate governance practices in companies through their listing regulations. On the other hand, market capitalization and trading volumes are not very large. The markets are dominated by a few huge retail investors, while participation of institutional as well as foreign investors is rather limited. Low institutional investment can trigger high market volatility. Private investors tend to have more limited risk horizons and might withdraw their capital based on rumours, even if this is against economic fundamentals. The stock exchanges are only partially integrated in the international capital market, except of major contagion effects during the global financial crisis. Markets are even not well connected within the MENA region, and regulatory practices often differ widely across countries (Lagoarde-Segot and Lucey, 2007). Hence, foreign investors could obtain gains through portfolio diversification in the MENA countries. However, although some reforms have been directed towards greater liberalization in recent years, a higher participation is still restricted due to investment barriers, like cost of access, cost of information and taxation (Paskelian, Nguyen and Jones, 2013).

3   Financial development and institutions

Since financial development is not directly available, it needs to be proxied by observable variables. However, the latter capture only specific dimensions of the overall phenomenon and will provide an incomplete picture. Therefore, different indicators are considered to assess the robustness of the results.

Financial series are reported by the World Bank (Cihak, Demirguc-Kunt, Feyen and Levine, 2012). For the banking sector, the domestic credit to GDP ratio (CREDIT) serves as a proxy for financial depth. It refers to credit to private firms and households provided by commercial banks. Credits from central banks or issued to public agencies are excluded from this measure. The size of the banking sector is described by assets held by deposit money banks (ASSETS) and liquid liabilities (LIQUID), both expressed as a percentage of GDP. Bank assets refer to claims to the domestic non-financial sector, including governments, public firms and the private sector. Liquid liabilities are currencies and interest bearing liabilities of bank and non-bank financial intermediaries. All variables are expressed relative to the cross section average and as a percentage of the latter, i.e.

$$(1) \qquad X_i^t = \frac{X_{it} - \overline{X}_t}{\overline{X}_t} \quad , \quad \overline{X}_t = n^{-1} \sum_{i=1}^{n} X_{it}$$

see also Dermiguc-Kunt and Levine (1996) and Ben Naceur and Ghazouani (2007). This transformation ensures the stationarity of all variables in the analysis[3]. The index *i* denotes countries and *t* is time. The transformed variables also constitute the ingredients of a composite index. In particular, they are equally weighted to obtain an overall index for bank development (BANK)[4].

To describe the stock market development, market capitalization (CAPITAL) is selected since it comprises the value of all companies which are listed at national bourses. Its ratio to GDP points to the ability to raise capital and provide risk diversification for the market participants. Organized trade of domestic equities (TRADE) proxies stock market liquidity and is expressed relative to GDP. Rising liquidity might trigger higher investment of firms as it could allow a more efficient allocation of financial resources. TRADE is complemented by turnover (TURNO-VER) defined as the ratio of total domestic shares traded and market capitalization, i.e. trading relative to the market size. A small but very active market tends to have low capitalization rates but high turnover rates. An increase in turnover might be caused by a reduction of transaction costs, for example. Incorporating information from market capitalization, trade and turnover can provide a more comprehensive picture of stock market development than the individual series. Therefore, an aggregate index (STOCK) is constructed by the same approach applied to the banking sector.

The institutional conditions potentially affecting financial market development are reported by the International Country Risk Guide (PRS Group, 1998). Daude and Stein (2007) applied these data to bilateral FDI stocks. Institutions for financial development are proxied by bureaucratic quality, law and order, and corruption. Although these indicators may partially overlap, they emphasize different aspects of the institutional framework. In general, poor legal enforcement and unclear property rights limit the ability of individuals to raise funding and impede financial market development.

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[3] While some of the original variables appear to be nonstationary, all transformed variables are stationary. Results of the unit root tests can be obtained from the authors upon request.
[4] The choice of weights in the aggregation is arbitrary. Common factors will introduce a slightly different pattern, but with no impact on the regression results. The minor influence of the weighting scheme can be also inferred from the regression results shown below. The parameters are quite similar for the aggregates and their components.

Bureaucratic quality (BUREAU) points to the extent that the administration can act independently from political influence and government change. Stronger bureaucracies can offer more administrative resources to investors and are less affected from external pressure. Many of them have established mechanisms for recruitment and training their staff. Law and order (LAW) is directed to the soundness of political and judicial institutions and provisions for an orderly succession of power. Since a suitable legal environment protects potential financiers against expropriation from entrepreneurs, it increases their willingness to surrender funds in exchange for securities and expands the size of financial markets. Stronger investor protection will decrease risk premia and could accelerate the speed of capital accumulation. Corruption (CORRUPT) related to rent seeking activities of public agents or influential interest groups can lead to a waste of ressources and might lower economic growth and stability. In a corrupt environment, for example, investors might obtain credit only through bribery, thereby limiting financial development. The institutional variables are transformed to the [0,1] interval where higher values indicate better institutional quality.

Descriptive statistics for the original series are displayed in Table 1 for 1990 and 2007. Table 2 shows the correlations between variables within different groups. The statistics document a wide heterogeneity in financial development and institutional design across MENA countries. For example, stock market capitalization to GDP ranges between 12.8 (Tunisia) and 204.2 (Jordan) in 2007. Because of the high standard deviations, the cross sectional means are not very informative. Nevertheless, the banking sector did not improve substantially in the period under study. For example, the credit to GDP ratio was 32.2 percent on average in 1990, and only slightly higher (37.2) in 2007. Despite the relative stagnation in the banking sector, stock market improved considerably, as witnessed by the various indicators. There may be some tendency towards less restrictive institutions, particularly in terms of law and order. On the other hand, corruption might have become more severe.

-Tables 1 and 2 about here-

While banking sector variables are highly interrelated, the correlation is lower for stock market and in particular for institutional indicators. The correlation between financial development and institutional quality appears to be sizeable for both financial segments. It is higher for the banking sector (0.57) than for the stock market (0.26). Although the banking sector and stock

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market are positively correlated (0.38), the strength of their relationship is far from perfect. Thus, the two segments of financial markets are related, but not intimately connected for the MENA countries. Hence, a concentration of only one dimension might produce misleading results. Note that the correlation analysis does not imply any direction of the causal relationship. To obtain robust evidence, the subsequent analysis will be based on paneleconometric models.

4   Econometric specification and results

Empirical evidence for the institutional impact on the development of financial markets is based on the panel regression

$$(2) \qquad financial\ development_{it} = c_i + \lambda_t + \sum_{j=1}^{k} \beta_j institutions_{ijt} + \sum_{k=1}^{l} \gamma_k controls_{ikt} + error_{it}$$

where financial development is focused either on the banking sector or the stock market. Institutional measures include bureaucracy, law and order and corruption, while the set of controls capture the macroeconomic environment, proxied by real per capita income in US-Dollar (INCOME), annual inflation rate of consumer prices (INFLA) and openness to foreign trade, i.e. the sum of exports and imports divided by GDP (OPEN). All variables are expressed relative to the cross country average, according to equation (1). Fixed effects could account for unobserved heterogeneity, for example, due to differences in the legal origin, the presence of ethnic minorities, democratic structures in case of country effects (c_i) or common shocks arising from the global economy in case of time effects (λ_t)[5].

Annual data are available for the 1990-2007 period. Due to huge gaps in the series, information before 1990 must be ignored. The period of the Arab Spring is also excluded from the analysis. Structural breaks traced to the uprising in many states can blur the underlying fundamental equation, at least for some years. Overall 15 MENA countries are included for banking sector panel: Algeria, Bahrain, Egypt, Iran, Israel, Jordan, Kuwait, Libya, Morocco, Oman, Qatar, Saudi Arabic, Syria, Tunisia, and Yemen. Since 4 of them (Algeria, Libya, Syria and Yemen) did not establish bourses over a sufficiently long period, they are excluded in the stock

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[5] It should be noted that the institutional variables usually do not fluctuate strongly over time. Thus, there might be potential multicollinearity between them and the country fixed effects, implying the relevance of the institutional impact could be underestimated.

market sample. Data on financial development and macroeconomic controls are obtained from the World Bank, especially from the World Development Indicators and Global Financial databases. Institutional conditions are taken from the International Country Risk Guide (PRS Group, 1998). These series have the advantage that they are available at the annual frequency and a rather long time span. Even in the sample under study, some gaps in the data remain, mostly related to the financial series. Therefore, both the banking and stock market panels are unbalanced. The total number of observations is 205 in case of the banking sector and 143 for the stock market[6]. While the banking sector regressions are exhibited in Table 3, Table 4 holds the results for the stock market. As a rule, only parameters with significance at least at the 0.1 level are reported[7].

-Tables 3 and 4 about here-

As a general finding, institutional conditions appear to be important to explain the development in the banking sector and the stock market, even after controlling for macroeconomic determinants and fixed effects. For the banking sector, corruption seems to be the most decisive determinant of the institutional framework. Apart from the liquidity to GDP ratio it is significant and correctly signed for all banking variables. Bureaucracy is also important for banking sector development, albeit its effect is limited to the willingness of providing credit. Law and order exerts a negative effect on the asset held of deposit banks. Thus, a higher degree of law and order will reduce the speed of asset accumulation. For the stock market, corruption as well as law and order appear to be relevant, while bureaucracy matters only to a minor extent. Its effect is even negative for stock market liquidity. Hence, under a more bureaucratic regime, trade at bourses is expected to decline. While per capita income and inflation do not seem to play a vital role, openness to foreign trade is quite important for financial development, where the parameters are especially high in the stock market.

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[6] Due to the restrictions caused by data availability, some robustness check is advisable. Therefore, the regressions have been re-estimated with balanced panels, excluding those countries with gaps in the data. This change does not affect the main findings of this paper. Detailed results can be obtained from the authors upon request.

[7] It might be argued that financial development also determines some of the regressors. To exclude a potential bias arising from simultaneity, the OLS results in Tables 3 and 4 have been re-checked by IV estimation, where the instruments refer to the lagged values of the respective variables. The IV results are very similar to OLS.

Conclusions

This paper explores the institutional determinants for financial development in the countries of the Middle East and North African (MENA) region. The institutional conditions are from the International Country Risk Guide. Paneleconometric techniques are applied to assess the development in the banking sector and the stock market. As a general finding, institutional conditions appear to be important in both financial segments, even after controlling for standard macroeconomic determinants and fixed effects. For the banking sector, corruption seems to be most decisive. For the stock market, the impact of corruption and law and order appear to be relevant. While per capita income and inflation do not seem to play a vital role, openness to foreign trade is quite important for all areas of financial development. Hence, Overall, faster real economic integration is of key policy priority to improve financial development as a condition for higher GDP growth. Better law and enforcement practices and anti corruption policies are strategies to accompany this process.

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Table 1: Descriptive statistics financial development and institutional quality

1990 (left) and 2007 (right entries)

Variable	Mean	Std. Deviation	Minimum	Maximum
CREDIT	32.15 | 37.17	19.11 | 24.90	2.386 | 5.383	59.54 | 89.60
LIQUID	65.86 | 61.11	22.01 | 26.97	41.99 | 23.99	122.1 | 121.0
ASSETS	47.95 | 47.35	26.22 | 27.93	10.65 | 8.534	97.76 | 106.9
CAPITAL	14.23 | 88.96	17.25 | 53.65	3.098 | 12.77	48.25 | 204.2
TRADE	4.317 | 57.65	5.158 | 75.36	0.150 | 1.529	12.22 | 272.5
TURNOVER	26.98 | 49.58	34.66 | 40.20	3.105 | 13.14	95.27 | 163.4
BUREAU	0.478 | 0.500	0.220 | 0.171	0.000 |0.250	0.875 |1.000
LAW	0.387 | 0.725	0.156 | 0.140	0.167 | 0.333	0.667 | 0.833
CORRUPT	0.470 | 0.363	0.142 | 0.095	0.167 | 0.167	0.833 |0.500

Note: CREDIT: Domestic credit, LIQUID: Liquid liabilities, ASSETS: Assets held by deposit money banks, CAPITAL: Stock market capitalization, TRADE: Organized trade of domestic equities. TURNOVER: Trade divided by market size. Financial variables expressed relative to GDP. BUREAU: Bureaucratic quality, LAW: Law and order, CORRUPT: Corruption. MENA countries: Algeria, Bahrain, Egypt, Iran, Israel, Jordan, Kuwait, Libya, Morocco, Oman, Qatar, Saudi Arabic, Syria, Tunisia, Yemen. Since Algeria, Libya, Syria and Yemen did not establish bourses over a sufficiently long time period, they are excluded from the stock market analysis.

Table 2: Correlation coefficients

Aggregates

	BANK	STOCK	INSTITUTIONS
BANK	1.000	0.377	0.571
STOCK		1.000	0.262
INSTITUT			1.000

Banking sector development

	CREDIT	ASSETS	LIQUID
CREDIT	1.000	0.950	0.871
ASSETS		1.000	0.801
LIQUID			1.000

Stock market development

	CAPITAL	TRADE	TURNOVER
CAPITAL	1.000	0.641	0.343
TRADE		1.000	0.859
TURNOVER			1.000

Institutional framework

	BUREAU	LAW	CORRUPT
BUREAU	1.000	0.341	0.333
LAW		1.000	0.205
CORRUPT			1.000

Note: See Table 1 for individual financial and institutional indicators. BANK (STOCK, INSTITUTIONS): Aggregated index for banking sector development (stock market, institutional environment). Overall indicators are constructed assuming equal weights of their ingredients. Results based on standardized variables.

Table 3: Banking sector development

	BANK	CREDIT	ASSETS	LIQUID
BUREAU		0.239 (0.096)		
LAW			-0.265 (0.094)	
CORRUPT	0.174 (0.059)	0.328 (0.089)	0.291 (0.066)	
OPEN	0.242 (0.108)		0.341 (0.123)	0.437 (0.115)
INCOME			0.178 (0.103)	
INFLA				0.176 (0.074)

Table 4: Stock market development

	STOCK	CAPITAL	TRADE	TURNOVER
BUREAU	-1.247 (0.572)		-2.407 (0.887)	
LAW	1.531 (0.532)	1.346 (0.265)	2.307 (0.825)	
CORRUPT	0.611 (0.287)		0.830 (0.445)	1.047 (0.406)
OPEN	2.803 (0.595)	1.934 (0.300)	4.362 (0.923)	2.190 (0.842)
INCOME				
INFLA				

Note: See Table 1. OPEN: Openness to foreign trade, INCOME: Real per capita GDP, INFLA: CPI inflation. Panel regressions with country and time fixed effects, 1990-2007. Only parameters with significance at least at the 0.1 level are listed. Measurement of variables as explained in the text. Standard errors in parentheses.