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Measuring Financial Development in the Middle East and North Africa: A New Database

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This paper develops a methodology to construct detailed indices of financial sector development across countries and uses it to create a new panel database of financial sector development in Middle East and North Africa (MENA) countries. It combines existing quantitative data with information from comprehensive surveys undertaken in 2000–01 and 2002–03. The data show that some MENA countries have relatively well-developed banking sectors and regulatory and supervisory regimes. However, across the region, the nonbank financial sectors and supporting institutions are in need of reform. The MENA region ranks far behind industrialized countries and East Asia in financial sector development. [JEL E44, E50, O16, O53]

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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.[1] 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 (see Levine, 1997; and Khan and Senhadji, 2000). Supporting evidence is typically based on a broad cross section of countries, where financial development is measured by a small set of statistical indicators.[2] However, comparatively little work has been done on (1) how to measure the specifics of financial sector development, taking into account the variety of markets and institutions that the financial sector is composed of; and (2) creating measures of financial development in the MENA region that go beyond simple aggregate indicators.

Going beyond simple "standard" quantitative indicators, such as the ratio of broad money (M2) to 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, but also regulation and supervision, degree of competition, financial openness, institutional capacity such as the strength of property rights, and the variety of markets and financial products that constitute a nation's financial structure.

The value added of our paper is in developing procedures to create indices to capture the development of some individual components of the financial sector, and in the new data set for MENA that we have compiled. Hence, we will focus on presenting how the data were gathered. This includes, importantly, two surveys we conducted in 2000–01 and 2002–03 of IMF country economists' desks for MENA countries. The data and the survey are organized in six themes, each of which is meant to capture a distinct component of financial development: the development of the monetary sector and monetary policy, banking sector development, nonbank financial sector development, regulation and supervision, financial openness, and institutional environment. Based on the data set compiled, we developed indices of financial sector development for the region and an alternative index with a smaller set of variables for the world, to allow for comparability across regions and over time.

We find that within the MENA region there is substantial variation in the degree of financial development. Some countries, such as Bahrain and Lebanon, are fairly well advanced, whereas a few others (for example, Libya, the Syrian Arab Republic, and the Islamic Republic of Iran) have significant room for

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

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

improvement. As a group, MENA countries appear to perform relatively well on regulation and supervision as well as on financial openness. However, they need to do significantly more to reinforce the institutional environment and promote nonbank financial sector development. Compared with most other developing country regions, the MENA region performs well based on the alternative financial development index, but it ranks far behind industrialized countries and East Asia.

I. Data Collection Process

We created a 48-question survey aimed at establishing measures for financial sector development. This questionnaire was partly based on surveys and tables used by Gelbard and Leite (1999) and Mehran and others (1998). We organized the data according to six themes, each of which reflects a different facet of financial development: (1) banking sector size, structure, efficiency; (2) development of nonbank financial sector; (3) quality of banking regulation and supervision; (4) development of the monetary sector and monetary policy; (5) financial sector openness; and (6) institutional environment. We describe the rationale behind organizing the data in these six themes in Section II.

We answered each of the 48 questions on the survey for each of 20 countries in the MENA region by drawing information from a number of IMF staff reports, *Recent Economic Developments,* and Economist Intelligence Unit reports. We augmented this information with macroeconomic, financial, and institutional panel data from the IMF's *International Financial Statistics,* IMF's *World Economic Outlook,* World Bank's *World Development Indicators,* the PRS Group's *International Country Risk Guide* (ICRG), the Heritage Foundation (HF), and the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions.*[3] We then circulated the completed survey to IMF country economists' desks in charge of each of the MENA countries in our sample to have them verify the information we culled from these sources. We then incorporated any corrections they made. This entire process was completed twice, once in 2000–01 and then again in 2002–03, to create two sets of financial development indices for each country for two points in time. Table 1 describes the survey questions that were used to ultimately create scores and rankings for each country, and lists the primary sources used for each response.

We consolidated the survey responses for each country in one table to perform some qualitative analyses: assess common trends, strengths, and weaknesses among MENA countries, and identify areas where reforms are most needed. We then reorganized the survey responses—in some cases combining information gathered from the answers to different questions and from additional quantitative data collected—in a way that ultimately allowed us to score each country along various dimensions of financial development. (The scoring process often forced us to rely on qualitative judgments of the survey responses.) These scores were used

[3]See also Reinhart and Rogoff's (2002) data on exchange rate classifications available via the Internet: http://www.wam.umd.edu/~creinhar/Links.html.

Table 1. Middle East and North Africa (MENA) Countries: Questions Included in the Survey for Financial Liberalization in MENA Countries

Themes and Components	Explanation	Sources
1. Banking Sector Size, Structure, Efficiency		
Number/type of licensed banks	Total number of banks, including public, foreign, development, offshore, Islamic, and specialized banks	Staff report, *Recent Economic Developments* (RED), Economic Intelligence Unit (EIU) reports, IMF country economists' desks
Total assets of banking sector (percent of GDP)	Asset size of all banks as percent of GDP	Staff report, RED, EIU reports, IMF country economists' desks
Public sector banks	Number of public banks	Staff report, RED, EIU reports, IMF country economists' desks
Islamic banks	Number of Islamic banks	Staff report, RED, EIU reports, IMF country economists' desks
Offshore banks	Number of offshore banks	Staff report, RED, EIU reports, IMF country economists' desks
Concentration of banking sector	Asset size of the largest three banks as a share of total assets in the banking sector	Staff report, RED, EIU reports, IMF country economists' desks
Entry of new banks	Do banking regulations allow for easy entry of new banks, or have there been new banks over the past three to five years?	Staff report, RED, IMF country economists' desks
Direction of credit	To which sectors does most commercial bank credit go (as percent of total)?	Staff report, RED, EIU reports, IMF country economists' desks
Deposit insurance	Is there deposit insurance? Is it implicit or explicit?	Staff report, RED, IMF country economists' desks
Noncash transaction activity	Are credit/debit cards, checks, automated teller machines widely used?	Staff report, RED, IMF country economists' desks
2. Development of Nonbank Financial Sector		
Nonbank financial sector	Are there mortgage markets, stock markets, pension funds, mutual funds, insurance companies, leasing companies, social security agencies, money changers?	Staff report, RED, EIU reports, IMF country economists' desks
Stock market	Gauge extent of stock market activity using measures of the market size, including market capitalization, number of firms, turnover, and trading	Staff report, RED, EIU reports, IMF country economists' desks

Table 1 *(continued)*

Themes and Components	Explanation	Sources
Housing finance/mortgage market	Is housing financed through a mortgage market? If not, how is housing financed?	Staff report, RED, IMF country economists' desks
Interbank market activity	Is the interbank market active?	Staff report, RED, IMF country economists' desks
3. Quality of Banking Regulation and Supervision		
Banking regulation and supervision	Is banking regulation and supervision adequate; that is, do regulations comply with Basel Core Principles? What are the weaknesses?	Staff report, RED, IMF country economists' desks
Banking system capital asset requirement	What is the capital adequacy ratio?	Staff report, RED, IMF country economists' desks
Share of nonperforming loans in total loans	What is the share of non-performing loans (defined as 90 days in arrears, where available)?	Staff report, RED, IMF country economists' desks
Limits on exposure to single borrowers or related borrowers	What is the concentration of loans? Is there connected or family lending? What are the limits on exposure?	Staff report, RED, IMF country economists' desks
Inspection and auditing	Describe and assess current practices	Staff report, RED, IMF country economists' desks
Payments system	Is the payment system processed manually or by computer? Is the central bank the clearinghouse?	Staff report, RED, IMF country economists' desks
Independence of central bank	Does the central bank appear to be independent from other branches of government?	Staff report, RED, IMF country economists' desks
Central bank borrower database	Do commercial banks have access to a borrower database?	Staff report, RED, IMF country economists' desks
Central bank website/ information dissemination	Are monetary data easily available to the general public? Is there a website with current data?	Country's central bank's website, IMF country economists' desks
IMF Board documents posted on IMF website	Have IMF documents been posted on the IMF website? If yes, which ones?	IMF website
4. Development of the Monetary Sector and Monetary Policy		
Direct Monetary Policy Instruments		
Interest rate liberalization	Are interest rates fully or partially liberalized? When? What remains under official control?	Staff report, RED, IMF country economists' desks

(*continued*)

Table 1 *(continued)*

Themes and Components	Explanation	Sources
Credit controls	Have all credit controls been removed (e.g., ceilings, directed credits for certain sectors)?	Staff report, RED, IMF country economists' desks
Indirect Monetary Policy Instruments		
Use of reserve requirements	Are changes in reserve requirements frequently used by the monetary authority?	Staff report, RED, IMF country economists' desks
Required reserve ratio	What is the required reserve ratio? What is the foreign currency required reserve ratio (if different from a domestic currency required reserve ratio)?	Staff report, RED, IMF country economists' desks
Rediscount window	Is the rediscount window facility actively used?	Staff report, RED, IMF country economists' desks
Open market operations	Are open market operations actively used?	Staff report, RED, IMF country economists' desks
Government securities market	How are government securities sold (e.g., type of auction)? What is the range of maturities?	Staff report, RED, IMF country economists' desks
Secondary market for government securities	Is the government securities secondary market active?	Staff report, RED, IMF country economists' desks
Government securities held by nonfinancial sector	What share is held by non-financial private sector? Financial institutions (e.g., pension funds)?	Staff report, RED, IMF country economists' desks
5. Financial Sector Openness		
Exchange rate regime	What is the exchange rate regime, officially and in practice?	*Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER)
Article VIII/XIV	Classify country according to Article VIII or XIV. IMF members accepting the obligations refrain from imposing restrictions on the making of payments and transfers for current international transactions and from engaging in discriminatory currency arrangements or multiple currency practices without IMF approval. Under Article XIV, the country continues to avail itself of the	AREAER

Table 1 *(concluded)*

Themes and Components	Explanation	Sources
	transitional arrangements of Article XIV. These arrangements allow an IMF member to maintain or adapt those restrictions to current transactions that were in effect at the time it became a member. The country is expected to eliminate those restrictions as soon as possible, and the introduction of new restrictions is not allowed.	
Multiple exchange rates	Is country free from multiple exchange rates?	AREAER
Parallel exchange market	Is country free from a parallel exchange market?	AREAER
Forward exchange market	Is there a forward exchange market?	AREAER
Restrictions on purchase/sale of financial assets by foreigners	Are foreigners free to purchase/sell financial assets?	AREAER
Restrictions on purchase of foreign currency by residents	Are residents free from restrictions on purchase of foreign currency?	AREAER
Repatriation requirements	Are exporters free from the obligation to repatriate export proceeds?	AREAER
6. Institutional Environment		
Legal tradition	What is the main legal tradition, (e.g., dominated by British, French, or Islamic law)?	La Porta and others, 1998
Loan recovery	Can loans be recovered through the judicial system easily and reasonably quickly?	Staff report, RED, IMF country economists' desks
Law and order	Index rating	*International Country Risk Guide* (ICGR)
Property rights	Index rating	Index of Economic Freedom, Heritage Foundation
Government involvement in banking/finance	Index rating	Index of Economic Freedom, Heritage Foundation
Bureaucracy	Index rating	ICGR
Democratic accountability	Index rating	ICGR

to construct new indices of financial development, which are described in detail in Section III. Table 2 describes how the data were reorganized, the variables, their weights (described in detail in Section III), score methodology, definitions, the rationale for including them in a financial development index, and data sources.

II. Rationale Behind the Organization of the Data

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. Following a similar approach, we created a comprehensive index for 20 MENA countries for 2000–01 and 2002–03 using six themes: monetary sector development and monetary policy, banking sector development, nonbank financial sector development, regulation and supervision, financial openness, and institutional environment.

The *monetary sector development and monetary policy* theme 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.

The *banking sector development* theme examines the size, structure, and efficiency of the banking sector. Among other things, it investigates the profitability of banks, bank competition and concentration, payments systems, ease of private sector access to bank credit, and frequency of noncash transactions. Drawing on recent empirical research, the presumption is that 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, and restrictions on foreign bank entry hinder allocative efficiency.[4]

The *nonbank financial sector development* theme explores the development of alternative 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

[4]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.

Table 2. Data Definitions, Weights, Scores, and Sources for Computing Financial Development Indices

Themes and Components	Definition/Score Methodology	Sources
1. Banking Sector Size, Structure, Efficiency (Weight: 25 percent)		
Development and profitability of the banking sector (5 percent)	We included banks in our measure because they 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. This measure examines whether there is large public ownership, government financing need, or weak supervision; whether there were banking crises in the past 15 years; whether bank management capacity is adequate; whether banks are solvent; whether banks have been capitalized. The score is 0 if banking sector as a whole is inefficient; 1 if some banks are profitable, but significant portion of banking sector is still inefficient or suffers losses; 2 if vast majority of banks are profitable/efficient.	Staff report, *Recent Economic Developments* (RED), Economic Intelligence Unit (EIU) reports, IMF country economists' desks
Privatization of banking sector (3 percent)	Private banks are associated with higher financial development, stronger supervision, and less government intervention. The score is 0 if there is substantial presence of public institutions in the banking sector with no efforts at privatization; 1 if there is substantial presence of public institutions in banking sector, but some privatization has occurred; 2 if banks are largely private.	Staff report, RED, EIU reports, IMF country economists' desks

Table 2 *(continued)*

Themes and Components	Definition/Score Methodology	Sources
Ratio of credit to private sector by deposit money banks to GDP (3 percent)	A proxy for the extent of activity of financial intermediaries. Private credit captures the financial intermediation with the private nonfinancial sector.	*International Financial Statistics* (IFS), *World Economic Outlook* (WEO)
Deposit money bank assets/ banking sector assets (3 percent)	This is a relative size indicator that measures the importance of deposit money banks relative to the banking sector.	IFS
Reserve ratio (3 percent)	Bank reserves over money and quasi-money (M2), less currency held outside of banks. The high required ratio of reserves and the low interest rates banks earn on those reserves reflect governments' desire to maintain a tax device capable of generating substantial implicit revenue. When this tax becomes large, it has a serious negative effect on the financial system.	IFS
Interest rate spreads (3 percent)	The difference between loan and deposit rates. Used as an indicator of competition in the banking sector. The score is 0 if there are high spreads (above 6 percent) or interest rates are set administratively or collusively; 1 if there are moderate spreads (between 4 and 6 percent); 2 if there are low spreads (less than 4 percent).	Staff report, RED, EIU reports, IMF country economists' desks
Concentration in the banking sector (3 percent)	A highly concentrated commercial banking sector might result in lack of competitive pressure to attract savings and channel them efficiently to investors. The score is 0 if the banking sector is highly concentrated (three banks account for 70 percent of assets, loans, or deposits; or two banks account for 60 percent;	Staff report, RED, EIU reports, IMF country economists' desks

Table 2 *(continued)*

Themes and Components	Definition/Score Methodology	Sources
	or one bank accounts for 40 percent); 1 if there is moderate concentration in the banking sector (five banks account for 70 percent of assets, loans, or deposits; or four banks for 60 percent; or three banks for 50 percent; or two banks for 40 percent; or one bank for 25 percent); 2 if banks have low industry concentration (the conditions above do not hold).	
Presence of foreign banks (2 percent)	A proxy for competition and efficiency in the banking system. Countries that repress their domestic banking system also typically restrict access to the financial system. The score is 0 if there are no foreign banks; 2 if there are.	Staff report, RED, EIU reports, IMF country economists' desks
2. Development of Nonbank Financial Sector (Weight: 15 percent)		
Stock market (4 percent)	We use the stock market turnover ratio as an efficiency indicator of stock markets. It is defined as the ratio of the value of total shares traded and market capitalization. The score is 0 if there is no stock market, or trading is very limited (e.g., turnover ratio < 20 percent); 1 if a stock market exists, but trading is somewhat limited (turnover ratio between 20 and 40 percent); 2 if the stock market is active with substantial trading (turnover ratio > 40 percent).	Staff report, RED, EIU reports, IMF country economists' desks
Housing finance (2 percent)	Examines the extent to which housing is financed through mortgage markets. The presence of housing financial institutions is also an ingredient in the development of the nonbank financial sector.	Staff report, RED, IMF country economists' desks

Table 2 *(continued)*

Themes and Components	Definition/Score Methodology	Sources
	The score is 0 if it is difficult to obtain housing finance; 1 if it is possible to obtain housing loans (some specialized housing finance institutions exist); 2 if there are large and active mortgage markets (size > 30 percent of GDP) and it is easy to obtain housing finance.	
Other nonbank financial markets and instruments (4 percent)	Examines whether there is substantial activity in pension funds, mutual funds, corporate bonds, insurance companies. Measures the size and activity of nonbank financial intermediaries. The score is 0 if at most one of the nonbank financial institutions exists, but is not well developed and activity is limited; 1 if at most three nonbank institutions exist, but activity is limited; 2 if nonbank institutions exist and are well developed with substantial activity.	Staff report, RED, IMF country economists' desks
Interbank transactions (5 percent)	Examines the degree of trading activity in interbank transactions. The score is 0 if interbank markets exist, but are inactive; 1 if interbank markets exist, but need further development and/or have limited trading activity; 2 if interbank markets exist with substantial trading activity.	Staff report, RED, IMF country economists' desks
3. Quality of Banking Regulation and Supervision (Weight: 15 percent)		
Basel capital adequacy ratio requirements (3 percent)	Measures the extent to which banks comply with Basel capital adequacy ratio (CAR) requirements. Financial development, in general, tends to be higher where banks comply with Basel CAR requirements.	Staff report, RED, IMF country economists' desks

Table 2 *(continued)*

Themes and Components	Definition/Score Methodology	Sources
	The score is 0 if more than half the banks do not meet Basel CAR; 1 if many banks meet CAR (between 50 and 75 percent), but a significant proportion do not; 2 if the banking sector as a whole is largely or fully compliant (more than 75 percent of banks).	
Prudential monitoring of banks (3 percent)	Considers the level of prudential monitoring in banks, including adequate audit and availability of data collection for monitoring. Countries with more developed financial markets tend to follow stricter prudential monitoring of banks. The score is 0 if prudential monitoring of banks is weak and needs significant strengthening (that is, prudential information is not collected regularly and banks are not adequately monitored/audited); 1 if prudential monitoring of banks is moderate but still needs strengthening; 2 if prudential monitoring is adequate.	Staff report, RED, IMF country economists' desks
Nonperforming loans (2 percent)	Ratio of nonperforming loans (NPLs) to total loans. Countries with more developed financial markets tend to have lower NPLs. The score is 0 if NPLs are large relative to the size of banks' loan portfolio (greater than 15 percent when defined as 90 days in arrears); 1 if NPLs are not yet low, but are either (a) declining, (b) adequately provisioned, or (c) high only for some banks but not others; 2 if NPLs are small relative to the size of banks' loan portfolio (less than 6 percent when defined as 90 days in arrears).	Staff report, RED, IMF country economists' desks

Table 2 *(continued)*

Themes and Components	Definition/Score Methodology	Sources
Independence of the central bank (3 percent)	Examines whether a central bank needs to extend credit to the government and/or is required to consult with other government offices. Independent central banks tend to have a more developed financial market because they can conduct their monetary policy without interference. The score is 0 if the central bank is not independent; 1 if the central bank is somewhat independent (but is required to consult with other government offices); 2 if the central bank is largely independent.	Staff report, RED, IMF country economists' desks
Transparency and availability of financial and monetary data (4 percent)	Examines whether financial and monetary data are made available to the public and whether they are provided in a timely manner. A country with more developed financial markets tends to also make public their data. The score is 0 if financial and monetary data are not available to the public, or limited data are available with long lags (four months or more); 1 if basic financial and monetary data are available to the public in a timely manner; 2 if a range of detailed financial and monetary data, including laws and procedures, are easily available to the public in a timely manner.	Website for the country's central bank, IMF country economists' desks
4. Development of the Monetary Sector and Monetary Policy (Weight: 20 percent)		
Ratio of M2 to GDP (5 percent)	This is a commonly available indicator of financial intermediation. M2 is a typical measure of financial "depth" and thus of the overall size of the financial sector.	IFS, WEO

Table 2 *(continued)*

Themes and Components	Definition/Score Methodology	Sources
Indirect instruments of monetary policy (4 percent)	Examines the degree to which countries use changes in reserve requirements, rediscount window, and open market operations actively. The use of indirect instruments of monetary policy is typically associated with higher financial development and less financial repression. The score is 0 if mostly direct monetary policy instruments are used; 1 if some indirect policy instruments are used, but are not regularly and flexibly used; 2 if a range of indirect monetary policy instruments are actively and flexibly used (e.g., through regular open market operations).	Staff report, RED, IMF country economists' desks
Credit controls and directed credit (3 percent)	Considers the degree to which allocation of credit is closely controlled and directed or moral suasion is heavily relied upon. Higher credit controls and directed credit characterize a financially repressed economy. The score is 0 if credit allocation is closely controlled and directed, or moral suasion is heavily relied upon; 1 if credit allocation is not mandated by authorities but ceilings to certain sectors exist, or moral suasion in allocating credit is used; 2 if there is no government involvement in credit allocation.	Staff report, RED, IMF country economists' desks
Interest rate liberalization (5 percent)	Market-determined interest rates are associated with a more developed financial system. The score is 0 if interest rates are set by the authorities;	Staff report, RED, IMF country economists' desks

Table 2 *(continued)*

Themes and Components	Definition/Score Methodology	Sources
	1 if interest rates are partially liberalized (e.g., authorities set minimum or maximum or range); 2 if interest rates are fully liberalized.	
Government securities (3 percent)	The availability of securities is also an indication of a more developed financial system. The score is 0 if government securities do not exist or are not auctioned or distributed via market mechanisms; 1 if government securities exist and are auctioned or distributed using market mechanisms, but there is no active secondary market; 2 if government securities exist and are auctioned or distributed through some market mechanisms, and there are active secondary markets.	Staff report, RED, IMF country economists' desks
5. Financial Sector Openness (Weight: 10 percent)		
Appropriate market-determined exchange rate (2 percent)	Are market forces allowed to determine the exchange rate? High intervention in the foreign exchange market to maintain an exchange rate at a certain "desired" level could create imbalances and, eventually, difficulties in the financial system. The score is 0 if not appropriate; 1 if somewhat appropriate; 2 if appropriate.	*Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER)
Multiple exchange rates or parallel markets (1 percent)	The presence of multiple exchange rates or parallel markets could signal imbalances in the foreign exchange market, hindering investment and causing speculative arbitrage. The score is 0 if country has multiple exchange rates or parallel markets; 2 if it does not.	AREAER

Table 2 *(continued)*

Themes and Components	Definition/Score Methodology	Sources
Restrictions on foreign currency purchases by residents (2 percent)	A measure of capital transaction controls. The score is 0 if there are restrictions on foreign currency purchases by residents; 2 if not.	AREAER
Restrictions on the financial activities of nonresidents (2 percent)	A measure of capital transaction controls. The score is 0 if there are restrictions on the financial activities of nonresidents; 2 if not.	AREAER
Forward exchange market (1 percent)	The presence of a forward exchange market signals a developed foreign exchange market. The score is 0 if there is no forward exchange market; 2 if there is.	AREAER
Repatriation requirements (1 percent)	Repatriation requirements could discourage exports and investment. The score is 0 if there are repatriation requirements; 2 if there are not.	AREAER
Article VIII status (1 percent)	Has the country accepted the obligations of Article VIII? IMF members accepting the obligations refrain from imposing restrictions on the making of payments and transfers for current international transactions or from engaging in discriminatory currency arrangements or multiple currency practices without IMF approval. If countries have not accepted obligations under Article VIII, they maintain restrictions on current transactions. The score is 0 if a country has not accepted Article VIII obligations; 2 if it has.	AREAER

Table 2 *(concluded)*

Themes and Components	Definition/Score Methodology	Sources
6. Institutional Environment (Weight: 15 percent)		
Ease of recovering loans through the judicial system (4 percent)	Countries with stronger institutions tend to have a more developed and efficient financial system. The score is 0 if it is difficult to recover loans through the judicial system; 1 if it is moderately difficult; 2 if the judicial system helps the process of loan recovery.	Staff report, RED, IMF country economists' desks
Law and order tradition (1 percent)	The "law" subcomponent is an assessment of the strength and impartiality of the legal system; the "order" subcomponent is an assessment of popular observance of the law.	Staff report, RED, IMF country economists' desks
Property rights index (4 percent)	The extent to which the government protects private property by enforcing the laws and how safe private property is from expropriation.	Index of Economic Freedom, Heritage Foundation
Bureaucratic quality (2 percent)	High points are given to countries where the bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services.	*International Country Risk Guide* (ICRG)
Government involvement in banking/finance (2 percent)	The degree of government involvement in banking/finance. The more banks are controlled by the government, the less free they are to engage in financial services that facilitate economic growth.	Index of Economic Freedom, Heritage Foundation
Democratic accountability (2 percent)	This is a measure of how responsive the government is to its people.	ICRG

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.[5] 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 (2002) 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.

The *regulation and supervision* theme assesses banks' performance with respect to minimum (Basel) capital adequacy requirements. Among other items, it evaluates the prudential monitoring of banks and the transparency and openness of the regulatory environment.

The *financial openness* theme assesses the appropriateness of the exchange regime and 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, are in place. 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 from the allocation of local savings to promising investment alternatives globally.

Finally, 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. Some components of this theme (for example, democratic accountability) are admittedly less directly related to financial development than others (for example, judicial loan recovery). This is accounted for in the relative weights placed on the various components.

III. Index Creation

To capture a country's "development" along each of the six themes mentioned above, we developed and scored countries on six different subindices, which we then combined to construct a comprehensive index (that is, a composite measure of "financial development") for each country. Each of these six subindices was based on between four and eight different indicators that allowed us to measure the

[5]See Levine and Zervos (1998), Demirgüç-Kunt and Levine (2001), Levine (2002), and Beck and Levine (2004). 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.

various subfacets of each area. The comprehensive index, therefore, was a combination of 35 different indicators drawn from the 48 survey questions, as described in Tables 1 and 2. For instance, under the banking sector development theme, the relevant subindex attempted to create indicators relating to banking sector size, structure, and efficiency. Box 1 shows the specific aspects of banking sectors that we tried to measure in building the subindex for banking development.

Much of the data appears in a mix of quantitative and qualitative forms. For example, in coding concentration in the banking sector, we were able to determine that in Bahrain, two of 21 commercial banks account for 57 percent of bank assets, whereas in Jordan, the three largest banks hold 90 percent of bank assets, with the Arab Bank alone accounting for 60 percent of assets. Because the two sets of numbers are not directly comparable, we had to make some qualitative judgments in rating the banking sector concentration on a 0-1-2 scale. For each country and indicator, we coded the score 0–2 based on the responses in the survey, with higher values indicating a higher degree of development. We first developed "rules" for the coding to limit errors introduced by qualitative judgments (Table 2). For instance, for the indicator on interest rate spread (difference between loan and deposit interest rates), we used the following rule for scoring:

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

For these qualitative assessments, the 0-1-2 scoring scale was chosen instead of a binary scale, because this more-detailed scale allows us to differentiate between countries in terms of various dimensions of financial development more appropriately. For example, with respect to the stock market (under the nonbank financial sector index), a binary question allows us to test only for stock market presence; the 0-1-2 scale, however, allows for a further differentiation of countries where stock markets are merely present from countries where they are active and characterized by substantial trading activity. In some cases, where such differentiation is not

Box 1. Subindex for Banking Sector Development: Specific Indicators

- Development and profitability of the banking sector
- Privatization of commercial banking
- Credit to private sector by deposit money banks as a share of GDP
- Deposit money bank assets as a share of deposit money bank plus central bank assets
- Reserve ratio
- Banking sector competition (interest rate spreads, ease of new entry)
- Geographic and market concentration in the banking sector
- Presence of foreign banks

sensible or possible (for example, is the country free from multiple exchange rates?), a binary scale is used. Because scores from the various questions are combined to construct the indices, all scores are rescaled so that they fall in the range 0 to 2, with higher scores corresponding to higher levels of financial development. For example, all the strictly quantitative data with more continuous variation that we had at our disposal (for example, credit to private sector as a share of GDP) were normalized to yield numerical results in the 0–2 range. Finally, the combined subindices and financial development index were normalized to generate composite scores on a 0–10 point scale. The results are presented in Tables 3 and 4 and Figure 1.

Weighting of Variables

The comprehensive financial development index is a weighted average of the 35 different indicators, which implies that we had to assign weights to each indicator. Weights were selected on the basis of the authors' interpretation of the relative importance of

Table 3. MENA Countries: Comprehensive Financial Development Index[1]

(Based on qualitative and quantitative data, scale: 0–10)[2]

	2000–01	2002–03
Bahrain	7.5	7.7
Lebanon	7.0	7.0
Jordan	6.8	6.9
Kuwait	6.7	6.8
United Arab Emirates	6.6	6.6
Saudi Arabia	6.2	6.4
Pakistan	4.8	6.0
Oman	5.9	5.9
Qatar	5.6	5.7
Tunisia	4.8	5.6
Morocco	4.8	5.5
Egypt	5.5	5.4
Sudan	3.3	4.7
Djibouti	3.3	4.1
Yemen, Republic of	3.8	3.9
Mauritania	3.2	3.5
Algeria	3.5	3.2
Iran, Islamic Rep. of	1.6	2.5
Syrian Arab Republic	1.2	1.1
Libya	1.2	1.0
Average	**4.7**	**5.0**

Source: Authors' calculations.

[1]Original "subjective" weighted index.

[2]Scale: Very low = 2.5 and below, Low = 2.6–4.9, Medium = 5.0–5.9, High = 6.0–7.5, Very high = above 7.5.

Table 4. MENA Countries: Financial Development Index, 2002–03[1]

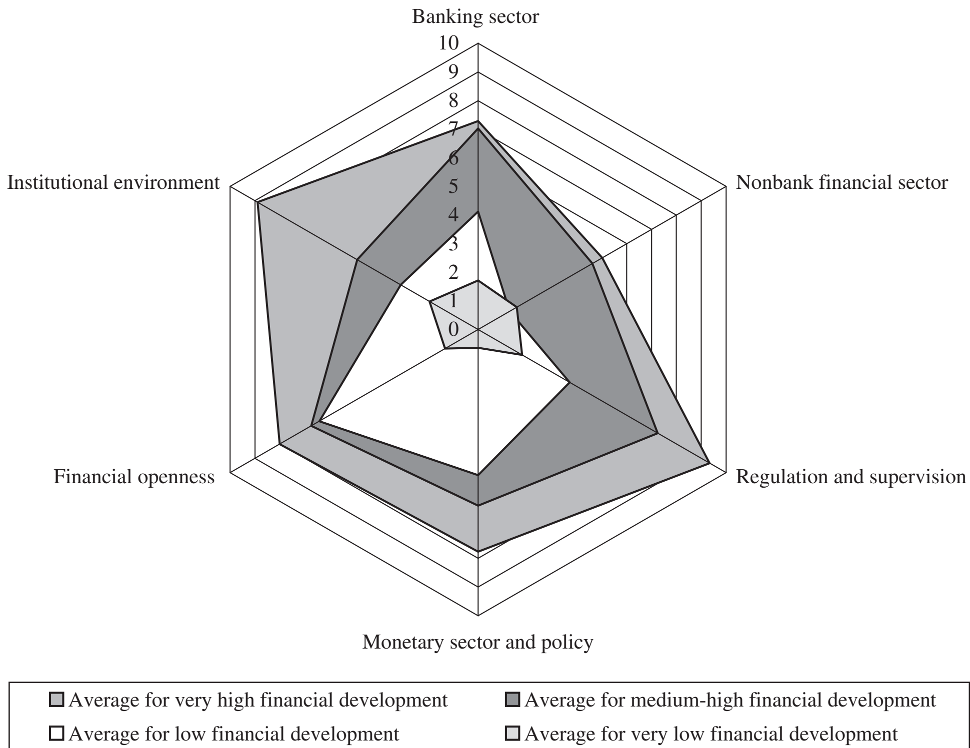
(Based on qualitative and quantitative data, scale: 0–10)[2]

	Financial Development Index	Banking Sector	Nonbank Financial Sector	Regulation and Supervision	Monetary Sector and Policy	Financial Openness	Institutional Environment
Bahrain	7.7	7.3	5.0	9.3	7.8	8.0	8.9
Lebanon	7.0	8.7	3.3	7.7	8.3	7.0	5.2
Jordan	6.9	7.1	6.3	8.7	6.5	8.0	5.4
Kuwait	6.8	7.4	5.0	8.0	6.6	8.0	5.9
United Arab Emirates	6.6	7.9	5.0	6.7	5.8	8.0	5.9
Saudi Arabia	6.4	7.8	3.3	8.0	6.4	8.0	4.2
Pakistan	6.0	5.8	6.3	7.7	7.4	4.0	3.9
Oman	5.9	6.1	5.0	8.3	4.2	8.0	4.8
Qatar	5.7	6.8	0.7	6.7	5.7	8.0	6.3
Tunisia	5.6	7.7	4.7	5.3	4.5	5.0	5.0
Morocco	5.5	5.6	4.7	7.3	6.8	4.0	3.8
Egypt	5.4	6.0	6.3	5.3	5.6	6.0	3.2
Sudan	4.7	5.7	0.7	3.7	6.2	7.0	4.5
Djibouti	4.1	3.8	1.3	5.0	6.0	7.0	2.0
Yemen, Republic of	3.9	4.1	0.7	3.3	5.0	9.0	2.2
Mauritania	3.5	3.8	0.7	3.0	3.9	5.0	4.5
Algeria	3.2	2.5	3.0	3.5	4.4	4.0	2.3
Iran, Islamic Rep.	2.5	1.9	3.3	4.7	0.5	4.0	2.4
Syrian Arab Republic	1.1	1.9	0.7	0.0	0.9	0.0	2.4
Libya	1.0	1.3	0.7	2.0	0.5	0.0	1.0
Average	5.0	5.5	3.3	5.7	5.1	5.9	4.2

Source: Authors' calculations.
[1]Original "subjective" weighted index.
[2]Scale: Very low = 2.5 and below, Low = 2.6–4.9, Medium = 5.0–5.9, High = 6.0–7.5, Very high = above 7.5.

Figure 1. MENA: Comprehensive Index of Financial Development—Comparing Very High, High, Medium, Low, and Very Low Development Countries, 2002–03

(Scale 0–10)



Source: Authors' calculations.

each relevant variable, which partly stems from our reading of the existing literature on financial development (Table 2). We altered the set of weights assigned in various ways to check whether the financial development index we computed is robust to alternative weighting schemes.[6] We grouped countries according to the composite index under five categories of financial development: very high (above 7.5), high (6.0–7.5), medium (5.0–5.9), low (2.6–4.9), and very low (2.5 and below) (see Table 3). 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.

[6]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 reflects 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.

There are also alternative statistical methods, such as factor analysis and principal components analysis, to assign weights that would not be affected by any subjective errors that we make. Although our primary approach was to rely on our qualitative judgment to identify and then assign relative weights to different components of financial development, we also used principal components analysis (PCA) to generate an alternative set of weights. Roughly speaking, PCA examines the statistical correlations across scores on the different indicators, and assigns the largest weights to those indicators of financial development most correlated with the other indicators in the data set. Intuitively, this method tries to uncover the common statistical characteristics across the various indicators to combine them into a composite index of financial development. Because 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 was judged to be the most accurate indicator of financial development.

The PCA-generated weights serve as a check for the sensitivity of our results. We recreated each of the six subindices using PCA. The index values generated for the 40 data points (20 countries, two time periods) are highly correlated with the original index values that used weights 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 subindices is greater than 0.97. As a result, generating weights using PCA instead would not change our conclusions significantly.

PCA also helps identify a subset of variables that, according to the correlations in the data, are the most crucial indicators of financial development. Table 5 lists 18 variables (out of 35) that were assigned a weight of 3 percent or greater (of the total weight across all 35 indicators) by PCA. These 18 variables jointly account for approximately 80 percent of the total weight. The last column in Table 5 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. However, 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 (for example, democratic accountability, housing finance, quality of the bureaucracy, law and order) get close to a zero weight. The PCA does yield a sensible set of results and allows us to reduce our reliance on qualitative judgments in developing indicators of financial development.

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 subindices to the summary indicator of financial development (Table 6). Although 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 PCA suggests that the variables that make up "banking regulation/supervision" and "banking sector" are jointly the most telling indicators of financial development in our MENA data. Comparison across the two columns of Table 6 also indicate that according to PCA, our subjective judgments overemphasized the roles of "monetary sector/

Table 5. Comparison of Index Weights by Variable
(In percent)

Variables	Principal Components Weights	Qualitatively Assigned Weights
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 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
Basel 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
Interbank transactions markets	3.7	5
Interest rate liberalization	3.6	5
Indirect instruments of monetary policy	3.5	4
Government securities	3.0	3
Nonperforming loans	3.0	2

Source: Authors' calculations.

policy" and the "nonbank financial sector" in constructing measures of financial development.

Alternative Index

Because information needed to construct the comprehensive financial development index is not available at the required level of detail for the MENA countries

Table 6. Comparison of Index Weights by Theme
(In percent)

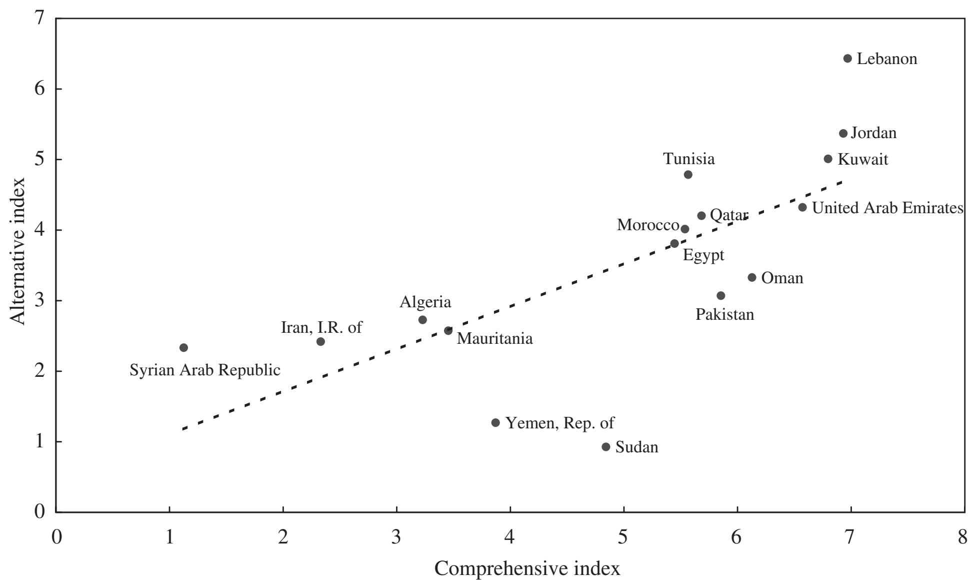
Themes	Principal Components Weights	Qualitatively Assignment Weights
Banking sector development	21.3	25
Monetary sector and policy	12.8	20
Banking regulation and supervision	21.4	15
Institutional environment	19.0	15
Nonbank financial sector	7.8	15
Financial sector openness	17.7	10

Source: Authors' calculations.

over long periods of time or for other countries, we developed an alternative, simpler index based solely on a few widely available quantitative data series, similar to an index developed by Beim and Calomiris (2001). This alternative index allows us to analyze the development of financial systems within MENA countries over a longer period, and also allows us to compare the MENA region to other regions.

To construct the index, we combined four variables commonly cited in the literature as measures of financial development using PCA. The four variables were (1) ratio of broad money (M2) to GDP, (2) ratio of the assets of deposit money banks to assets of the central bank plus deposit money banks, (3) reserve ratio, and (4) ratio of credit to the private sector by deposit money banks to GDP. These variables measure the size of the financial sector, the importance and relative ease with which 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 any one of the four 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. All scores are rescaled so that they fall in the range of 0 to 10, with higher scores corresponding to higher levels of financial development. Figure 2 compares the values of this alternative index computed for MENA countries for the 1990s to the 2000–01 comprehensive financial devel-

Figure 2. MENA Countries: Comparing the Comprehensive and Alternative Indices



Source: Authors' calculations.

opment index we have developed for countries in this region. There is a positive correlation in the values for the two indices across MENA countries, but Figure 2 also points out some important differences. For example, Lebanon appears more financially developed relative to the rest of the MENA countries according to the simpler alternative index. This reflects the much higher weight placed on the M2-to-GDP ratio in the alternative index, and the fact that Lebanon's value for this ratio is relatively high. This high value could be somewhat artificial, because Lebanon experienced large negative shocks to GDP (the denominator in this ratio) during its civil war years.

IV. Descriptive Analysis of the Data

Survey Analysis

Some basic descriptive analysis of the data set we compiled is suggestive of common strengths, trends, and weaknesses in financial sectors across MENA countries, and points to areas in greater need of 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 Gulf Cooperation Council (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 are summarized below by our six broad themes.[7]

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. However, in some cases, despite de jure liberalization of interest rates (or rates of return) and removal of credit ceilings, continuing public sector involvement in practice prevents complete market determination of rates and allocation of credit.

In nearly all cases, government securities (whether treasury bills or central bank paper) exist to some degree. In the majority of countries, some open market operations take place. However, in most countries, the incomplete development or nonexistence of secondary markets for government securities hinders the broader 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 the GCC countries, Jordan, and Lebanon, the banking sector is well developed, profitable, and efficient. However, in about half the region, this is not the case. In seven of the 20 countries, the banking sector is dominated by public sector banks, and in another eight, the government holds significant

[7]See Creane and others (2004, Appendix II) for the survey of the 20 MENA countries, available via the Internet at http://www.imf.org/external/pubs/ft/wp/2004/wp04201.pdf.

stakes in financial institutions. These countries are generally characterized by government intervention in credit allocation, losses and liquidity problems, and wide interest rate margins (or spreads in rates of returns). In many parts of the region, there is an urgent need for developing modern banking and financial skills. In seven of the countries, noncash transactions, such as credit card use or automated teller machine access, were limited or nonexistent.

The banking sector is highly concentrated in eight MENA countries. For example, assets of the three largest banks in these countries exceed 70 percent of total bank assets; the same holds true for loans and deposits. In another seven countries, there is moderate concentration with, for example, four banks accounting for more than 60 percent of total bank assets, loans, and deposits. In half the countries, the entry of new banks is difficult.

Generally, there is some correlation among the different attributes of the banking sector. For instance, countries with a highly concentrated banking sector, in addition, are generally also dominated by public sector banks and have limited noncash transactions.

Nonbank financial sector. In most of the region, the nonbank financial sector—consisting of 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. For instance, stock markets in the region tend to be characterized by high concentration, relatively few listings resulting in low levels of liquidity, and no separate regulatory authority. Moreover, state ownership of utilities and other enterprises in some countries deprives the market of an important source of new issues. The development of these markets is complicated by legal limitations on ownership, the need for a clear and stable legislative framework, weak investor confidence, and inactive or nonexistent secondary markets for financial instruments.

Housing finance institutions have been developed in most MENA countries, primarily through state-owned specialized housing banks. These institutions tend to subsidize credit to low- and middle-income households. However, these quasi-fiscal operations are often not reflected transparently in government budgets. Banks are involved in mortgage finance in countries where specialized mortgage institutions are not present.

Regulation and supervision. Many MENA countries—such as the GCC countries, Jordan, Lebanon, Morocco, and Tunisia—have strengthened banking supervision and regulation, established up-to-date procedures to collect prudential information, and regularly 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.

The independence of the regulatory and supervisory authority, usually the central bank, could be enhanced, and supervisors' skills could be improved. In six of the countries surveyed, the central bank is not considered to be independent, and an additional six have only limited independence. Moreover, the degree of transparency could be improved. About half of the monetary authorities in surveyed

countries had created websites to disseminate timely macroeconomic data and relevant financial sector laws and decrees, although coverage could be increased. Reflecting limited overall transparency, only half of the countries post country staff reports on the IMF website.

Financial openness. MENA countries have gradually opened up their current as well as capital accounts. However, nearly half the countries continue to maintain restrictions on repatriation of earnings as well as on the domestic purchase of foreign currency.

Most of the countries in the region maintain some form of a pegged exchange rate arrangement, with more than half of the countries surveyed pegging to the U.S. dollar. Half of the countries either have or can easily access a forward exchange market.

Three of the 20 countries continue to maintain parallel exchange markets and/or multiple currency rates. At the same time, these three countries, and two others, continue to maintain restrictions on current international transactions, and have not accepted the obligations of Article VIII (Sections 2, 3, and 4) of the IMF's Articles of Agreement.

Institutional environment. In much of the MENA region, the quality of institutions, including the judicial system, bureaucracy, and property rights, is poor. This hinders banking and commercial activity as well as investment, and hence growth.

In several countries, the judicial system is susceptible to political pressure and long delays, resulting in poor legal enforcement of contracts and loan recovery. Of the 20 countries surveyed, in only two was it considered easy to recover loans through the judicial system. The ICRG assigns a low rank to countries in the region for the quality of the bureaucracy, at a level significantly below that of more industrialized countries, including the fast-growing, newly industrialized Asian economies.

Property rights enforcement tends to be weak in the region. On the HF index of private property protection, only one country in the region (Bahrain) has a rating of very high protection, and two (the United Arab Emirates and Kuwait) have a rating of high protection. Similar to the results presented above, the HF notes significant government involvement in banking and finance in the region. Its index (which weighs government ownership, restrictions, influence over credit allocation, regulations, and freedom to offer services in the financial sector) rates only one country (Bahrain) as having very low government restrictiveness in the financial sector for 2002, and two (Jordan and Lebanon) as having low government restrictiveness.

Comprehensive Index Analysis of Financial Development

We 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; for example, the increase in Sudan's ranking reflected reforms carried out during that time across most of the six categories (Tables 3 and 4).

On average, countries at higher levels of financial development outperformed countries at lower levels in each of the six aspects of financial development. The countries scored relatively well on regulation and supervision and on financial openness, but fared poorly on the development of a strong institutional environment and the nonbank financial sector (Figure 1).[8]

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.

MENA and the Rest of the World: Alternative Index Analysis

The rankings of countries within the MENA region under both the comprehensive and the alternative indices closely track each other (Figure 2). 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.

According to the alternative index, we find that most MENA countries experienced financial development from the 1960s through the 1980s (Table 7 and Figure 3). 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 these four decades has improved only slightly or, in a couple of cases, declined.

V. Conclusions

MENA countries have reformed their financial sectors over the past three decades. Although 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, one of the challenges for MENA policymakers in moving

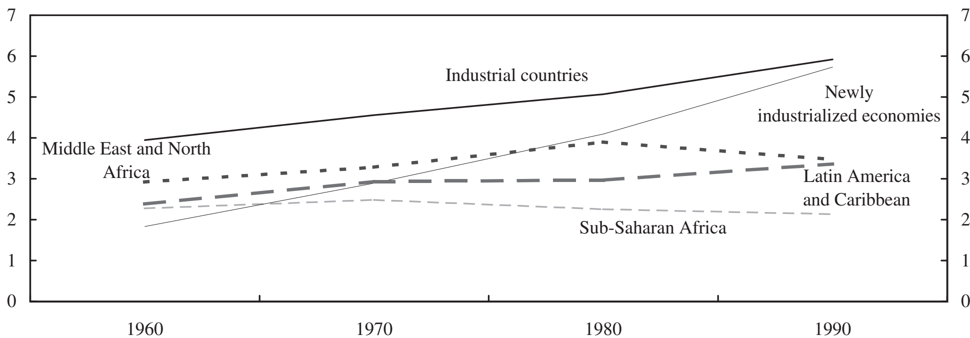
[8]Comparisons across the six subindices should be treated with some caution. The limited coverage of variables in each subindex implies that some potentially important variables may not be included, which could result in incorrect inferences.

Table 7. Alternative Financial Development Index, 1960s–90s
(Averages, scale: 0–10)

Countries and Regions	1960s	1970s	1980s	1990s
MENA	2.9	3.3	3.9	3.5
Algeria	2.4	4.2	5.0	2.7
Egypt	1.7	1.9	3.5	3.8
Iran, Islamic Republic of	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, Republic of	. . .	. . .	. . .	1.3
MENA (without Lebanon)	2.6	2.9	3.3	3.1
Industrial countries	3.9	4.6	5.1	5.9
"Asian tigers"	1.8	2.9	4.1	5.7
Latin American and Caribbean	2.4	2.9	3.0	3.4
South Asia	1.6	1.7	2.4	2.7
Sub-Saharan Africa	2.3	2.5	2.3	2.1

Sources: IMF, *International Financial Statistics;* and authors' calculations.

Figure 3. MENA Countries and Global Comparators: Alternative Financial Development Index, 1960s–1990s[1]



Sources: IMF, *International Financial Statistics;* and authors' calculations.
[1]Decade averages; scale 0–10.

away from financially repressive policies will be to create an 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, minimizing monetary financing of budget deficits, enhancing competition, investing in human resources, promoting nonbank financial development, and strengthening the legal environment.

This paper presents a methodology to create detailed indicators of financial development for developing and emerging economies that allows for nuanced policy-relevant analysis of the strengths and weaknesses of particular financial analysis and identification of specific areas where reform efforts should be prioritized. Although our specific application concentrated on financial development in the Middle East and North Africa, the methodology we outline can be easily applied to a broader cross section of countries and to longer periods of time. In fact, efforts are already under way by economists at the World Bank and the IMF to replicate our analysis to other regions of particular interest to them.

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