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Evaluating Financial Sector Development in the Middle East and North Africa: New Methodology and Some New Results

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Abstract: This paper assesses financial sector development in twenty Middle Eastern and North African (MENA) countries. Based on data collected on a wide range of financial sector indicators, including from surveys of country economists at the IMF in 2000 and 2002, several new indices of financial development are constructed encompassing six themes: development of the monetary sector and monetary policy, banking sector development, nonbank financial development, regulation and supervision, financial openness, and institutional quality. The paper finds substantial variation in the degree of financial development across the MENA countries. As a group, MENA countries perform relatively well in regulation and supervision. But much more needs to be done to reinforce the institutional environment and promote nonbank financial sector development. Based on a small subset of indicators for which data are widely available, the MENA region is found to compare favorably with a few other regions, but it ranks far behind the industrialized countries and East Asia.

I. INTRODUCTION

As countries in the Middle East and North Africa (MENA) consider ways to promote rapid and lasting economic growth, further financial sector reform should be high on their agenda [2]. The theory is that policies aimed at enhancing financial sector performance will result in lower information, transaction, and monitoring costs, thus improving allocative efficiency and raising output. Supporting evidence is typically based on a broad cross-section of countries, where financial development is measured by a small set of statistical indicators [3]. However, comparatively little work has been done on: (i) the specifics of financial sector development in the MENA region, and (ii) measures of financial development that go beyond simple aggregate indicators.

Going beyond simple aggregate indicators such as M2/GDP is necessary to identify and prioritize among different areas of financial sector reform. The simple indicators, though easily available and amenable to cross-regional and intertemporal comparisons, do not necessarily capture what is broadly meant by financial sector development. Financial development is a multifaceted concept, encompassing not only monetary aggregates and

interest rates (or rates of return) but also regulation and supervision, degree of competition, financial openness, institutional capacity such as the strength of creditor rights, and the variety of markets and financial products that comprise a nation's financial structure.

In this study, we assess financial sector development in the MENA countries—by collecting data on a wide range of financial sector issues, including from new surveys of MENA country economists at the IMF in 2000/01 and 2002/03—and propose several policy measures to enhance this sector's performance. Based on the data, we construct new indices of financial development for the MENA countries encompassing six themes: development of the monetary sector and monetary policy, banking sector development, nonbank financial sector development, regulation and supervision, financial openness, and institutional quality, such as the strength of creditor rights. Using a subset of indicators for which data are readily available, we also analyze the MENA region's performance over time relative to a few other regions.

We find that within the MENA region there is substantial variation in the degree of financial development; some countries are fairly well advanced, whereas a few others have significant room for improvement. As a group, MENA countries perform relatively well in the regulation and supervision theme as well as in financial openness. But they need to do more to reinforce the institutional environment and promote nonbank financial sector development. Compared to most other developing country regions, the MENA region performs well, but it ranks far behind the industrialized countries and East Asia.

The rest of the paper is organized as follows. We briefly review the literature on financial development and draw general lessons for macroeconomic and financial policy. Then, we describe the data collected, assess common trends, strengths, and weaknesses among MENA countries, and discuss areas for future reform. Finally, we construct several new measures of financial sector development for the MENA countries, and compare the region with a few other regions for a subset of the indicators for which data are widely available, and examine how economic growth in MENA related to financial development.

II. LITERATURE REVIEW

There is a large and still growing research literature on financial development and its relationship with growth [4]. Although the precise relationship between financial development and growth continues to be debated [5], there is general agreement that financial repression, or government-imposed restrictions and price distortions on the financial sector, can inhibit growth prospects. There is also agreement that macroeconomic stability is critical for the growth of financial sector services. Countries should adopt appropriate macroeconomic policies, encourage competition within the financial sector, and develop a strong and transparent institutional and legal framework for financial sector activities. In particular, there is a need for prudential regulations and supervision, strong creditor rights, and contract enforcement. Therefore, government decision-makers should eliminate financial repression conditions as well as facilitate and support the process of financial development as important elements of their policy package to stimulate and sustain economic growth.

Understanding the impact of financial development on economic growth, or—as is our intention in this paper—assessing the development of the financial sector in the MENA region requires good measures of financial development. Empirical work is usually based on indicators such as the ratios of liquid liabilities to GDP, deposit money bank assets to total banking sector assets, and credit to the private sector to GDP. As noted above, long time series of these measures are available for a wide range of countries allowing us to compare and analyze development across countries and over time. However, these simple measures do not necessarily capture the different structural and institutional details of what is broadly meant by financial development. The financial structure of a country is composed of a variety of markets and financial products, and it is difficult to conceive of a few measures that could adequately capture all relevant aspects of development. In addition, the simple quantitative measures may at times give a misleading picture of financial development. For instance, although a higher ratio of broad money (or M2) to GDP is generally associated with greater financial liquidity and depth, the ratio may decline rather than rise as a financial system develops because people have more alternatives to invest in longer-term or less liquid financial instruments.

Going beyond the standard quantitative indicators, Gelbard and Leite (1999) used measures of market structure, financial products, financial liberalization, institutional environment, financial openness, and monetary policy instruments to construct a comprehensive index for 38 sub-Saharan African countries, for 1987 and 1997. Similarly, Abiad and Mody (2003) created an index for a 24-year period from 1973 to 1996 for 35 countries. They examined six measures of policy liberalization in the areas of credit controls, interest rate controls, entry barriers, regulations and securities markets, financial sector privatization, and restrictions on international financial transactions. These more-detailed measures provide a richer description of financial development, and motivate our measures of financial development in the MENA region.

There has been very little work on measuring and assessing financial sector development in the MENA region, mainly because of the paucity of data. Our analysis builds on three studies that have examined financial development in MENA and broadly mirrors their conclusions. Chalk, Jbili, Treichel, and Wilson (1996) found that the thirteen MENA countries included in their analysis have made significant progress in financial deepening. But in most of these countries financial markets are thin and tightly regulated, government ownership is prevalent, and market forces play a limited role. Nashashibi, Elhage and Fedelino (2001) also found that most Arab countries had made progress over the past decade in financial reform, but were still at an early stage in the process. Their financial systems are dominated by commercial banks, and, in some, by public banks, and capital market development is hindered by legal, institutional, financial, and economic factors. In comparison, Jbili, Galbis, and Bisat (1997) concluded that the financial sectors in the Arab states of the Gulf Cooperation Council (GCC) are developed, technologically advanced, and more integrated into the world economy than in the rest of the MENA region [6]. This finding reflects the substantial differentiation in the degree of financial development in the region.

III. FINANCIAL DEVELOPMENT IN THE MENA REGION

A. Gathering Data

Against this background, we surveyed twenty MENA countries[7] at the IMF with the help of the country economists—in 2000/01 and 2002/03—to collect information on the nature of financial products and institutions in these countries. We organized the data according to six themes, each of which reflects a different facet of financial development: (1) development of the monetary sector and monetary policy; (2) banking sector size, structure and efficiency (including the role of the government in the sector); (3) development of the nonbank financial sector; (4) quality of banking regulations and supervision; (5) financial openness; and (6) quality of the institutional environment[8]. We also collected several macroeconomic and financial time-series data from the *International Financial Statistics*, *World Economic Outlook*, and *World Development Indicators*, as well as measures of institutional development from the *International Country Risk Guide* and the *Heritage Foundation* [9]. We then developed index values to measure each country's progress in each of the areas.

B. Rationale Behind the Organization of the Data

Controls on deposit and/or lending rates and on the allocation of credit are common modes of repression in underdeveloped financial systems. Forcing banks to subsidize credit to certain sectors, or restricting the quantity of credit, distorts the credit market and lowers efficiency. Such controls not only prevent banks and other financial intermediaries from adequately funding promising and productive business opportunities but often also lower savings and encourage capital flight. The *monetary sector development and monetary policy theme*, therefore, examines the extent to which the government uses indirect monetary policy instruments as opposed to direct controls on interest rates (or rates of return) and credit allocation. It also considers the efficiency of markets for government securities and the provision of liquidity services by the financial system.

Commercial banks are central to the financial and payments system of most economies, often playing a critical role in the process of mobilizing savings, funding investment opportunities, monitoring managers, and diversifying risk. Consequently, the *banking sector development theme* examines the development and efficiency of the commercial banking sector. Among other things, it investigates the profitability of banks, bank competition and concentration, and ease of private sector access to bank credit. Drawing on recent empirical research, the presumption is that commercial banks operating in competitive environments with less government intervention, low market concentration, and foreign bank entry are likely to be more efficient and conducive to growth. The financial repression literature has convincingly shown that government restrictions on the banking system, such as high reserve requirements, interest rate ceilings, and directed credit repress development. In addition, recent work has shown that concentrated banking systems and larger government ownership of banks have a depressing impact on overall growth, while restrictions on foreign bank entry hinder allocative efficiency [10].

The *nonbank financial sector development theme* explores the development of alternative (or nonbank) sources of capital as well as markets for financial products and services. These include stock markets, mortgage or housing finance institutions, corporate bond markets, insurance companies, mutual funds, and pension funds. They reflect the variety of products and markets that allow a financial system to fulfill its functions, namely, enabling firms and households to raise finance in cost effective ways, mobilizing finance, monitoring managers, and diversifying risk. Research on stock markets has shown that highly liquid stock markets are an important complement to banking sector development in promoting growth [11]. Liquidity or the ease of transacting, as opposed to the size of stock markets, is important because it facilitates the exchange of information and assets, thus improving resource allocation and growth. As Levine (forthcoming) notes, “simply listing on the national stock exchange does not necessarily foster resource allocation.” Therefore, in addition to the existence of nonbank financial intermediaries and markets, we pay particular attention to liquidity.

Owing to informational asymmetries and associated market failures inherent in financial sector transactions, appropriate regulation and supervision are important aspects of financial development. Regulatory authorities need to ensure that depositors’ interests are protected and fraud is curtailed, which in turn boost confidence in the financial sector and facilitate intermediation. The *regulation and supervision theme* assesses banks’ performance with respect to minimum (Basel) capital adequacy requirements and provisions against nonperforming loans. Among other items, it evaluates the prudential monitoring of banks and the transparency and openness of the regulatory environment.

Another aspect of development is the degree to which the domestic financial system is able to intermediate funds across borders. This affects the extent to which the country gains from international trade. The *financial openness theme* assesses the appropriateness of the exchange regime, including whether it operates smoothly and is relatively free of interventions. It also examines whether there are significant restrictions on the trading of financial assets or currency by foreigners and residents. Restrictions on current account transactions could substantially hinder trade in goods and services. Similarly, multiple exchange practices and misaligned exchange rates could hinder trade and resource allocation. Restrictions on capital account transactions, however, might be needed unless appropriate institutional arrangements, including prudential regulations and supervision. As is being debated in the context of currency and financial crises and the optimal order of liberalization, an open capital account without appropriate oversight and information disclosure could increase the risk of financial collapse. With appropriate institutions, an open economy benefits from the worldwide pool of funds to finance promising domestic investment projects and the allocation of local savings to promising investment alternatives globally.

Finally, the legal and political environment within which the financial system operates is a very important determinant of the range and quality of services offered by financial institutions. For instance, in many developing countries, banks are reluctant to extend loans because an inefficient judicial system or a corrupt bureaucracy or political institutions hinder loan recovery. The *institutional environment theme* tries to judge the quality of institutions such as law and order, property rights, bureaucratic quality, accountability of the government, and the ease of loan recovery through the judicial system that influence the

performance of the financial system. Several empirical studies have established the impact of institutions on growth [12].

C. Analysis

Having collected and organized the data according to the above themes, an analysis suggests common strengths, trends, and weaknesses, and points to future areas for reform. MENA countries in general perform reasonably well in regulation and supervision. But they need to do more to strengthen the institutional environment and promote nonbank financial sector development. Within the region, progress on financial sector reforms has been uneven. Some countries have well-developed financial sectors, particularly banking sectors, such as the GCC countries, Lebanon, and Jordan. Others, such as Egypt, Morocco, and Tunisia, have made important advances in recent years. Overall, however, more remains to be done.

The main findings for the MENA region, according to the six themes, are summarized below.

Monetary policy. For the most part, interest rates (or rates of return) are freely determined, indirect monetary policy tools are employed, and government securities exist. But the limited development or nonexistence of secondary markets for government securities hinders the broad use of open market operations by central banks. In addition, a few countries do not follow a comprehensive framework for designing and conducting monetary policy.

Banking sector. In a few countries, such as many of the GCC countries, the banking sector is well developed, profitable, and efficient. But in about half the region, this is not case. In many of these countries, the banking sector is dominated by public sector banks, which are characterized by government intervention in credit allocation, losses and liquidity problems, and wide interest rate spreads (or spreads in rates of returns). In more than half the countries, the banking sector is highly concentrated, with assets of the three largest banks accounting for over 65 percent of total commercial bank assets, and the entry of new banks is difficult. And in many parts of the region, there is an urgent need for developing modern banking and financial skills.

Nonbank financial sector. In most of the region, the nonbank financial sector—comprising the stock market, corporate bond market, insurance companies, pension funds, and mutual funds—needs further development. Where such markets exist, trading is usually quite limited. The development of these markets is complicated by legal limitations on ownership and the need for a clear and stable legislative framework.

Regulation and supervision. Many MENA countries, such as the GCC countries, Jordan, Lebanon, Morocco, and Tunisia, have strengthened banking supervision and regulation, they have established up-to-date procedures to collect prudential information on a regular basis, and they inspect and audit banks. They have taken steps to conform to international Basel standards by increasing capital adequacy ratios and reducing nonperforming loans. However, success in the latter has been limited, and for most countries nonperforming loans remain in the range of 10 percent to 20 percent of total loans.

Financial openness. MENA countries have gradually opened up their current as well as capital accounts. Nearly half the countries have open financial sectors, although many

maintain restrictions on foreign ownership of assets and repatriation of earnings. Some countries continue to maintain parallel exchange markets and/or multiple currency rates.

Institutional environment. In much of the MENA region, the quality of institutions, including the judicial system, bureaucracy, law and order, and property rights, is poor. For instance, in several countries, the judicial system is susceptible to political pressure and long delays, resulting in poor legal enforcement of contracts and loan recovery. Property rights enforcement also tends to be weak. This hinders commercial activity and investment, and hence growth.

IV. NEW MEASURES OF FINANCIAL DEVELOPMENT FOR THE MENA REGION

A. Comprehensive Index of Financial Development

Based on the above-mentioned themes, we developed six different indices, which we then combined to construct a *comprehensive index*. Each of the six indices was a composite of between four and eight different indicators that allowed us to measure the various sub-facets of each area [13]. The comprehensive index therefore was a combination of 35 different indicators, and served as a composite measure of financial development. We then grouped countries according to this composite index under five categories of very high, high, medium, low, and very low financial development.

To compute the comprehensive index, we assigned a set of weights to each of the 35 indicators. But to ensure robustness, we calculated it using different sets of weights [14]. We found that the grouping of countries into the five financial development categories was robust to the different weighting schemes, although the relative ranking of countries within each grouping changed slightly. We also found that, reflecting continuing reform efforts in the region, Tunisia, Pakistan, and Morocco moved into a higher level between 2000/01 and 2002/03. Within groups, the relative ranking of some countries changed; notably, the position of Sudan rose, reflecting reforms carried out during that time across most of the six categories.

**Table 1. Middle East and North Africa Countries:
Financial Development Indices 1/
(Based on Qualitative and Quantitative Data) Scale: 0-10 2/**

	Financial Development Index	
	2000/01	2002/03
Bahrain	Very High	Very High
Lebanon	High	High
Jordan	High	High
Kuwait	High	High
United Arab Emirates	High	High
Saudi Arabia	High	High

Oman	High	High
Qatar	Medium	Medium
Egypt, Arab Rep.	Medium	Medium
Tunisia	Low	Medium
Pakistan	Low	Medium
Morocco	Low	Medium
Yemen, Rep.	Low	Low
Algeria	Low	Low
Djibouti	Low	Low
Sudan	Low	Low/Medium
Mauritania	Low	Low
Iran, Islamic Rep.	Very Low	Low
Libya	Very Low	Very Low
Syrian Arab Republic	Very Low	Very Low

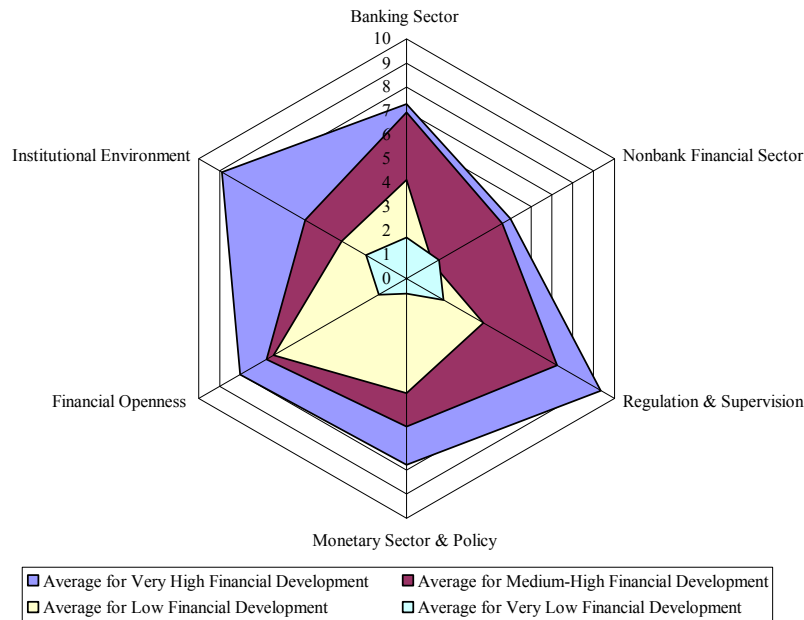
Source: Authors' calculations

1/ Original "subjective" weighted index.

2/ Scale: Very Low=below 2.5, Low=2.51-5.0, Medium=5.1-6.0, High=6.0-7.5, Very High=above 7.5.

On average, countries at higher levels of financial development outperformed countries at lower levels in each of the six aspects of financial development. But countries in the highest levels of financial development for the region received particularly high marks for regulation and supervision, and for financial openness. At the same time, across most of the region, countries fared poorly on development of a strong institutional environment and the nonbank financial sector.

Figure 1. MENA: Comprehensive Index of Financial Development---Comparing Very High, High-Medium, Low, and Very Low Development Countries, Scale 0-10



Source: Authors

In comparison to other countries in the region, MENA countries with higher levels of financial development tended to have: (1) a greater use of indirect monetary policy instruments; (2) a smaller degree of public ownership of financial institutions; (3) smaller or no monetary financing of the fiscal deficit; (4) stronger prudential regulation and supervision; (5) higher-quality human resources, including management and financial skills; and (6) a stronger legal environment.

B. Principal Components Analysis of the Qualitative Data

While our primary approach is to rely on our qualitative judgment to identify and then assign relative weights to different components of financial development, we also use principal components analysis (PCA) to generate an alternative set of weights. Roughly speaking, PCA examines the statistical correlations across the different variables, and assigns the largest weights to those indicators of financial development most correlated with the other indicators in the dataset. Intuitively, this method tries to uncover the common statistical characteristics across the various indicators in order to combine them into a composite index of financial development. Since each one of our indicators is meant to capture some aspect of the concept we term “financial development”, the variable most correlated with the others is judged to be the most accurate indicator of financial development.

The first purpose that this alternative set of weights created by Principal Components Analysis serves is a check on the sensitivity of our results to variations in the weighting scheme. We recreate each of our six sub-indexes (Banking Sector Index, Financial Sector Openness, etc.) using PCA, and the index values this generates for the forty data points

(twenty countries, two time periods) is highly correlated with the original index values based on our subjective judgment. The correlation ranges from 0.915 for the openness index to 0.988 for the Institutional Quality index, and the average correlation coefficient across the six indices is over 0.97. As a result, generating weights using PCA instead would not change our conclusions very much.

The second purpose of this analysis is to identify a subset of variables which, according to the correlations in the data, are the most crucial indicators of financial development. Table 2 below lists the 18 variables (out of 35 total – see Appendix II) that were assigned a weight of 4% or greater by the principal components analysis. These 18 variables jointly account for approximately 80% of the total weight. The last column in Table 1 also reports the weights we chose to assign to those same variables based on our own judgment of what matters most in defining financial development. Comparison of the two columns indicates that the correlations in the data do not always correspond perfectly with our *a priori* judgments. All the variables that bear a direct relationship to financial development appear in this list of the top 18 indicators of financial development, whereas variables only tangentially related to financial development (democratic accountability, housing finance, quality of the bureaucracy, law and order score) get close to a zero weight. The principal components analysis does yield a sensible set of results, and allows us to reduce our reliance on qualitative judgments in developing indicators of financial development.

Table 2: Eighteen Variables Chosen by Principal Components

Variable	Principal Components Weight	Qualitatively Assigned Weight
Ease of Loan Recovery through the Judicial System	6.2%	4%
Development and Profitability of the Banking Sector	6.1%	5%
Government Involvement in Banking and Finance (Heritage Foundation)	5.8%	2%
Existence of Forward Exchange Market	5.3%	1%
Privatization of Commercial Banking Sector	5.3%	3%
Deposit Money Bank Assets/Total Banking Sector Assets	5.3%	3%
Property Rights Index (Heritage Foundation)	4.9%	4%
Prudential Monitoring of Banks	4.8%	3%
Transparency and Availability of Financial and Monetary Data	4.8%	4%
Basle Capital Adequacy Requirements	4.7%	3%
Independence of the Central Bank	4.2%	3%
Credit to the Private Sector / GDP	4.0%	3%
Restrictions on Foreign Currency Purchase by Residents	3.9%	2%
Inter-bank Transactions Markets	3.7%	5%
Interest Rate Liberalization	3.6%	5%
Indirect Instruments of Monetary Policy	3.5%	4%
Government Securities	3.0%	3%
Non-performing Loans and Provisions	3.0%	2%

We added the weights assigned by PCA to the individual variables to create a set of percentage weights that measure the contribution of each of the six sub-indices to the summary indicator of financial development (see Table 3). While we had chosen to assign the largest weights to the “Banking Sector” and “Monetary Sector/Policy” themes in our original construction of the index, the principal components analysis suggests that the variables that comprise “Banking Regulation/Supervision” and “Banking Sector” are jointly the most telling indicators of financial development in our MENA data. Comparison across the last two columns of Table 3 also indicate that according to PCA, our subjective judgments over-emphasized the roles of “Monetary Sector/Policy” and the “Non-Bank Financial Sector” in constructing measures of financial development.

Table 3: Six Sub-Indices

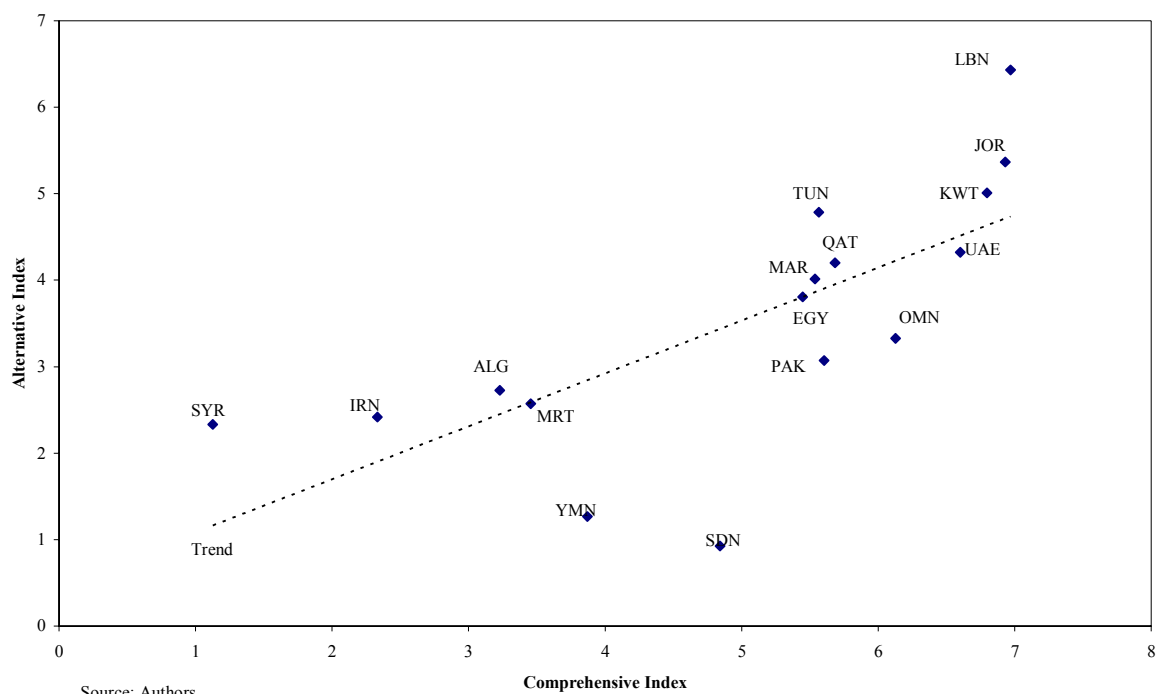
Theme	Weights Assigned by Principal Components Analysis	Weights Assigned by Qualitative Judgment
Banking Sector Development	21.3%	25%
Monetary Sector and Policy	12.8%	20%
Banking Regulation and Supervision	21.4%	15%
Institutional Environment	19%	15%
Non-Bank Financial Sector	7.8%	15%
Financial Sector Openness	17.7%	10%

C. MENA and the Rest of the World: Alternative Quantitative Index

How have the financial systems within the MENA countries developed over time, and how does the MENA region compare with other regions? Since information on the comprehensive index is not available at the required level of detail either for the MENA countries over time or for other countries, we used an *alternative index* we developed based solely on the available quantitative information. This index is related to the one developed by Beim and Calomiris (2001) and is based on quantitative data only. To construct the index, we combined four variables commonly used in the literature using Principal Components Analysis [15]. The four variables were: ratio of broad money (M2) to GDP; ratio of the assets of deposit money banks to the total assets of the central bank and deposit money banks; reserve ratio; and ratio of credit to private sector by deposit money banks to GDP. These variables measure the size of the financial sector, the importance and relative ease with which commercial banks provide funds, and the extent to which funds are provided to the private as opposed to the public sector. Aggregating across the variables not only attempts to capture different aspects of financial development in a single measure but also reduces biases or errors that may plague a particular data series. Furthermore, in keeping with the standard practice of averaging the variables in either 5-year panels or 10-year panels to smooth out business cycle fluctuations and focus on trends, we averaged the data in 10-year panels to obtain observations for the 1960s, 1970s, 1980s, and 1990s.

The rankings of countries within the MENA region closely track each other under both the comprehensive and the alternative indices. This provides some confidence in using the alternative index to make intertemporal and interregional comparisons. In addition, the alternative index produces rankings of financial development similar to those developed in other research.

Figure 2. MENA: Comparing the Comprehensive and Alternative Indices



According to the alternative index, we find that most MENA countries experienced financial development from the 1960s through the 1980s. In the 1990s, many continued to experience financial deepening, although in a few countries political instability or conflict resulted in a deterioration of the index. The MENA region ranks well below the industrialized countries in financial development but above most other developing country regions. However, it is interesting that, although the MENA region ranked well above the newly industrialized economies of East and Southeast Asia in the 1960s, it fell considerably behind them in the 1980s and the 1990s, as these Asian countries stepped up financial deepening. With the exception of sub-Saharan Africa, financial development in all other regions has progressed considerably more rapidly than in most countries in the MENA region. The countries in the MENA region in which there have been important advances in financial development since the 1960s are Egypt, Jordan, Morocco, and Tunisia. In the remaining countries the level of financial development over the four decades has improved only slightly or, in a couple of cases, declined.

Table 4. Financial Development (Alternative Index), 1960-90s
(Based on Quantitative Data) Scale: 0-10

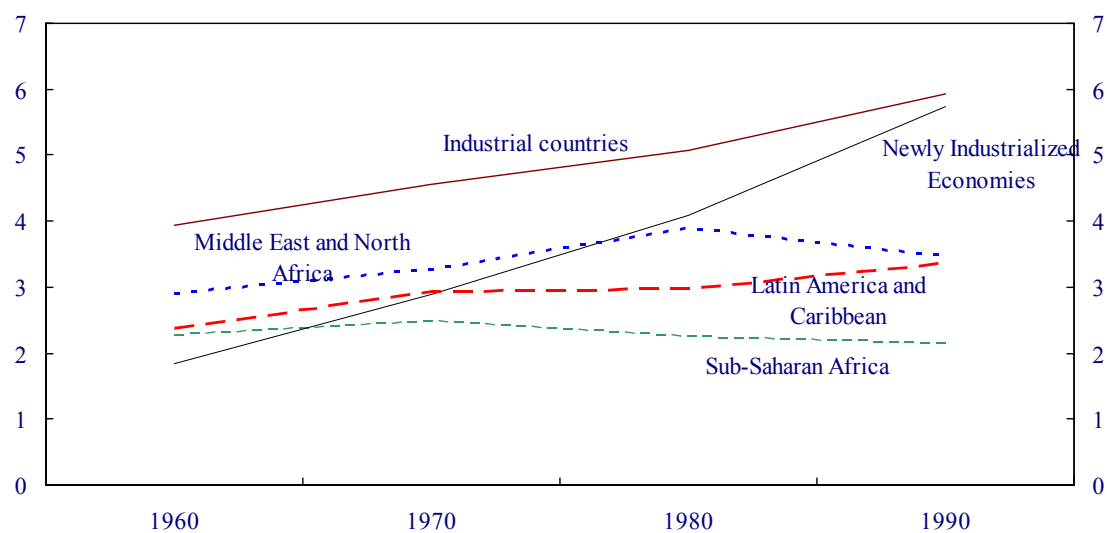
Countries	1960s	1970s	1980s	1990s
MENA average	2.9	3.3	3.9	3.5
MENA average (without Lebanon)	2.6	2.9	3.3	3.1
Afghanistan	...	...	...	...
Algeria	2.4	4.2	5.0	2.7

Egypt, Arab Rep.	1.7	1.9	3.5	3.8
Iran, Islamic Rep.	3.8	3.3	2.4	2.4
Jordan	3.1	3.7	5.3	5.4
Kuwait	...	...	5.7	5.0
Lebanon	5.1	6.7	9.6	6.4
Mauritania	2.4	2.7	3.0	2.6
Morocco	2.6	2.8	3.0	4.0
Oman	...	2.6	2.8	3.3
Pakistan	2.7	2.9	3.0	3.1
Qatar	...	...	...	4.2
Sudan	2.5	2.1	1.5	0.9
Syrian Arab Republic	2.2	1.9	1.8	2.3
Tunisia	3.3	3.8	4.5	4.8
United Arab Emirates	...	2.9	3.8	4.3
Yemen, Rep.	...	...	...	1.3
Industrial average	3.9	4.6	5.1	5.9
"Asian Tigers" Average	1.8	2.9	4.1	5.7
Latin America - Caribbean average	2.4	2.9	3.0	3.4
South Asia average	1.6	1.7	2.4	2.7
Sub-Saharan Africa average	2.3	2.5	2.3	2.1

Source: IFS.

Figure 3. MENA and Global Comparators:

Quantitative Index of Financial Development, 1960s - 1990s



D. Regression Analysis

Finally, how is economic growth in MENA related to financial development? Very little work has been done to determine the contribution of financial development to growth specifically for the MENA region [16]. We use the above indices to empirically study the contribution of financial development to real per capita GDP growth in the region. For cross-country regressions, we use data from 1992 through 2001 from the *World Economic Outlook* database and the *International Financial Statistics* database, taking averages over the period to smooth out business cycle fluctuations [17].

Using the comprehensive index as the proxy for financial development, we obtain results that are somewhat in line with the literature. The signs are as expected; however, some of the variables are insignificant, including financial development. Of the components that comprise the comprehensive index, the institutional environment is the key driver. Including it along with the monetary sector index, or any of the other indices, provides results that are more in line with those found for the rest of the world. The institutional variable is strongly significant. However, the coefficients on the other financial development components are not significant, which can be explained by the high correlation among the different components (see Figure 1).

These results, based on the limited available data, suggest that strengthening the institutional environment is key to enhancing per capita growth and financial sector performance. The results make intuitive economic sense. However, we caution that there may be quite a lot of measurement error in the calculation of several of the variables, including real GDP and investment, which could downward bias the estimates. This points to the need for more research into the area, including further work on improving statistical quality.

V. CONCLUSIONS

MENA countries have reformed their financial sectors over the past three decades. However, while they have made progress, their efforts have been eclipsed by faster reform and growth in other parts of the world. Against the backdrop of an increasingly globalized world, the challenge for MENA policymakers in moving away from financially repressive policies will be to implement prudent macroeconomic policies, along with structural reforms. Macro-stabilizing measures in turn should be complemented by creating the enabling structural environment for financial development, including reduced government intervention in credit allocation and strengthened institutional quality, particularly of the legal system.

Efforts should be concentrated where financial development appears to have been the weakest. For some countries, this means less involvement of the government in the financial system, including cutting back on public ownership of financial institutions and minimizing monetary financing of budget deficits, enhancing competition, investing in human resources, and strengthening the legal environment.

Experience shows that as policymakers implement reforms and stay the course, confidence in economic policies grows, with a positive impact on investment, economic growth, and employment over time.

Endnotes

[1] The views expressed in this paper are those of the authors and do not necessarily represent those of the IMF or IMF policy.

[2] The MENA region covers Afghanistan, Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, the United Arab Emirates, West Bank and Gaza, and Yemen.

[3] These indicators usually include the ratios of broad money to GDP and of credit to the private sector to GDP.

[4] See, for instance, Fry (1995), Beim and Calomiris (2001), and the surveys by Levine (1997, forthcoming) and Wachtel (2001).

[5] Empirical research supports the thesis that financial sector development is positively related to levels of income and growth. The magnitude of the relationship depends on the financial indicators used, estimation method, data frequency, and functional specification. See Levine (1997, forthcoming), Khan and Senhadji (2000), and Favara (2003). In addition, the direction of causation is debated. There is suggestive time series evidence that causality runs from finance to growth. See Neusser and Kugler (1998), Rousseau and Wachtel (1998, 2000), and Calderon and Liu (2003).

[6] The Cooperation Council for the Arab States of the Gulf (GCC) comprise Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

[7] Afghanistan, Iraq, and Somalia were excluded for lack of data. West Bank and Gaza was also excluded for the same reason.

[8] A sample of the questions in the survey questionnaire is presented in Appendix I.

[9] The International Financial Statistics and the World Economic Outlook are published by the IMF, the World Development Indicators are put forth by the World Bank, and the International Country Risk Guide (ICRG) is published by the PRS Group.

[10] Cetorelli and Gambera (2001) find that high banking concentration can facilitate growth of industrial sectors that are more in need of external finance, but find a general negative association of concentration on growth across all sectors and firms. La Porta, Lopez-de-Silanes, and Shleifer (2002) show that countries with higher government ownership of banks are associated with lower subsequent growth. Levine (2003) finds that, controlling for other factors, restrictions on foreign bank entry result in higher bank interest margins.

[11] See Levine and Zervos (1998), Demirguc-Kunt and Levine (2001), Levine (2002), and Beck and Levine (forthcoming). Note that this research mainly looks at stock market development and economic growth. Owing to the limited presence and availability of cross-country data, research has not been done on the effect on growth of other financial markets and instruments such as bonds and commercial paper.

[12] See La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998), and Levine (1998, 1999).

[13] Appendix II describes the variables used to compute the comprehensive index.

[14] Indices that attempt to capture several different dimensions of an issue in a single or in a small set of measures invariably involve choices of variables to use and weights to assign. This imparts an element of subjectivity to the analysis, and a biased choice of variables or weights could lead to incorrect inferences. Our choice of variables and weights reflect our understanding of what is likely to be important to distinguish more developed financial systems from less developed ones, and what is commonly found in the literature. It also reflects constraints on what could be measured quite easily. By altering the assigned weights, we confirm that our qualitative inferences are not sensitive to the particular choice of weights.

[15] Combining different data series to create an index invariably involves assigning weights to each component. Principal components analysis standardizes the series, and examines the covariances between the standardized variables to generate weights which reflect the common properties of the series.

[16] A potentially important aspect is examining the contribution to non-oil growth, which is hindered by the limited availability of data. In the neoclassical model, real per capita GDP growth is positively related to the investment to GDP ratio and negatively related to the initial per capital income level and population growth. The specification, augmented with the financial development term, has been used in several papers, including Gelbard and Leite (1999) and Khan and Senhadji (2000).

[17] Owing to lack of data, however, we were unable to correct for potential simultaneity bias.

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APPENDIX I. SURVEY QUESTIONS FOR THE MENA COUNTRIES

This appendix presents a sample of the survey question areas to which MENA country economists at the IMF responded.

1. Brief history of financial liberalization
2. Monetary policy objectives
3. Commonly used monetary policy tools:
 4. Direct monetary policy instruments: interest rate liberalization, credit controls, and directed credit.
 5. Indirect monetary policy instruments: active uses of reserve requirements, the rediscount window, and/or OMOs.
6. Government securities: types, market or non-market distribution, existence of secondary markets, liquidity.
7. Banking sector development:
 8. Is the sector well-developed, profitable, and efficient?
 9. Total number of banks, including foreign banks and Islamic banks, and number of public banks.
 10. Entry and exit of banks
11. Nonbank financial sector
 12. Stock markets
 13. Housing finance
 14. Are there active mortgage markets, pension funds, insurance companies, mutual funds, corporate bonds, and interbank markets?
15. Regulation and supervision:
 16. Is banking supervision and regulation considered adequate?
 17. Is prudential information collected on a regular basis, including inspection and auditing?
 18. NPLs and provisioning requirements
19. Openness

20. Exchange rate regime: a description
21. Article VIII or Article XIV status
22. Free from restrictions on purchase/sale of financial assets by foreigners?
23. Free from restrictions on purchase of foreign currency by residents?
24. Free from repatriation requirements?

Appendix II. Methodology for Computing the Comprehensive Index of Financial Sector Development

This appendix presents the 35 qualitative and quantitative data and the methodology used to construct the comprehensive index as well as the six sub-indices of financial sector development. The qualitative data are rated on a 0-1-2 scale, and the quantitative data are normalized so as to be in the [0, 2] range. The weights used to construct the indices are provided in brackets.

1. Development of the Monetary Sector and Monetary Policy (Weight: 20%)

a. Quantitative Data: Ratio of M2 to GDP (5%)

b. Indirect Instruments of Monetary Policy (4%)

Mostly direct monetary policy instruments used	0
Some indirect policy instruments used, but not very regularly or flexibly	1
A range of indirect monetary policy instruments are actively and flexibly used (e.g., through regular open market operations)	2

c. Credit Controls and Directed Credits (3%)

Allocation of credit is closely controlled and directed, or moral suasion is heavily relied upon	0
Allocation of credit not mandated by authorities but ceilings to certain sectors exist, or moral suasion in allocating credit may be used	1
No government involvement in credit allocation	2

d. Interest Rate Liberalization (5%)

Interest rates set by authorities	0
Interest rates partially liberalized (e.g., authorities set minimum or maximum or range)	1
Interest rates fully liberalized	2

e. Government Securities (3%)

Government securities (T-bills) do not exist or are not auctioned or	0
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distributed via market mechanisms	
Government securities exist and are auctioned or distributed using market mechanisms, but there is no active secondary market	1
Government securities exist, are auctioned or distributed through some market mechanism, and there are active secondary markets	2

2. Banking Sector Size, Structure, Efficiency (Weight: 25%)

a. Development and Profitability of the Banking Sector (5%)

Banking sector as a whole is inefficient	0
Some banks are profitable, but significant portion of banking sector still inefficient or suffers losses	1
Vast majority of banks profitable/efficient	2

b. Privatization of Commercial Banking Sector (3%)

Substantial presence of public institutions in commercial banking sector with no efforts at privatization	0
Substantial presence of public institutions in commercial banking sector, but some privatization has occurred	1
Commercial banks largely private	2

c. Quantitative Data:

Ratio of Credit to Private Sector by Deposit Money Banks to GDP (3%)

d. Quantitative Data:

Deposit Money Bank Assets/Total Banking Sector Assets (3%)

Total Banking Sector Assets \equiv (Assets of Deposit Money Bank assets + Central Bank assets)

e. Quantitative Data: 1 — RR (3%)

RR \equiv Reserve Ratio

= (Commercial Bank Reserves/Broad Money — Currency Outside Banks)

f. Interest Rate Spreads (Banking Sector Competition) (3%)

High spreads (above 6 percent) or interest rates set administratively or collusively	0
Moderate spreads (between 4 and 6 percent)	1
Low spreads (less than 4 percent)	2

g. Concentration in the Banking Sector (3%)

Banking sector highly concentrated (3 banks account for 70% of assets, loans or deposits, or 2 banks account for 60% or 1 bank accounts for 40%)	0
Moderate concentration in the banking sector (5 banks account for 70% of assets, loans or deposits, or 4 banks for 60% or 3 banks for 50% or 2 banks for 40% or 1 bank for 25%)	1
Banks have low industry concentration (the conditions above do not hold)	2

h. Are Foreign Banks Present? (2%)

No	0
Yes	2

3. Development of Nonbank Financial Sector (Weight: 15%)

a. Stock Market (4%)

No stock market, or trading is very limited (e.g., turnover ratio < 20 percent)	0
Market exists, but trading is somewhat limited (e.g., turnover ratio between 20 and 40 percent)	1
Active stock market with substantial trading (e.g., turnover ratio > 40 percent)	2

b. Housing Finance (2%)

Difficult to obtain housing finance	0
Possible to obtain housing loans (some specialized housing finance institutions exist)	1
Large and active mortgage markets (size>30 percent of GDP), and easy to obtain housing finance	2

c. Other Nonbank Financial Markets and Instruments (4%)

At most one of the following institutions/instruments exist, but is not well developed and activity is limited: Pension Funds, Mutual Funds, Corporate Bonds, Insurance Companies	0
At most three of the following institutions/instruments exist, but activity is limited: Pension Funds, Mutual Funds, Corporate Bonds, Insurance Companies	1
The following institutions/instruments exist, and are well developed with substantial activity: Pension Funds, Mutual Funds, Corporate Bonds, Insurance Companies	2

d. Interbank Transactions (5%)

Interbank markets may exist, but are inactive	0
Interbank markets exist, but need further development and/or have limited trading activity	1
At least two interbank markets with substantial trading activity	2

4. Quality of Banking Regulation and Supervision (Weight: 15%)

a. Basle Capital Adequacy Requirements (3%)

More than half the banks do not meet Basle Capital Adequacy Requirements (CAR)	0
Many banks meet CAR requirements (between 50 and 75 percent), but a significant proportion do not	1
Banking Sector as a whole largely or fully compliant (over 75 percent of banks)	2

b. Prudential Monitoring of Banks (3%)

Weak and needs significant strengthening (that is, prudential information not collected regularly and banks are not adequately monitored/audited)	0
Moderate but still needs strengthening	1
Adequate (prudential information is collected and banks are monitored/audited regularly)	2

c. Nonperforming Loans and Provisions (2%)

Nonperforming loans are large relative to size of banks' loan portfolio (Guideline: >15% when defined as 90 days in arrears)	0
Nonperforming loans are not yet low, but are either (a) declining, or (b) adequately provisioned, or (c) high only for some banks but not others	1
Nonperforming loans are small relative to size of banks' loan portfolio (Guideline: <6% when defined as 90 days in arrears)	2

d. Independence of the Central Bank (3%)

Central bank not independent	0
Central bank somewhat independent (but is required to consult with other government offices)	1
Central bank largely independent	2

e. Transparency and Availability of Financial and Monetary Data (4%)

Financial and monetary data not available to the general public, or limited data available with long lags (4 months or more)	0
Basic financial and monetary data available to the public in a timely manner	1
A range of detailed financial and monetary data, including laws and procedures, easily available to the general public in a timely manner	2

5. Financial Sector Openness (Weight 10%)

a. Appropriate Market Determined Exchange Rate (2%)

Not appropriate	0
Somewhat appropriate	1
Appropriate	2

b. Multiple Exchange Rates or Parallel Markets (1%)

Yes	0
No	2

c. Restrictions on Foreign Currency Purchases by Residents (2%)

Yes	0
No	2

d. Restrictions on the Financial Activities of Non-residents (2%)

Yes	0
No	2

e. Forward Exchange Market (1%)

No	0
Yes	2

f. Repatriation Requirements (1%)

Yes	0
No	2

g. Article VIII Status (1%)

No	0
Yes	2

6. Institutional Environment (Weight: 15%)

- a. Is it Easy to Recover Loans through the Judicial System? (4%)

Difficult	0
Moderately difficult	1
Yes, the judicial system helps process of loan recovery	2

- b. Quantitative Data: Law and Order Tradition (Source: ICRG) (1%)
- c. Quantitative Data: Property Rights Index (Source: Heritage Foundation) (4%)
- d. Quantitative Data: Bureaucratic Quality (Source: ICRG) (2%)
- e. Quantitative Data: Government Involvement in Banking/Finance (Source: Heritage Foundation) (2%)
- f. Quantitative Data: Democratic Accountability (Source: ICRG) (2%)

