

# Developing Essential Financial Markets in Smaller Economies

## Stylized Facts and Policy Options

Hervé Ferhani, Mark Stone, Anna Nordstrom, and Seiichi Shimizu



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The following conventions are used in this publication:

- In tables, a blank cell indicates “not applicable,” ellipsis points ( . . . ) indicate “not available,” and 0 or 0.0 indicates “zero” or “negligible.” Minor discrepancies between sums of constituent figures and totals are due to rounding.
- An en dash (–) between years or months (for example, 2005–06 or January–June) indicates the years or months covered, including the beginning and ending years or months; a slash or virgule (/) between years or months (for example, 2005/06) indicates a fiscal or financial year, as does the abbreviation FY (for example, FY2006).
- “Billion” means a thousand million; “trillion” means a thousand billion.
- “Basis points” refer to hundredths of 1 percentage point (for example, 25 basis points are equivalent to ¼ of 1 percentage point).

As used in this publication, the term “country” does not in all cases refer to a territorial entity that is a state as understood by international law and practice. As used here, the term also covers some territorial entities that are not states but for which statistical data are maintained on a separate and independent basis.

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# Preface

The dictum that country policy advice must always be tailored to the circumstances at hand is nowhere more true than in the area of financial market development. The size and sophistication of financial markets vary enormously across International Monetary Fund (IMF) member countries. Correspondingly, the financial sector policy challenges faced by different countries are quite different, ranging from dealing with the systemic stability implications of complex financial products in a large advanced country, to assessing whether a money market is worth developing in a small developing country. Fiscal, monetary, and many structural policy challenges are of course also highly country-specific, but at the same time the broad objectives and challenges in these policy areas have much more in common across countries than do financial market development policies.

This paper is motivated by the relative lack of guidance for the development of key financial markets for one important group of countries: smaller economies. They face a qualitatively different set of policy challenges than do their medium-sized and large counterparts, but there has been much less policy work done for them. This paper is meant to inform regular financial market surveillance and technical assistance, and be helpful to central banks and government agencies. The contents of this paper are based on information through late 2007 and early 2008.

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The views expressed in this paper are those of its authors and do not necessarily reflect the views of the IMF, its Executive Directors, or national authorities.



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# Executive Summary

Financial markets in smaller economies are much less developed than in other countries. The underdevelopment of these markets impedes risk transfer, monetary policy, corporate financing, and the capacity to absorb capital inflows. Further, the gap between the development of financial markets in smaller economies and emerging market countries looks to be widening. This gap suggests that the social rate of return on financial market development in smaller economies could be high. However, there has been very little cross-country analysis, or even data collection, on this topic.

This paper aims to serve as a first step toward formulating policies to develop essential smaller economy financial markets by documenting the stylized facts and presenting a framework for assessing the policy issues. It is meant to inform regular financial market surveillance and technical assistance, and be helpful to central banks and government agencies. The paper draws on Financial Sector Assessment Program (FSAP) documents, technical assistance reports, IMF country reports, and central bank websites and documents in order to provide the appropriate cross-country data on smaller economy markets.

The experience of essential financial markets in 107 smaller economy countries is the basis of this paper. The essential markets are the foreign exchange market, which any country with its own currency will have; money and secondary government securities markets, because they are crucial for monetary policy and government financing; and stock exchanges, owing to their role in corporate financing and risk transfer. Regional market integration is also addressed, given its potential to overcome the diseconomies of scale that mark most smaller economies. The 107 countries were chosen based on size and level of development; inevitably, they cover a wide range of development, but can be deemed as facing at least some inherent impediments. Some of them have successfully developed their essential financial markets and thus offer positive policy lessons.

The main theme of this paper is that market development policies should be realistic and tailored to the unique circumstances of smaller economies. In the early stages of market development, governments must take the lead, but as markets develop the market players themselves should take over. Enhanced effectiveness

of monetary and fiscal policy is a clear motivation for market development policies.

## Stylized Facts

Smaller economy markets are generally smaller and provide a narrower range of services compared to those in other countries. The available information on money and foreign exchange market volume indicates that these markets are thin and narrow. Just 25 percent of smaller economies have secondary government securities markets developed enough to involve foreign institutions. Only 40 percent of smaller economies have a stock exchange, and trading in many of them is so low that their economic impact is minimal. At the same time, some of the larger smaller economies have fairly developed markets that provide a wide array of benefits. Regional integration, so far, has had mixed success in deepening markets in smaller economies.

Many of the obstacles to the development of essential financial markets in most smaller economies are intrinsic, but others can be addressed by policy measures. Intrinsic obstacles include small and uncompetitive banking sectors, highly concentrated economies, and the low number and small size of smaller economy companies. Structural obstacles that can be addressed by policy over the long run include structural excess liquidity, and dollarization. The limited number and competitiveness of smaller economy financial market players and weak financial information disclosure comprise institutional constraints that can be addressed in the medium term. Market development can also be impeded by policy rigidities under the direct control of the authorities and a lack of political will and vested interests.

## Policies for Market Development

The drivers of *foreign exchange market* development shift from the government to the central bank to the market players themselves as the market deepens. In the early stages, the government removes impediments such as foreign exchange surrender requirements and

tight capital controls. Reorienting the central bank from a market-limiting to a market-supporting role is the next step, which means scaling back direct central bank control of market flows, establishing a market-friendly trading mechanism, shifting the market-making function entirely to banks, and setting up market-based foreign exchange operations. The last phase is market-driven deepening with the authorities' role largely limited to prudential requirements in support of stability. Even in a fixed exchange rate regime, policies can facilitate price discovery within the trading band, and can facilitate the transition to a flexible exchange rate.

The drivers and policy strategies of *money and government securities market* development, which are considered jointly in this paper, follow a similar logic. Policies for the initial development market phase, which mainly involves interbank deposits, tend to focus on government measures to remove impediments and develop the banking system. Once regular trading of securities begins, the central bank, in close coordination with the government and banks and non-bank financial intermediaries, facilitates development by shifting to market-supporting monetary operations. Market players themselves take the lead for formal and sophisticated markets, with the central bank using market-based monetary operations and public agencies working together to ensure stability.

*Equity markets* are somewhat different from the other essential financial markets in that the market

players themselves play a bigger leading role and government policies cover a wider spectrum. Most smaller economies do not have an active stock exchange. For these countries, the primary issue is to establish alternative sources of corporate financing, such as angel and private financing. As markets develop through regular trading, policies should focus on institutions and basic corporate governance. Finally, deep and active secondary market development is led by the market players themselves, with different government agencies improving the provision of information and fostering market stability.

*Regional integration* has the potential to address some of the obstacles to market development by alleviating diseconomies of scale, but the experience so far has been limited. Regional integration is generally a complement rather than a substitute for local markets. Most cases of successful regional integration are market-led and involve equity markets. Government intervention can be effective when the interests of individual market players conflict with market integration. The preconditions for successful integration seem to be regional economic and political linkages, developed and integrated banking sectors, already existing local markets, and political support to overcome vested interests. Smaller economies may be better off joining an already existing regional market that has already realized the requisite scale economies, rather than trying to integrate small markets across countries.

# I Introduction

This paper assesses the development of essential financial markets in smaller economies and policies to improve them. Money, foreign exchange, government securities, and equity markets are considered here as essential because they provide the most basic level of financial services and, along with banks, serve as the foundation for the development of other financial markets.<sup>1</sup>

Smaller economies are defined as countries with GDP and per capita GDP below thresholds that can be seen as marking limits on the potential development of their financial markets.<sup>2</sup> The approach to country coverage is to look at GDP (size) and GDP per capita (level of development), choose cutoff points based on available indicators of market development, and categorize the countries below these cutoff points as smaller economies. Descriptive data suggest that both size and level of development are correlated with financial market development (Table 1.1). A review of basic information on financial markets suggests that most countries below the thresholds of \$40 billion for GDP and \$10,000 for GDP per capita have relatively undeveloped financial markets, and in many cases, are lacking markets altogether. Most of the developing countries above these thresholds have developed stock, money market, and foreign exchange markets and almost all issue international bonds. There are some countries, especially the larger ones, that have achieved success in developing essential financial markets. The 107 smaller economies account for 2 percent of world GDP, while their total population is 960 million, or 15 percent of the world total. The concept of smaller economies also covers regional groupings of countries with relatively small economies.

<sup>1</sup>Other markets—such as corporate bonds and commercial paper—are not the subject of this paper because they have a minimal role in most smaller economies or do not exist at all. There is already a large literature on bank financial intermediation and small-scale access (for bank reform, see Calvo, 2004, and Demirgüç-Kunt and Levine, 2002; and for access, see Claessens, 2006).

<sup>2</sup>Of the 185 IMF member countries plus Taiwan Province of China and Hong Kong SAR, clearly the 29 advanced countries should not be counted as smaller economies, leaving 157 countries. Seven of the smallest countries were dropped owing to a lack of the most basic data (Antigua and Barbuda, Liberia, Marshall Islands, Federated States of Micronesia, Palau, San Marino, and Somalia).

The smaller economies encompass a wide range of countries (Table 1.2). About 12 smaller economies (Bolivia, Bulgaria, Croatia, the Baltics, Jamaica, Jordan, Lebanon, Syrian Arab Republic, Trinidad and Tobago, and Tunisia) have some developed markets and have either joined the ranks of emerging market countries or have the potential to do so. At the other end of the spectrum, 36 smaller economies have a population of less than one million, indicating that the economies of scale will be difficult to attain.

The potential benefits provided by active and effective essential financial markets in smaller economies are considerable. Effective markets allow monetary operations to become more market-based, and government financing can benefit from cheaper and more stable financing. They enhance portfolio diversification and facilitate risk transfer—which is especially important for smaller economies because they are highly vulnerable to shocks. Companies, which face serious financing constraints in smaller economies, enjoy a wider choice of financing instruments and the economy benefits from improved corporate governance. These markets also serve as the foundation for more sophisticated financial products. They mobilize long-term savings into productive investment opportunities more efficiently, including by providing alternatives to the bank financing that dominates in smaller economies. Further development of smaller economy financial markets could bring them above the threshold, which brings benefits from financial globalization.<sup>3</sup> Finally, policymakers benefit greatly from the relatively impartial information provided by financial market prices.

However, the small size of markets in most smaller economies shows that they are not enjoying these benefits relative to emerging market countries. The available data, which are reported in detail in the annexes, show that these markets are smaller and less liquid in smaller economies than in emerging market countries and advanced countries.

<sup>3</sup>Critical thresholds for financial globalization are presented by Kose and others (2006), and evidence for the low level of integration of smaller economy markets with world financial markets is reported in Chapter II. See also Hanson, Honohan, and Majnoni (2003).

**Table I.1. GDP, GDP Per Capita, and Financial Market Development in Developing and Emerging Market Countries***(In U.S. dollars)*

|                           | Stock Market                         |                                     | Forward Foreign Exchange Market      |                                     | Money/GDP>50 percent                 |                                     |
|---------------------------|--------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
|                           | GDP<br>(Billions of<br>U.S. dollars) | GDP<br>per capita<br>(U.S. dollars) | GDP<br>(Billions of<br>U.S. dollars) | GDP<br>per capita<br>(U.S. dollars) | GDP<br>(Billions of<br>U.S. dollars) | GDP<br>per capita<br>(U.S. dollars) |
| Countries with markets    | 25.4                                 | 2,428                               | 13.6                                 | 2,043                               | 8.3                                  | 3,791                               |
| Countries without markets | 3.9                                  | 914                                 | 4.7                                  | 1,169                               | 7.4                                  | 860                                 |

Sources: World Bank; IMF, Annual Report on Exchange Arrangements and Exchange Restrictions database; IMF, International Financial Statistics database.  
Note: Based on 156 developing and emerging market countries.

Market underdevelopment can be attributed to inherent and controllable factors (see Chapter II). To some degree, market underdevelopment reflects intrinsic obstacles, such as the small size of smaller economy financial systems, and the small size and high degree of concentration of the economies of many smaller economies. But there are also structural (excess liquidity and high dollarization) and institutional (limited number and competitiveness of smaller economy market players and a dearth of reliable company financial information) obstacles that can be addressed in the long run. Market development can also be impeded by policy rigidities that are under the direct control of the authorities.

This paper aims to help formulate policies to address the controllable impediments to market development. The limited benefits provided by these markets in many smaller economies mean that there could be a high pay-off to policies that develop them. Positive lessons can be drawn from the experience of smaller economies. Because very little hard cross-country data on essential financial markets are available for smaller economies, this paper draws on FSAP reports and technical notes, central bank websites and reports, and work done in the IMF and elsewhere.

The paper is meant to inform regular financial market surveillance and technical assistance, and be helpful to central banks and government agencies. Currently, there is relatively little guidance based on cross-country experience for country-specific policy work. However, a number of new country initiatives have begun, including Making Finance Work for Africa initiated by the G-8 and World Bank, and the Action Plan for Developing Local Bond Markets in Emerging Market Economies and Developing Countries of the G-8, World Bank, and IMF. This paper aims to support and complement these efforts.

The overarching theme of this paper is that market development policies for smaller economies should be realistic and tailored to their often unique circumstances. The policy strategy should begin with ensuring that an active market is viable and worth the development costs to the public sector. In the early stages of market development, public agencies take the lead in coordination with the market players. As markets mature, market players should take over, with governments focusing on removing obstacles and overseeing stability issues. Enhanced effectiveness of monetary and fiscal policy is a clear motivation for market development policies.

The contribution of this paper is in its coverage and integrated and policy-oriented approach to the development of essential financial markets in smaller economies. Bossone, Honohan, and Long (2001) address financial system development in small countries but focus mainly on banks. Similarly, Gulde and others (2006) and Honohan and Beck (2007) focus on financial sector development in Africa, but, again, they are primarily concerned with banks. Demirgüç-Kunt and Levine (2002) report extensive data on and analyze banking sector and stock market development in developing countries, but they do not cover money, foreign exchange, and secondary government securities markets. Gray and Talbot (2006) discuss development of these markets but their work is not targeted at smaller economies. A number of papers, referenced in the following chapters, have addressed development of one of these markets, although the focus is usually on emerging markets. Previous work on regional market integration in smaller economies has been concerned with particular regions as opposed to the international experience.<sup>4</sup> Thus, this paper appears to be the first to

<sup>4</sup>West African Economic and Monetary Union and Central African Economic and Monetary Community integration is addressed

**Table I.2. Smaller Economy Countries**

|                        |                 |                                   |
|------------------------|-----------------|-----------------------------------|
| Afghanistan, I.R. of   | Gabon           | Niger                             |
| Albania                | Gambia, The     | Panama                            |
| Angola                 | Georgia         | Papua New Guinea                  |
| Armenia                | Ghana           | Paraguay                          |
| Azerbaijan, Rep. of    | Grenada         | Rwanda                            |
| Belarus                | Guatemala       | Samoa                             |
| Belize                 | Guinea          | São Tomé and Príncipe             |
| Benin                  | Guinea-Bissau   | Senegal                           |
| Bhutan                 | Guyana          | Serbia & Montenegro               |
| Bolivia                | Haiti           | Seychelles                        |
| Bosnia and Herzegovina | Honduras        | Sierra Leone                      |
| Botswana               | Jamaica         | Solomon Islands                   |
| Bulgaria               | Jordan          | Sri Lanka                         |
| Burkina Faso           | Kenya           | St. Kitts and Nevis               |
| Burundi                | Kiribati        | St. Lucia                         |
| Cambodia               | Kyrgyz Republic | St. Vincent and the<br>Grenadines |
| Cameroon               | Lao PDR         | Sudan                             |
| Cape Verde             | Latvia          | Suriname                          |
| Central African Rep.   | Lebanon         | Swaziland                         |
| Chad                   | Lesotho         | Syrian Arab Republic              |
| Comoros                | Libya           | Tajikistan                        |
| Congo, Dem. Rep. of    | Lithuania       | Tanzania                          |
| Congo, Republic of     | Macedonia, FYR  | Timor-Leste                       |
| Costa Rica             | Madagascar      | Togo                              |
| Côte d'Ivoire          | Malawi          | Tonga                             |
| Croatia                | Maldives        | Trinidad and Tobago               |
| Djibouti               | Mali            | Tunisia                           |
| Dominica               | Mauritania      | Turkmenistan                      |
| Dominican Republic     | Mauritius       | Uganda                            |
| Ecuador                | Moldova         | Uruguay                           |
| El Salvador            | Mongolia        | Uzbekistan                        |
| Equatorial Guinea      | Mozambique      | Vanuatu                           |
| Eritrea                | Myanmar         | Yemen, Republic of                |
| Estonia                | Namibia         | Zambia                            |
| Ethiopia               | Nepal           | Zimbabwe                          |
| Fiji                   | Nicaragua       |                                   |

take an integrated approach to the development of the four essential financial markets in smaller economies.

in Gulde and others (2006); the Common Monetary Area is discussed in Wang and others (2007); Maghreb countries are covered in IMF (2007a); and Shah and others (2007) assesses integration in Central America.

The next chapter of this paper lays the background by documenting the impediments to financial market development in smaller economies. Then, the chapters broadly follow the logical progression of market development. The foreign exchange market is the most fundamental market and is thus considered in Chapter III. Chapter IV covers money and government securities

markets together, in light of their development synergies. Equity markets are considered next because they often follow the development of the others. Regional integration, which often involves multiple markets, is addressed last. Annexes, by documenting the available information on essential smaller economy financial

markets, are key to the paper. The stylized facts, based on the available cross-country data and information sources and case studies, are presented in Annexes I to IV, which cover foreign exchange, money and government securities, equity markets, and regional integration, respectively.

## II Impediments to Financial Market Development in Smaller Economies

This chapter assesses the available evidence on obstacles to financial market development that are common to smaller economies.<sup>5</sup> The choice of these obstacles is based on the case studies, the analysis of this paper, and the experience of IMF staff. The importance of them for smaller economies is gleaned by comparing available indicators for smaller economies with those for emerging market and advanced countries.

### Intrinsic Obstacles

Intrinsic obstacles are largely beyond the control of policymakers, but have a material bearing on potential market development. Thus, they must be recognized and factored into policy decision making.

### Number and Competitiveness of Market Players

A reasonable number of potential market players is a necessary condition for a functional financial market. Markets require enough buyers and sellers to form both sides of market transactions on a regular basis. Further, the greater the number of players, the less the need for a market maker to maintain expensive inventories. Banks and nonbank financial intermediaries (NBFIs) will dominate foreign exchange, money, and government securities markets, while companies comprise the issuer side of the equity market.

### Banks

Banks can be expected to play a crucial role in the financial market development of smaller economies.<sup>6</sup> Banks are the linchpin of all but the most advanced financial systems because they transmit payments, dominate the money market and usually foreign exchange markets, play an important role in the government securities market, and foster financial stabil-

ity. In addition, banks sometimes establish subsidiaries (mutual funds, pension schemes, leasing, brokers) to exploit financial market development.

The banking systems of smaller economies have fewer players and less competition (Table 2.1). The median number of banks for smaller economies is six, or less than half that of emerging market countries. The three largest banks account on average for about three-fourths of total bank assets in smaller economies for which data are available. This is higher than for emerging market countries, and suggests that competition is likely to be weaker. Interestingly, the share of state banks is smaller and the share of foreign banks higher in smaller economies vis-à-vis emerging market countries, which would seem to support financial market development (La Porta, López-de-Silanes, and Shleifer, 2002; and Mishkin, 2006).

Many smaller economies have just the minimum number of banks, or less, that can be regarded as sufficient for an effective money market. According to IMF (2005a), the minimum for efficient money markets is four or five banks—as long as none dominates the market. About 20 smaller economies have only four or five banks, which barely qualifies them as having the potential for an efficient money market (Figure 2.1). A finer breakdown of the number of banks for smaller economies shows that 34 of them have fewer than four banks, suggesting that market efficiency for them is a major challenge.

### Insurance Companies

Insurance companies are also key financial market players. Insurance companies typically hold a large amount of government securities and often play a large role in primary and secondary equity markets. Larger insurance companies can be expected to use the money and foreign exchange markets to manage liquidity.

Insurance companies in smaller economies are fewer in number and the sector is smaller in size compared with emerging market countries (Table 2.2). Insurance industry data are available for only about one-third of smaller economies and two-thirds of emerging market countries. Thus, the aggregate figures are probably underestimated for these two groups—and especially

<sup>5</sup>Honohan and Beck (2007) discuss the impediments to financial sector development in Africa.

<sup>6</sup>Chinn and Ito (2005) find that banking sector development is a precondition for equity market development.



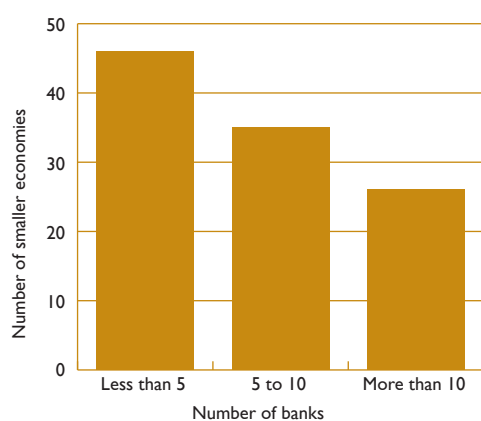
**Table 2.1. Banking Sector Structure**

|                                  | Number of Banks (2002) | Share of Total Assets |                     |                      | Bank Branches Per Capita (2004) |
|----------------------------------|------------------------|-----------------------|---------------------|----------------------|---------------------------------|
|                                  |                        | Three largest (2002)  | Public banks (2002) | Foreign banks (2002) |                                 |
| <b>Smaller economies</b>         |                        |                       |                     |                      |                                 |
| Average                          | 9                      | 0.74                  | 0.16                | 0.36                 | 5.5                             |
| Median                           | 6                      | 0.80                  | 0.08                | 0.33                 | 3.8                             |
| Standard deviation               | 9                      | 0.74                  | 0.16                | 0.36                 | 5.0                             |
| Number of countries <sup>1</sup> | 107                    | 66                    | 66                  | 66                   | 38                              |
| <b>Emerging market countries</b> |                        |                       |                     |                      |                                 |
| Average                          | 25                     | 0.61                  | 0.24                | 0.28                 | 8.9                             |
| Median                           | 20                     | 0.58                  | 0.18                | 0.18                 | 8.2                             |
| Standard deviation               | 25                     | 0.61                  | 0.24                | 0.28                 | 6.3                             |
| Number of countries              | 42                     | 42                    | 42                  | 42                   | 36                              |
| <b>Advanced countries</b>        |                        |                       |                     |                      |                                 |
| Average                          | 169                    | 0.58                  | 0.07                | 0.25                 | 34.5                            |
| Median                           | 45                     | 0.62                  | 0.02                | 0.16                 | 30.8                            |
| Standard deviation               | 292                    | 0.22                  | 0.12                | 0.27                 | 19.4                            |
| Number of countries              | 28                     | 8                     | 8                   | 28                   | 24                              |

Note: For number of banks, data are available for 66 smaller economies; estimates for the others are obtained by regressing the number of banks in the 66 smaller economies (both in logs) and using the regression parameters to estimate the number of banks in the remaining countries.

so for the smaller economies. The available data indicate that the median size of smaller economy insurance sectors is half that of emerging market countries. In addition, there are significantly fewer insurance com-

panies in smaller economies than in the other countries, indicating a higher degree of concentration and thus a less competitive industry.

**Figure 2.1. Smaller Economies: Number of Banks**


Sources: Micco, Panizza, and Yáñez (2004) for 66 smaller economies; data for the others are estimates based on GDP.

### Pension Funds

The available data suggest that pension funds are much smaller in smaller economies compared to emerging market countries (Table 2.3). This puts smaller economies at a disadvantage, because pension funds have made an important contribution to local bond market development in many emerging market countries, particularly in Latin America and Central Europe (IMF and World Bank, 2003). The small size of pension funds limits capital market development in Central America.

### Diseconomies of Scale for Infrastructure and Regulation

The financial systems of many smaller economies may be too small to make it worthwhile to pay the fixed costs of infrastructure and regulation.<sup>7</sup> The essential

<sup>7</sup>One estimate of the minimum level of outstanding government debt for a very liquid (in terms of tightness, depth, immediacy, and resilience) government bond market is provided by McCauley and Remolona (2000), who propose a minimum threshold of \$100 billion, which is far larger than any of the smaller economies' government domestic debt.

**Table 2.2. Selected Countries:  
Size of Insurance Sector**

|                                       | Total Assets, 2003             |                 | Number of<br>Companies |
|---------------------------------------|--------------------------------|-----------------|------------------------|
|                                       | In billions of<br>U.S. dollars | Ratio to<br>GDP |                        |
| <b>Smaller economies (37)</b>         |                                |                 |                        |
| Total                                 | 10.3                           | 100.2           | 219                    |
| Median                                | 0.1                            | 1.3             | 3                      |
| Average                               | 0.3                            | 2.7             | 6                      |
| <b>Emerging market countries (33)</b> |                                |                 |                        |
| Total                                 | 363.6                          | 496.0           | 1,195                  |
| Median                                | 1.8                            | 2.6             | 14                     |
| Average                               | 11.0                           | 15.0            | 36                     |
| <b>Advanced countries (28)</b>        |                                |                 |                        |
| Total                                 | 30,529                         | 3,002.7         | 5,918                  |
| Median                                | 160                            | 64.0            | 67                     |
| Average                               | 1,090                          | 107.2           | 211                    |

Source: Insurance Information and Statistics database.

Note: Number of countries in parentheses.

financial markets all use high fixed cost/low marginal computer-based technological real-time gross settlement systems (RTGS), central securities depositories (CSDs), electronic trading platforms, and other components of infrastructure systems.<sup>8</sup> The combined market players in smaller economies are often too small to afford these systems. For example, RTGS payment systems often incur an up-front fixed cost of \$1 million, which is quite a large sum in comparison to payment system volume in small countries.

Broad money comparisons make the point that the financial system of smaller economies is much smaller than that of emerging market countries. Broad money is the only widely available measure of the size of a financial system.<sup>9</sup> The median of the smallest quartile of smaller economies' broad money is only \$253 million, while the next quartile is \$756 million (Table 2.4). This suggests that smaller economies are much more likely to fall below the threshold that would make it worthwhile to pay the fixed costs of infrastructure and regulation.

<sup>8</sup>Bossone and Lee (2004), based on a sample of 875 banks in 75 countries, found that intermediaries operating in systems with large markets and infrastructures have lower production costs and lower costs of risk absorption and reputation signaling than banks operating in small systems. Malkamäki (1999) find evidence for economies of scale for relatively small stock exchanges. Schmiechel, Malkamäki, and Tarkka (2002) find significant economies of scale in depository and settlement systems especially for smaller systems.

<sup>9</sup>Because banking systems are more important for smaller countries, the use of broad money will *overestimate* the relative size of smaller economy financial systems.

**Table 2.3. Pension Fund Assets  
(Share of GDP)**

|                                  |      |
|----------------------------------|------|
| <b>Smaller economies</b>         |      |
| Bolivia (2003)                   | 20.9 |
| Botswana (2004)                  | 16.1 |
| Bulgaria (2003)                  | 2.3  |
| Costa Rica (2003)                | 1.8  |
| El Salvador (2003)               | 11   |
| Estonia (2001)                   | 2    |
| Ethiopia (2004)                  | 1.4  |
| Fiji (2003)                      | 69.3 |
| Gabon (2004)                     | 1.1  |
| Ghana (2004)                     | 8.1  |
| Kenya (2004)                     | 13.2 |
| Panama (2003)                    | 3.6  |
| Rwanda (2004)                    | 7.1  |
| Seychelles (2004)                | 8.3  |
| Sri Lanka (2001)                 | 14.6 |
| Tanzania (2004)                  | 4    |
| Uganda (2004)                    | 2.5  |
| Uruguay (2003)                   | 11.4 |
| Zambia (2004)                    | 7    |
| Zimbabwe (2004)                  | 2.3  |
| Median                           | 7.1  |
| Average                          | 10.4 |
| <b>Emerging market countries</b> |      |
| Chile (2003)                     | 64.5 |
| Peru (2003)                      | 10.6 |
| Slovak Republic (2003)           | 9.4  |

Sources: OECD (2005); and Chan-Lau (2004).

### Concentration of the Economy

The concentration of the economies of smaller economy countries limits opportunities for diversification. Agriculture accounts on average for about one-fifth of smaller economy country GDP, which is about twice the ratio of emerging market countries (Table 2.5). The high degree of production concentration limits the opportunities for diversification within a country, thus constraining the exchange of risks needed for domestic market development. Further, concentration can undermine macroeconomic instability, which induces reallocation of resources away from risky projects that warrant financing and can raise inflation. Boyd, Levine, and Smith (1997) find that economies with average rates of inflation exceeding certain thresholds have significantly less well developed financial systems.

Strong domestic and external seasonalities can induce all banks to be on one side or the other of financial markets. This is the case in The Gambia and Zambia.

### Limited Number and Small Size of Companies

Companies in smaller economies tend to be few in number and small. In most smaller economies, the cor-

**Table 2.4. Smaller Economies and Emerging Market Countries: Broad Money**

(In millions of U.S. dollars)

|                                |         |
|--------------------------------|---------|
| Smaller economies (107)        |         |
| First quartile median          | 253     |
| Second quartile median         | 756     |
| Third quartile median          | 2,204   |
| Fourth quartile median         | 8,237   |
| Emerging market countries (42) |         |
| First quartile median          | 9,341   |
| Second quartile median         | 38,254  |
| Third quartile median          | 82,354  |
| Fourth quartile median         | 246,323 |

Source: IMF, *World Economic Outlook*.

Note: Number of countries in parentheses.

**Table 2.5. Selected Countries: Agriculture Share of GDP, 2004**

(In percent of GDP)

|                                |      |
|--------------------------------|------|
| Smaller economies (82)         |      |
| Median                         | 21.0 |
| Average                        | 23.3 |
| Emerging market countries (38) |      |
| Median                         | 10.0 |
| Average                        | 9.5  |
| Advanced countries (21)        |      |
| Median                         | 2.0  |
| Average                        | 2.4  |

Source: World Bank.

Note: Number of countries in parentheses.

porate sector is composed of a relatively limited number of small and medium-sized enterprises (SMEs).<sup>10</sup> In addition, in some of these countries some sectors of the economy are still in government hands, thus limiting the size and potential of the corporate sector. The potential for equity market development will be constrained in the face of a limited number and size of potential equity market issuers.

In particular, the regulatory and infrastructure costs of equity issuance for individual smaller economy companies may outweigh the benefits, owing to the companies' small size. The regulatory framework for equity markets usually includes a disclosure regime and a framework for corporate governance. Compliance with disclosure obligations usually requires the development of specific information technology (IT) capabilities, and more rigorous procedures and controls to ensure the reliability of financial information, including external auditing. In many jurisdictions, issuers are also required to have personnel specifically assigned to regulatory compliance and investor relations, all of which entails additional costs. For smaller economies the regulatory framework could be very costly vis-à-vis market potential, thus preventing the entrance of participants—both issuers and intermediaries.

In many smaller economies, companies are still family-owned, which complicates their compliance with a corporate governance framework and limits the floating of shares.<sup>11</sup> In Central America, most of the firms

<sup>10</sup>For example, in Zambia the 13 companies listed on the Lusaka Stock Exchange as of early 2006 may not be sufficient to allow the market to develop, notwithstanding the recent favorable macroeconomic performance.

<sup>11</sup>Stulz (2005) argues that agency problems posed by cooperating sovereign states and corporate insiders with respect to outside investors limits financial development.

that could reach a critical size where equity issuance would be a possibility belong to family groups that have a strong aversion to minority shareholders of any size. Even if family-owned firms list, they will float only a small portion of their shares.

### Structural Obstacles

Structural obstacles can be addressed by policy but only over a long period of time. They are often long-standing and rooted in macroeconomic and financial policies. However, they can be addressed, albeit over the long run.

### Structural Excess Liquidity in the Banking Sector

In many smaller economies, structural excess liquidity inhibits money market development by removing incentives to borrow in the short term. Structural excess liquidity can be defined as a long-lasting surplus of bank cash over and above the amount required to be held as reserves or for payment purposes. Structural excess liquidity data are generally not reported and analysis of this issue for smaller economies is quite limited. However, IMF (2005a) and Saxegaard (2006) suggest that structural liquidity surpluses are pervasive across smaller economies. Structural excess liquidity undermines money market development by putting all banks on the supply side of the market.

For most smaller economies, structural excess liquidity is rooted in a mismatch between bank liquidity and the credit absorption capacity of the domestic economy. Most studies of structural excess liquidity are concerned with whether and how emerging market countries should sterilize excess liquidity arising from capital inflows (Khan and Reinhart, 1995). Smaller

**Table 2.6. Selected Countries: Foreign Currency Deposits to Total Deposits, 2001**  
(In percent)

|                                |      |
|--------------------------------|------|
| Smaller economies (47)         |      |
| Median                         | 43.9 |
| Average                        | 43.9 |
| Emerging market countries (30) |      |
| Median                         | 20.3 |
| Average                        | 26.6 |
| Advanced countries (13)        |      |
| Median                         | 3.5  |
| Average                        | 6.4  |

Source: De Nicoló, Honohan, and Ize (2003).

Note: Number of countries in parentheses.

economies, in contrast, have relatively closed capital accounts and low credit, and thus for them structural excess liquidity has more to do with low credit absorption capacity.

### Dollarization

The relatively high level of dollarization in smaller economies impedes money and foreign exchange market development. Smaller economies have a qualitatively

higher incidence of dollarization, as measured by the share of foreign currency deposits in total deposits, compared to other countries (Table 2.6). Dollarization undermines local money and foreign exchange markets by reducing the share of liquidity denominated in local currency.

### Capital Account Openness<sup>12</sup>

An open capital account is generally seen as conducive to financial market development. Mishkin (2006) argues that the presence of foreign financial institutions leads to improvements in the quality of domestic prudential supervision and could be instrumental in the reform of domestic regulatory institutions. A more closed capital account impedes the capital, expertise, and technology that foreigners can contribute to local market development. At the same time, limited market development gives foreigners less reason to invest in local markets and can raise financial vulnerabilities, thus leading to tighter restrictions.

Portfolio equity inflows play a smaller role in smaller economies relative to emerging and advanced countries. The median stock of smaller economy portfolio equity inflows is only 0.1 percent of GDP, which is an order of magnitude lower as a share of GDP than the inflows of emerging market countries and just a fraction of what advanced countries receive (Table 2.7).

<sup>12</sup>IMF (2008) assesses capital flows and financial market development in Africa.

**Table 2.7. International Investment Position Data, IMF Member Countries, 2003**  
(Share of GDP)

|  | Portfolio equity | Foreign direct investment | Liabilities                         |                       |        | Total Assets | Net External Position |
|--|------------------|---------------------------|-------------------------------------|-----------------------|--------|--------------|-----------------------|
|  |                  |                           | Portfolio and other investment debt | Financial derivatives | Total  |              |                       |
| Small and medium developing countries (75) |                  |                           |                                     |                       |        |              |                       |
| Average                                    | 1.3              | 35.1                      | 69.4                                | 0.0                   | 105.7  | 44.7         | -61.0                 |
| Median                                     | 0.1              | 27.4                      | 66.1                                | 0.0                   | 99.3   | 34.7         | -58.5                 |
| Standard deviation                         | 3.2              | 29.4                      | 39.0                                | 0.2                   | 47.6   | 37.7         | 61.2                  |
| Emerging market countries (40)             |                  |                           |                                     |                       |        |              |                       |
| Average                                    | 4.7              | 32.4                      | 67.9                                | 0.1                   | 105.2  | 115.4        | 10.2                  |
| Median                                     | 3.1              | 26.2                      | 42.4                                | 0.0                   | 77.8   | 46.2         | -30.9                 |
| Standard deviation                         | 5.3              | 28.4                      | 132.4                               | 0.4                   | 143.5  | 200.3        | 126.6                 |
| Advanced countries (28)                    |                  |                           |                                     |                       |        |              |                       |
| Average                                    | 188.5            | 155.0                     | 236.3                               | 5.2                   | 585.0  | 592.7        | 7.7                   |
| Median                                     | 21.4             | 39.2                      | 117.2                               | 0.1                   | 192.7  | 176.7        | -14.2                 |
| Standard deviation                         | 792.6            | 533.6                     | 507.9                               | 10.8                  | 1839.3 | 1863.9       | 77.9                  |

Source: Lane and Milesi-Ferretti (2006).

Note: Number of countries in parentheses.

Interestingly, foreign direct investment inflows are comparable between smaller economies and emerging market countries, possibly because direct ownership circumvents many of the legal and institutional shortfalls of smaller economies. Portfolio and other investment debt data are higher for smaller economies, but these figures include official flows and thus are not driven by market forces.

Smaller economies also appear to have tighter de jure capital account restrictions. The capital account restriction measure of Chinn and Ito (2005), which is available for a broad set of countries, indicates that smaller economies have more restrictive policies (Table 2.8).<sup>13</sup>

Perhaps surprisingly, smaller economies do not on average have more extensive capital controls than emerging market countries do. Indeed, fewer smaller economies have controls on most types of capital transactions compared with emerging market countries (Figure 2.2), and controls on invisible transactions are comparable between the two country groups. Thus, relatively strict capital controls would not appear to explain the relative thinness of smaller economy foreign exchange markets. Indeed, it may be the case that capital inflows are low for smaller economies for fundamental reasons—including underdeveloped financial markets—and thus capital controls have a weak relationship with foreign exchange market development.

### Institutional Obstacles

Institutional obstacles are those that can be dealt with by policy reforms in the short and medium run.

### Lack of Proper Information Disclosure

Access to reliable financial information is crucial generally for financial markets and especially for securities markets. Credible financial information relies on the existence of high-quality accounting standards, a skilled and trained accounting profession, and adequate accounting procedures and controls at the level of the companies. In addition, as part of the checks and controls, there is a need for high-quality auditing standards and a reasonable number of skilled independent auditors.

However, many smaller economies lack reliable company financial information. The World Bank's business disclosure index indicates that smaller econo-

<sup>13</sup>This index takes on higher values the more open the country is to cross-border capital transactions. It is based on four binary dummy variables (covering the presence of multiple exchange rates, restrictions on current account transactions, restrictions on capital account transactions, and the requirement of the surrender of export proceeds) reported in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER).

**Table 2.8. Selected Countries: Capital Account Openness**

(Index increases in openness)

|                                |       |
|--------------------------------|-------|
| Smaller economies (101)        |       |
| Median                         | -1.09 |
| Average                        | 0.02  |
| Emerging market countries (42) |       |
| Median                         | 0.05  |
| Average                        | 0.19  |
| Advanced countries (27)        |       |
| Median                         | 2.62  |
| Average                        | 2.29  |

Source: Chinn and Ito (2005).

Note: Number of countries in parentheses.

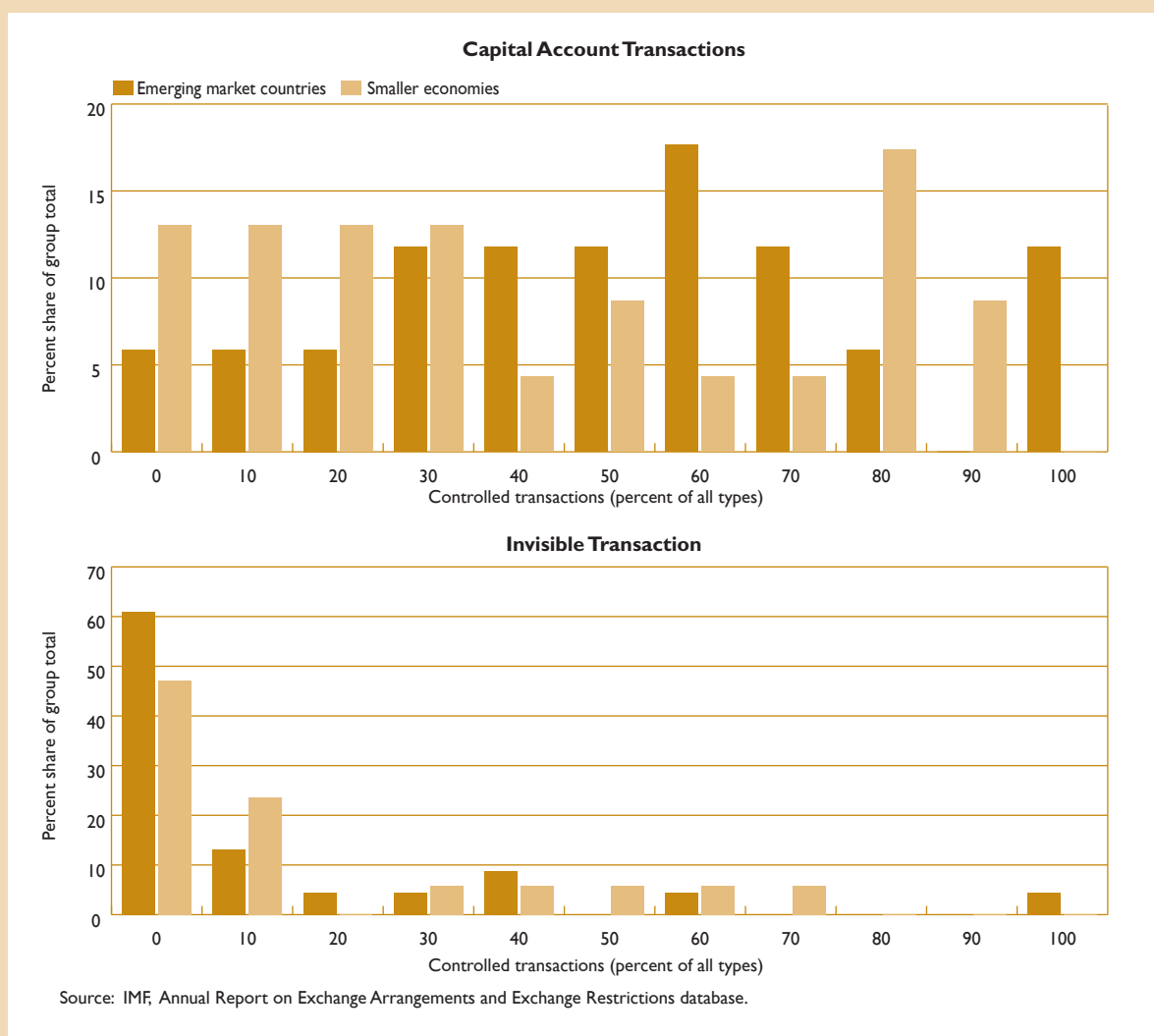
mies have poorer disclosure practices (Table 2.9). In many cases the problem relates to the size of the companies, as well as the fact that they are family-run, which has prevented them from developing adequate accounting policies and procedures. In addition, small countries may lack sufficient accounting and auditing professionals. In particular in the case of auditing, this problem might affect the ability of the regulator to enforce independence requirements. In addition, in many emerging and developing countries taxation might deter companies from full financial transparency. Also, in many emerging and developing markets, accounting and auditing standards are not of high quality, yet the implementation of high-quality standards, such as the International Financial Reporting Standards (IFRS), would pose challenges for companies in smaller economies, for which the burden of compliance might be significant. The International Accounting Standards Board is in the process of developing IFRS for SMEs, which would at least solve this part of the problem.

### A Contract-Enforcing Legal Framework and Infrastructure

Financial market development rests on the existence of a sound and well-applied body of contract law. Parties to a financial market transaction assume certain obligations and responsibilities that are specified in a contract. The participants' willingness to transact requires that the contract is clear, and that breaches of the contract are dealt with transparently, impartially, and on a timely basis. This requires not just supporting laws and by-laws, but also judges with the appropriate technical expertise. Transactions involving a credit to or participation in a corporation require a well-developed framework for corporate law.

**Figure 2.2. Emerging Market Countries and Smaller Economies with Floating Arrangements: Controlled Transactions**

(Percent of identified types of transactions subject to controls)



Interestingly, smaller economies do not seem to have a markedly less effective legal framework compared with emerging market countries (Tables 2.9 and 2.10). World Bank surveys indicate that the median of quantitative indicators for the legal framework of smaller economies and emerging market countries are quite close in most areas, with faster insolvency resolution in smaller economies. Not surprisingly, the advanced countries score much better than the others. These comparisons suggest that, below the advanced country level, the size and level of development matter little for the

effectiveness of the legal framework in support of financial contracts.

### Policy Rigidities

Distortionary tax policies in many smaller economies limit financial market development. Although transaction taxes and tax withholding reduce the demand for securities and may negatively affect financial market development, in many smaller economies

**Table 2.9. Business Environment Indicators, 2005**

|                                | Business Disclosure Index <sup>1</sup> | Rigidity of Employment Index <sup>2</sup> | Cost of Business Start-up Procedures (In percent of GNI per capita) | Time Required to Start a Business (Days) | Start-up Procedures to Register a Business (Number) |
|--------------------------------|--|---|---|--|---|
| Smaller economies (41)         |  |   |   |  |   |
| Median                         | 5.0                                    | 39.0                                      | 23.8  | 39.0                                     | 10.0  |
| Average                        | 5.0                                    | 38.0                                      | 81.1  | 43.4                                     | 10.0  |
| Emerging market countries (34) |  |   |   |  |   |
| Median                         | 7.0                                    | 45.0                                      | 15.6  | 38.0                                     | 9.0   |
| Average                        | 5.9                                    | 41.7                                      | 27.3  | 48.5                                     | 10.0  |
| Advanced countries (26)        |  |   |   |  |   |
| Median                         | 7.0                                    | 33.0                                      | 4.0   | 15.0                                     | 5.5   |
| Average                        | 6.5                                    | 33.2                                      | 6.4   | 19.2                                     | 6.3   |

Source: World Bank

Note: Number of countries in parentheses.

<sup>1</sup>0 = less disclosure to 10 = more disclosure.

<sup>2</sup>0 = less rigid to 100 = more rigid.

such taxes are still considered an effective revenue source given the high volume of financial transactions and the relative ease with which the organized financial sectors can be taxed (Árvai and Heenan, 2008). Tax withholding is used because of its ease of implementation, low compliance cost, and effectiveness in preventing tax evasion, but it has shortcomings as well. In particular, a withholding tax for nonresident investors can reduce foreign participation in the secondary market.

Interest rate controls impede bank and market development in some smaller economies. This is the case in Africa in particular, where such controls remain in effect in many countries (Gulde and others, 2006). Interest rate floors make banks reluctant to accept further deposits, particularly where there is high bank liquidity and nonremunerated required reserves. Maximum lending rates prevent banks from adequately pricing lending risk, which can contribute to weak lending and structural excess liquidity.

**Table 2.10. Selected Countries: Indicators of the Effectiveness of the Legal Framework**

|                                | Procedures to Enforce a Contract (Number) | Procedures to Register Property (Number) | Time Required to Enforce a Contract (Days) | Time to Resolve Insolvency (Years) |
|--------------------------------|---|--|--|------------------------------------|
| Smaller economies (85)         |   |  |  |                                    |
| Average                        | 33.7                                      | 6.2                                      | 432.0                                      | 3.4                                |
| Median                         | 33.0                                      | 6.0                                      | 405.0                                      | 3.1                                |
| Emerging market countries (39) |   |  |  |                                    |
| Average                        | 34.5                                      | 6.7                                      | 426.5                                      | 4.2                                |
| Median                         | 33.0                                      | 6.0                                      | 381.0                                      | 3.9                                |
| Advanced countries (24)        |   |  |  |                                    |
| Average                        | 19.6                                      | 4.6                                      | 240.4                                      | 1.5                                |
| Median                         | 19.5                                      | 4.0                                      | 169.5                                      | 1.2                                |

Source: World Bank.

Note: Number of countries in parentheses.

### Lack of Political Will and Vested Interests

The influence of politically driven policies on financial markets is also more prevalent in smaller economies. Often, government, regulatory, and central bank policies are driven by influential interest groups and politicians. Similarly, allocation of the resources of the financial sector is often determined by favoring certain interest groups, thereby creating inefficiencies and distortions, and impeding the development of the financial markets. In many countries, a small number of the elite, who are politically well connected, enjoy access to capital, distorting the efficient allocation of resources. A higher share of managers surveyed by the World Bank rank corruption as a major business constraint in smaller economies, relative to emerging market countries (Table 2.11).

**Table 2.11. Smaller Economies and Emerging Market Countries: Corruption**

*(Percent of managers surveyed ranking corruption as a major business constraint)*

|                                |      |
|--------------------------------|------|
| Smaller economies (35)         |      |
| Median                         | 35.1 |
| Average                        | 35.7 |
| Emerging market countries (23) |      |
| Median                         | 27.5 |
| Average                        | 28.7 |

Source: World Bank, *World Development Indicators*.

Note: Number of countries in parentheses.



### III Foreign Exchange Markets

The foreign exchange market is the most fundamental for a smaller economy with its own currency and is thus considered first.<sup>14</sup> Even in the absence of a financial system, foreign exchange must be traded because it is needed for international transactions. In some cases, foreign exchange serves as a store of value and as a unit of account for large-scale transactions. Further, central banks in countries with undeveloped domestic markets will use foreign exchange operations as the main instrument of monetary policy. Foreign exchange swaps and spot transactions are used as the main monetary instrument in many smaller economies with thin money and government securities markets (IMF, 2005a). An active foreign exchange market boosts financial sector development by building trust among banks and providing basic infrastructure and liquidity for further financial market development.

This chapter focuses on interbank markets, as opposed to retail markets. The interbank market consists of banks that informally or formally commit to quote bid and offer prices tradable for minimum amounts of foreign exchange. The focus is on the interbank market, rather than the retail market, because the former is more concentrated and governed by market forces, more subject to government policies, and closely linked with the other essential financial markets.

Markets of the 44 percent of smaller economies that adhere to a floating exchange rate arrangement are the main topic of this chapter. Floating exchange rate arrangements are (1) managed floating with no predetermined path for the exchange rate; and (2) independently floating. A floating exchange rate varies enough to allow for a high degree of market development.<sup>15</sup>

This chapter is structured as follows. First, the stylized facts based on the available information are summarized. Second, the sequence of steps for developing the interbank foreign exchange market are presented. Third, special topics pertaining to foreign exchange markets in fixed exchange rate countries are discussed.

<sup>14</sup>The only papers that address foreign exchange markets in emerging market countries and smaller economies appear to be Kovanen (1996) and Gray and Talbot (2006).

<sup>15</sup>This paper does not address the issue of the appropriate exchange rate regime for smaller economies (see Mussa and others, 2000).

#### Stylized Facts

The stylized facts are drawn from the technical assistance and surveillance work of the IMF, central bank publications and websites, and case studies. There appear to be no broad cross-country data sources for smaller economy foreign exchange markets. The source data and case studies are presented in Annex I.

The main stylized fact is that most smaller economy foreign exchange markets are relatively less developed:

- Foreign exchange market turnover in the limited number of smaller economies that have available data shows that these markets are much smaller compared with those in emerging market countries.<sup>16</sup>
- Only about half of smaller economies report the existence of a forward market, compared with 90 percent in both emerging market and advanced countries.
- Relatively few smaller economies have market supporting arrangements, such as committees of market players, codes of conduct, and dealer systems.
- Exchange markets with floating regimes in smaller economies are more volatile than in emerging market countries in the sense that smaller economies exhibit a relatively high share of days with large exchange rate changes.

The general lack of development of smaller economy foreign exchange markets probably reflects the following:

- Smaller economies have relatively few banks, which greatly limits the number of market players. The median number of smaller economy banks is only five, compared with 27 for emerging market floating exchange regime countries.
- Smaller economies tend to receive official rather than private capital flows, and official inflows are less likely to enter the economy through the foreign exchange market.
- Central banks often dominate foreign exchange markets in smaller economies by supplying most of the foreign exchange and by influencing price setting. This limits market development.

<sup>16</sup>The lack of data for smaller economy foreign exchange markets can itself be seen as a sign of lack of development.

## Market Development: From Central Bank Dominance to Market-Led

Country experience indicates that foreign exchange market development follows a natural sequence. First, the government removes impediments. Then, the central bank takes steps to establish the basic elements of the market. Market deepening is then driven by the market players themselves. This sequence can be used by policymakers to help identify where their country fits into the experience of others and provides a natural order for policy implementation. Of course, many of the policy recommendations discussed at each stage can apply to others as well. Annex I provides instructive case studies for some of the countries referred to below.

### The Removal of Impediments

A basic level of development of the foreign exchange market requires a minimal number of players and the removal of major impediments. Thus, a sufficiently liberal exchange system is a prerequisite.

### Exchange System and Capital Account Liberalization

Government and central bank domination of foreign exchange allocation will impede market development. Controls on foreign exchange transactions and counterparties that severely limit access to foreign exchange and the ability to conduct foreign exchange transactions often induce parallel foreign exchange markets, multiple currency regimes, and rigidities in the market micro structure, all of which pose major obstacles to the development of an interbank market.

The elimination of surrender requirements is a necessary early step. Surrender requirements to the central bank will stymie market development. Surrender requirements to the banking system may not impede the initial levels of market development, but should be eliminated at more advanced stages to support the development of forward markets. In Nigeria, the requirement for banks to return unutilized foreign exchange 15 days after its purchase in central bank auctions was abolished to promote interbank trading. The former Yugoslav Republic of Macedonia also abolished surrender requirements, allowing exporters to freely trade and manage foreign exchange flows.

Capital controls implemented to support external stability can at the same time limit foreign exchange market development. Liberalization of capital controls supportive of macroeconomic stability and the lifting of trade restrictions can create an additional source of foreign exchange, which stimulates market activity and contributes to a deeper and more liquid market. In Iceland, the completion of the liberalization process for capital movements between Iceland and the European

Economic Area in early 1995 triggered an important increase in the source of foreign exchange. Of course, capital control liberalization can also increase the risk of sudden stops and must be undertaken carefully.

### Competitive Banking Sector<sup>17</sup>

A competitive banking system is essential. Policies to develop the banking sector generally will in many smaller economies develop the foreign exchange market as well. Specific banking sector impediments to foreign exchange market development include channeling the bulk of foreign exchange inflows to a single state-owned bank (as in Azerbaijan), and regulations or other less-formalized procedures that compel enterprises to deal with selected banks. Foreign banks can boost market development by bringing experience and skills in trading and managing foreign exchange risk that are transferable to local banks. In Serbia, foreign banks comprised most of the small number of banks that began to quote continuous foreign currency prices.

### Scaling Back the Dominant Market Role of the Central Bank

Shifting the central bank from a market-controlling to a market-supporting role is the main policy lever over foreign exchange market development. The central bank will often dominate the foreign exchange market in its role as fiscal agent even after the removal of exchange restrictions. The dominant market role of the central bank means that it has to drive foreign exchange market reform in the early stages. Furthermore, the important monetary operations role of the foreign exchange market makes it in the interest of the central bank to take the lead at early stages of market development.

Cutting back the role of the central bank provides a wide array of benefits by introducing market forces. The early phase of market development provides the benefits of (1) limiting disruptions to the real sector from the sporadic availability of foreign exchange; (2) reducing the level of precautionary holdings of foreign exchange; (3) improving the effectiveness of foreign exchange monetary instruments; and (4) laying the basic groundwork for the development of other financial markets.

However, a minimal degree of market development is necessary before the central bank can shift away from a dominant role. The conditions for shifting the central bank away from a dominant market position include (1) an exchange rate policy that does not depend on large-scale intervention; (2) foreign exchange flows managed

<sup>17</sup>Calvo (2004) provides an overview of bank development policies.

directly through the interbank market, rather than the central bank, and a regulatory framework that does not unnecessarily restrict access to foreign exchange; (3) an interbank market consisting of a competitive banking sector, generally accepted industry rules for market making, and a code of conduct; (4) a market infrastructure that provides for a transparent price discovery mechanism; and (5) risk management instruments and systems to assess exchange rate risk.

#### **Scaling Back Direct Central Bank Control of Market Flows**

The first step is to reduce the foreign exchange intermediation role of the central bank. Central banks will dominate the *supply* of foreign exchange when foreign aid is the main source of external financing (e.g., in Tanzania), or when a state-owned exporter that earns a large share of export revenues sells foreign exchange to the central bank. Central banks will dominate the *demand* for foreign exchange when for security reasons they undertake a significant share of payments in foreign exchange. One example of this is when central banks directly pay—rather than selling foreign exchange to the market—for oil imports to ensure energy security, or for debt payments to ensure continued access to international financing (Guyana). Although access to foreign exchange for oil and debt payments can raise legitimate security concerns, the authorities' consideration of the dominant role of the central bank should account for benefits of foreign exchange market development.

#### **Establishing a Market-Friendly Trading Mechanism**

As the central bank reduces its direct control of flows, it can at the same time set up a trading mechanism that allows for the influence of market forces. As the market develops, the central bank can enhance deepening by implementing successively more market-oriented trading mechanisms that enhance price discovery:

- *Fixing session*—Trading takes place in fixing sessions managed by the central bank, with it playing a significant role in the price formation process, buying and selling in the fixing session to meet a certain exchange rate objective. In Serbia, the central bank provided foreign exchange to the market in a daily fixing session, and for the rest of the day banks transacted with each other at the fixing rate. A drawback of administrative fixings is that the confinement of trading to the fixing session can slow the introduction of continuous interbank trading (Iceland).
- *Foreign exchange auctions*—Foreign exchange auctions, conducted according to a frequent and transparent schedule, provide predictability in the supply of foreign exchange, limit the need for direct central

bank involvement, and allow exchange rate variability driven by market forces (Trinidad and Tobago). The use of cutoff exchange rates should be avoided because they can lead to excess demand (Nigeria, Mozambique).

- *Multilateral trading sessions*—These can be managed by the central bank and scheduled frequently enough to approach continuous trading. Banks participate by providing their bids in an open bidding system until the market clears, with all transactions conducted at that single price. This concentrates liquidity during the session. The Bank of Israel introduced a daily multilateral trading session as a first step toward an interbank market following the introduction of a horizontal trading band.

#### **Market Makers**

During the early stage of market development, the central bank can serve as a market maker to maintain confidence in the market. The market-making central bank can encourage banks to provide continuous two-way prices. Thereafter, the central bank can encourage banks to become market makers themselves by limiting its own involvement to banks that provide firm two-way quotations for an established minimum amount. Once interbank market activity picks up, the central bank should completely phase out its own market-making role. This can start with it serving as a market maker of “last resort” by quoting less attractive prices than the market to encourage participants to first trade among themselves, and promote additional measures to reinforce the market-making commitment of the banking system (former Yugoslav Republic of Macedonia). Ultimately, the central bank can take measures to shift the market-making function entirely to banks. The central bank can help identify a group of banks that can start acting as market makers by posting bid and offer prices for the most important currencies, establishing a market committee that assumes responsibility for developing a market-making agreement and a code of conduct guiding interbank market activity, and urging the development of credit lines (Canales Kriljenko and others, 2003). In small markets with few banks, expanding the market-making function to foreign exchange bureaus may help increase competition, in particular where collusion has led to nonmarket pricing or allocation of foreign exchange.

The commitment to market making can be reinforced by linking it with the right to participate in the central bank's foreign exchange market operations. In small markets with few banks, central banks have formalized their own counterparty relationship by, for example, establishing a primary dealer system. These systems can be even more important to encourage market making and are employed in smaller advanced countries. In Iceland, for example, only three banks act as market

makers and they are exclusively entitled to conduct foreign exchange transactions with the central bank in exchange for their commitment to make two-way interbank prices.<sup>18</sup> While market-maker agreements are typically initiated and formed by the interbank market and a primary dealer agreement by the central bank, a combined approach promoted the emergence of continuous interbank trading in the former Yugoslav Republic of Macedonia. After introducing an electronic trading platform in 2005, the central bank signed a market-maker agreement with four banks that also made them the direct counterparties for central bank interventions.

The central bank can take other steps to foster the market development role of the market makers. The central bank can set minimum criteria for market-making performance and activity, conduct regular reviews of market-making performance, and discuss these in meetings with the banks. In Iceland, the central bank requires market makers to update two-way prices with a defined frequency (every 30 seconds) and has instituted a commission-based market-making system.

### **Market-Supportive Foreign Exchange Intervention<sup>19</sup>**

Foreign exchange intervention can be designed to enhance foreign exchange market development. Excessive central bank intervention aimed at smoothing short-run volatility can dampen market development by reducing the perception of exchange rate risk and removing incentives to manage it properly using the interbank market. At the same time, intervention may be needed to maintain an orderly market, especially for smaller economies given their vulnerability to large daily exchange rate movements (Annex I). Interventions using market instruments at the market prices and in a transparent manner can help smooth volatility without impairing market development. The use of information gained from careful monitoring of the market as input to the liquidity forecasting and monetary operations framework also enhances the effectiveness of foreign exchange intervention. Systematic monitoring and continuous communication with the market should be performed through a dialogue that is separate from regulation and supervision. In Uganda, the division of central bank foreign exchange operations into sterilization and intervention transactions reduced uncertainty for interbank market participants.

Central bank interference with the market constrains market development. Market activity is repressed when central banks decide on what spreads and for what purpose they sell foreign exchange to eligible financial

intermediaries, use moral suasion to smooth exchange rate volatility, or compel banks to limit foreign exchange movement through formal agreements. Further, procedures that involve monitoring of individual transactions, excessive market presence, or attempts to set ex ante daily ranges for the exchange rate interfere with a market-based price discovery mechanism.

### **Market-Driven Deepening**

Banks and other market players should take over from the central bank as drivers of market deepening once continuous trading commences. Market-driven deepening provides the benefits of (1) a wider choice of monetary instruments; (2) more cost-efficient allocation of foreign exchange; (3) better risk transfer, including with derivatives; (4) synergies with the development of other financial products, for example, collateral for repos; and (5) better absorption of exchange rate shocks, allowing the option of more exchange rate flexibility.

### **Industry Cooperation**

Industry-accepted agreements should replace initial voluntary arrangements. A market-making agreement sets out trading rules, including minimum trading amount, bid and ask spreads, rules for confirmation and settlement, and trade resolution. The formation of dealer associations can further strengthen the markets' ownership role of the market guarantor function.<sup>20</sup> Agreements and rules must be market supportive—excessive documentation requirements, restrictions on access to foreign exchange on individual counterparties, instruments, or maturity of instruments, and short selling are types of measures that impede the ability of market makers to take foreign exchange positions and thus inhibit their role as liquidity providers.

### **Technical Infrastructure**

The technical infrastructure should facilitate continuous postings of bid and offer prices and ensure that the price formation process is transparent. Once market activity increases, continuous posting of bid and offer prices should be done electronically to increase transparency in the interbank market. In some countries, like Costa Rica, Mexico, and Hungary, the stock exchange offers a formal trading infrastructure for currency trading, including forward trades.

Electronic trading platforms increase operational efficiency and improve market transparency. The

<sup>18</sup>The number of market makers in Iceland was at most six, but this number has declined owing to, among other issues, mergers.

<sup>19</sup>See Canales Kriljenko, Guimaraes, and Karacadag (2003).

<sup>20</sup>In developed markets, codes of conduct are formed by professional dealer associations such as the Financial Markets Association. Market committees such as the Joint Standing Committee in the London market and the Foreign Exchange Committee in New York relay the views of market participants to the authorities.

simultaneous processing of large amounts of market information and the opening up of integrated solutions reduces transaction costs. Operational risk is reduced by integrated solutions such as straight-through processing to middle and back offices. Electronic trading platforms include a variety of systems and different degrees of interaction between various market participants. Electronic trading platforms in over-the-counter markets traditionally involve a segmentation between an inter-dealer and a dealer-to-customer market.<sup>21</sup> Electronic trading platforms (e.g., Reuters Dealing) that are designed to cater to the full trading process (execution, confirmation, and settlement) enable a smoother trading process and make the trade resolution process easier by reducing operational risk. In Serbia, the development of an electronic infrastructure played an important role in providing the tools for market making and trading. Uganda developed an information system to widen interbank market access to price information, which increased market transparency.

#### Hedging Instruments

Hedging instruments facilitate the transfer of exchange rate risk, which enhances systemic stability and allows entities to better manage exchange rate variability. In addition, hedging instruments can feed back into deepening the spot foreign exchange market. Traditional risk management instruments, such as foreign exchange forwards and swaps, typically emerge first. A lack of sophisticated market players limits the potential for hedging instruments in many smaller economies, but other impediments can be addressed by policy.

The introduction of hedging instruments can be held back by regulatory obstacles. The appropriate balance must be struck between market development measures and regulatory requirements.<sup>22</sup> Permitting access to hedging instruments for a use broader than hedging underlying transactions can help boost activity and liquidity in the interbank market. Some degree of speculation is necessary to “absorb” flows emanating from hedging activity. This can help reduce the risk of a one-sided market because these speculators are willing to take the opposite position of the hedger. In Poland, dropping the requirement that foreign exchange swaps

required a permit from the central bank helped boost the swap market, as well as the liquidity and depth of the spot market.

A domestic money market yield curve helps create liquid hedging instruments. Forwards and swaps are priced on the interest rate parity condition, that is, the forward or discount priced by market makers will reflect the interest rate differential between local and foreign currency. The absence of such a price indicator, or a less reliable one, may lead to a wide variation of interbank prices because market participants may base their prices mostly on their own interest or positions. The more efficient pricing mechanism provided by liquid money and government securities markets can therefore boost hedging instruments. These complementary markets, which are encouraged by the move toward a market-based monetary and debt management framework, were essential in developing forward markets in many countries (e.g., Czech Republic, Israel, and Poland), but the absence of these markets has slowed forward market development in some countries (e.g., Serbia, Uruguay).

The design of prudential requirements in support of stability should take into account the impact on foreign exchange market development. Overly restrictive limits on net-open positions reduce the capacity of the interbank market to trade and take positions. Indeed, overly restrictive limits might instead have the adverse effect of increasing volatility unnecessarily as banks are forced to immediately enter the interbank market to cover customer transactions. Forward markets can be inhibited by restrictions on trading foreign exchange forwards. Restrictions on nonresident activity can contribute to the emergence of an offshore nondeliverable forward market (NDF), which in some circumstances can complicate policy and local market development. Other prudential requirements that can impact market development include minimum holding periods, maturity restrictions, and reporting and approval requirements.

Increased sophistication of the foreign exchange market should lead to an upgrade of the supervision of bank risk management practices. A more developed market transfers exchange rate risk from the central bank to the banking system, potentially ratcheting up exchange-rate-related risks.

#### Fixed Exchange Rate Regime Issues

Two foreign exchange market issues are relevant for the one-quarter of smaller economies that operate a pegged exchange rate regime. First, some of the benefits of price discovery can be realized under a fixed exchange rate with a trading band. Second, foreign exchange market development is an important prerequisite for moving to a floating exchange regime.

<sup>21</sup>In developed markets, however, the traditional segmentation between the inter-dealer and the dealer-to-customer market is undergoing a transformation by new types of electronic trading platforms that provide nonbank customers direct access to the interbank market.

<sup>22</sup>Although the rules guiding interbank market trading and codes of conduct are typically based on self-regulation, government or central bank regulation may restrict access to the foreign exchange market for specific purposes.

### Foreign Exchange Markets in a Pegged Regime with a Trading Band

Some of the benefits of an interbank market can be realized even under a pegged exchange rate.<sup>23</sup> Even small movements in the exchange rate convey information about market tightness and provide price discovery, which facilitates private sector decision making as well as policy formulation. A horizontal band can permit exchange rate fluctuations that create an incentive for interbank market participants to start negotiating trades among themselves. The exchange rate should be flexible in both directions around the central rate to make risk transfer possible, thus giving an incentive for market participants. Further, the degree of flexibility should provide scope for profitability in the market-making activity. There are several examples of small developed countries with active foreign exchange markets under pegged exchange rate regimes. In Denmark, the interbank market is active despite very small fluctuations under a pegged exchange rate regime (Box 3.1). In Iceland, the interbank market was developed already under the pegged exchange rate system in 1993.

### Transitioning to a Floating Regime

Foreign exchange market development is a key ingredient in the transition from a fixed to a floating exchange rate regime. Country experiences suggest that a gradual increase in exchange rate variability accompanied by parallel measures to reinforce the market structure help prepare for a smoother transition between regimes. Putting in place supporting elements such as a deep and liquid interbank foreign exchange market, instruments and systems to manage and assess exchange rate risk, as well as intervention policies consistent with a greater degree of exchange rate variability and market development, have enabled countries to transition to exchange rate variability in a smooth and orderly manner (IMF, 2005b).

An important step is to create a trading mechanism that allows the interbank market to gradually drive exchange rate movement. Central banks should cease to be market makers and establish an intervention framework that supports interbank market activity. In Israel, the central bank reduced its market domination in the fixing sessions by shifting to a multilateral trading session, which was later phased out and replaced by an interbank system to prepare for more exchange rate flexibility in the transition to a crawling band. In parallel, the intervention policy was designed to be

<sup>23</sup>Price discovery is also possible under a currency board arrangement. For example, the Hong Kong Monetary Authority maintains a “Convertibility Zone” of US\$7.75–\$7.85 to HK\$1 within which the exchange rate varies and market operations are conducted.

#### Box 3.1. The Danish Foreign Exchange Market

The foreign exchange market in Denmark provides significant economic benefits notwithstanding the fixed exchange rate regime. The exchange rate is pegged to the euro within an official band of  $\pm 2.25$  percent, although in practice the central bank maintains the krone closer to a  $\pm 1$  percent range and the foreign exchange market is free of restrictions. Relatively little trading is driven by speculation on the euro-krone exchange rate owing to the flexibility of the goods and labor markets and sound policies. The market is used to hedge against currencies such as the U.S. dollar. The market infrastructure is well developed and most transactions take place over electronic trading platforms, resulting in a high degree of transparency. Quoted bid-ask spreads are narrower than those of neighboring Scandinavian currencies with floating exchange rate regimes, and average daily turnover reached \$86.1 billion in April 2007. This is close to the local currencies in comparable countries with independently floating regimes, such as Norway and New Zealand.

The foreign exchange market provides a wide range of instruments to efficiently manage foreign exchange flows and exposure. Market makers actively provide liquidity in spot, forward, and foreign exchange swaps, as well as foreign exchange options and currency swaps, although turnover in these instruments is much smaller. Forward transactions, which accounted for 12 percent of overall turnover in April 2007, are mostly done to hedge exchange rate exposure against currencies other than the euro. Foreign exchange swaps—which were 71 percent of overall activity—are actively used as a short-term money market product to manage liquidity in the domestic currency. Foreign exchange swaps greatly exceed turnover in the spot market, which is consistent with the global foreign exchange market.

consistent with the aim of developing interbank market activity and risk management instruments, which meant that intervention activity gradually decreased as exchange rate variability increased.

Money market development eases the transition toward greater exchange rate flexibility by boosting foreign exchange market development. In particular, money market development provides a stable and transparent pricing mechanism for foreign exchange forwards. In Israel and Poland, money market development was essential for the development of foreign exchange hedging instruments, while in Uruguay, the absence of a developed domestic money market initially hindered the foreign exchange market from developing (IMF, 2005b).

## IV Money and Secondary Government Securities Markets

Money and government securities markets are considered together because their development is so closely intertwined.<sup>24</sup> Banks dominate the vast majority of smaller economy financial sectors and they will almost always dominate both sides of money and secondary government securities markets. Most policies aimed at building one market develop the other as well. Further, the same infrastructure is typically used to conduct transactions in each market.

### Stylized Facts

The available data suggest that the potential for further development of these markets in most smaller economies is considerable (Annex II). The main stylized facts are as follows:

- The very limited amount of available information suggests that, as a whole, money markets in smaller economies compared with those in emerging market countries are quite thin and offer a narrower range of products. Overnight interbank cash transactions tend to be the main product in smaller economies.
- Only about a quarter of smaller economies have secondary government securities markets sufficiently developed to attract trading by foreign institutions, and only a few have even fairly active markets.
- The amount of secondary government securities market trading in relation to GDP is quite low, and likely lower than that needed to have an important economic impact.
- Secondary government securities market trading volume in smaller economies has increased substantially, but remains a tiny fraction of the amount in emerging market countries.

<sup>24</sup>Government securities market development in emerging market countries is covered in Árvai and Heenan (2008) and IMF and World Bank (2001); Gray and Talbot (2006) address money and government securities market development generally. The discussion and country references in this chapter draw on these papers, as well as IMF (2005a, 2007c, 2007d).

### Market Development

Money and government securities market development follows three broad stages that have qualitatively different development policy implications.<sup>25</sup> Policies at the most basic level tend to focus on government measures to remove impediments and develop the banking system. Once regular trading begins, the central bank, in close coordination with the government and banks and NBFIs, facilitates development by shifting to market-supporting monetary operations. Market players themselves take the lead for formal and sophisticated markets, with the central bank using market-based monetary operations and public agencies working together to ensure stability.

#### Basic Level: Interbank Deposits

At the outset, the money market comprises interbank deposits and there is little or no trading of government securities. Some banks may be excluded owing to counterparty credit risk concerns. Transactions are informal and usually overnight. In many smaller economies, structural excess liquidity undermines funding demand and induces institutions to buy and hold government securities. Money markets thus provide only a limited scope for bank liquidity management and risk allocation, and do not improve monetary policy transmission because they are not developed enough for market-based instruments. The government issues domestic debt exclusively to local institutions by a simple auction or even on a required basis, sometimes at nonmarket clearing interest rates. The secondary market is limited to a few occasional transactions by local banks or NBFIs.

#### Market Development Policy Strategy

At this level, market development policy objectives need to be realistic and tailored to the local circumstances. The main benefits from these markets are (1)

<sup>25</sup>This is the approach taken in IMF (2005a) with respect to money markets, and Árvai and Heenan (2008) on government securities markets.

basic monetary policy transmission, (2) some degree of interest rate variation to convey information regarding market tightness and inflation expectations, and (3) a minimal degree of bank liquidity management. The market development strategy should be based on the balance of these benefits against the costs of the allocation of scarce human and financial resources, including those needed to maintain financial stability as markets develop. The weighing of the benefits and costs should be founded on a realistic analysis of the potential and limits of domestic financial market development.

The authorities will generally lead the market development effort. Typically, market participants are not in a position to lead because they are small in number and size and less aware of market practices. Further, it may not be in the interest of individual market participants to develop the markets if they are earning rents from a dominant position. The government can remove market impediments and improve the legal framework and infrastructure, and the central bank can make monetary operations and the infrastructure more market-supportive (IMF, 2005a).

### **Bank Reform**

Enhancing banking sector competition to the extent possible is crucial because banks are the major players in the money and secondary government securities market. Banking sector development is generally a precursor to financial market development (Chinn and Ito, 2005). Privatizing state-owned banks, which often do not respond to market incentives and are thus less willing to be involved in the markets, offers the benefit of promoting market development. In Costa Rica an uneven playing field between state and private banks held back financial sector development in the past. The mixed strength of banks in the Kyrgyz Republic has limited money market development. Bank supervision should be improved to ensure that banks undertake proper risk management and thus help reduce or eliminate credit risk in interbank transactions.

Foreign bank entry should be given consideration. Foreign banks can bring in not just more capital but also expertise and technological know-how. However, in some smaller economies with underdeveloped financial markets and fiscal dominance, foreign banks tend to limit their operations to buy and hold purchases of highly profitable government securities, to the detriment of private sector credit or interbank operations. Foreign banks can also create vulnerabilities by bringing highly sophisticated instruments into countries with ill-adapted supervisory frameworks.

### **Market-Friendly Monetary Operations**

Monetary operations should be made market-friendly to the extent possible (IMF, 2005a; and Gray and Talbot,

2006). Direct monetary instruments, such as changes in liquid asset ratios and credit growth limits, and static policy interest rates, will impede money market development. In the West African Economic and Monetary Union (WAEMU), the absence of central bank bills, reflecting concerns over central bank profitability, as well as of treasury bills, has hindered the development of the money market. A move from direct to basic indirect monetary instruments, such as central bank bills or deposit auctions, will help foster money market development (Baliño, Enoch, and Alexander, 1995), as was the case in The Gambia during the late 1980s and early 1990s. If the central bank limits money market development by intermediating between banks, it can motivate banks to transact with each other by widening its spreads. Interbank loans in the Eastern Caribbean Currency Union were guaranteed by the Eastern Caribbean Central Bank at a fixed interest rate and collateralized; this guarantee was later dropped.

### **Infrastructure Designed for Local Circumstances**

Market infrastructure can be tailored to support development at reasonable costs. Markets in many smaller economies could be too small for some sophisticated elements of financial market infrastructure, such as an RTGS, CSD, registry, or electronic trading platform, to be worthwhile. However, there are options to improve the infrastructure in support of market development, most involving the central bank. For example, the central bank can create a simple central custody system for dematerialized government securities with a spreadsheet that matches orders and can have the power to settle orders through the payment system, given legal recognition of dematerialized securities and finality rules. Although simplified approaches are second best and can pose operational risk, they warrant consideration.

### **Upgrading the Market**

The policy decision to aim to upgrade depends largely on the viability of more developed markets. The decision must be carefully considered in terms of the number and size of the market players. An active money market and a government securities market are simply not viable if the number of banks is too small to form both sides of market transactions, or if banks are too small to actively manage their liquidity.

### **Intermediate Level: Markets with Regular Trading of Securities**

At this stage, the money market is active while secondary government securities trading is limited and informal. Money market trading involves central bank or government securities. Banks and sometimes NBFIs



will account for the bulk of market activity. The maturity spectrum of securities is wide enough to form a yield curve.

### **Market Development Policy Strategy**

Markets with regular trading provide a wide array of benefits. They can (1) improve the monetary transmission mechanism by making market-based operations possible, (2) reduce the need for monetization of government deficits, (3) reduce the cost of fiscal financing, (4) enhance bank liquidity management, (5) foster interest rate variation and price discovery, (6) develop the institutional infrastructure for other markets, and (7) provide a risk-free interest rate for other financial markets and products.

The fixed costs of paying for a moderately sophisticated market infrastructure will often be outweighed by these benefits. The number and size of potential market players at this level and the considerable potential benefits can make the fixed costs of sophisticated market-supporting infrastructure and the allocation of government resources worthwhile.

Sufficient government capacity is a key element for market development. The implementation of market development policies should take into account the often multiple demands on the time of key officials that can slow or even preclude the implementation of market-supporting measures.

The authorities must work closely with banks and other market players. Banks should be sophisticated enough to be able to help the government form a forward-looking vision of where markets could go. An example of a comprehensive approach is in the Ninth National Development Plan of Botswana. Mozambique has formulated a comprehensive financial sector reform program, including measures to build capacity, focusing on strengthening the banking sector and enhancing the capacity of the central bank, improving financial accountability and transparency, strengthening public debt management, and improving money and government bond market efficiency and depth.

### **Financial Sector Competitiveness and Stability**

Market development is facilitated by government policies aimed at making the entire financial sector as competitive as possible. A financial sector large and competitive enough for participants to regularly take both sides of market transactions is crucial. Policies to boost financial sector competitiveness can include bank privatization, allowing foreign bank entry in some form, and possibly liberalizing the capital account.

A lack of investment opportunities can lead to a buy-and-hold strategy on the part of institutional investors that limits secondary market development. Growth of pension funds and other institutional investors such as

insurance companies will contribute to the development of government securities markets. In addition, developing the equity market (Chapter V) and corporate bond markets, and, under the right conditions, allowing foreign investment can help here.

An upgrading of bank and NBFIs supervision is often required to eliminate interbank credit risk and ensure overall bank soundness. Good supervision promotes financial stability more generally, which is needed to get investors involved in financial markets. Supervisors must be especially diligent in requiring proper risk management systems of banks, NBFIs, and intermediaries. Further, government regulators and the central banks must devote appropriate staff and training to monitoring the possibility of systemic problems.

### **Role of the Central Bank**

The central bank can help initiate measures to deepen the markets. At least, the central bank can monitor the market carefully, stay in close touch with the market players, and provide market data. The central bank may consider forming a market committee of the most active participants in the interbank market. Enforcement of market association rules can be reinforced by the participation of the central bank, but its role should be more that of an observer. The central bank can initially serve as a market maker, providing a wider spread and withdrawing as soon as market conditions allow. A matching system run by the central bank can also help facilitate price formation early on.

### **Market-Supportive Monetary Operations Framework**

The monetary operations framework can be designed to induce banks to manage liquidity by transacting with each other rather than with the central bank. Money market development is boosted by a reserve requirement framework designed to motivate banks to transact with each other (Gray and Talbot, 2006). The introduction by the National Bank of Azerbaijan of required reserve averaging in 2005 helped develop the interbank money market. Limiting standing facilities to overnight maturity will give banks incentive to transact with each other at all other maturities. Diminished reliance on central bank liquidity fostered the development of the money market in Tunisia. Standing facilities can be designed to set an interest rate corridor wide enough to make it worthwhile for banks to find other bank counterparties rather than tap a standing facility, but narrow enough to limit interest rate volatility. However, the central bank may need to intervene to limit volatility within the corridor owing to the thinness of the money market.

Treasury bill issuance can be oriented toward market development. The longer the maturities at which these securities are auctioned, the more incentive banks will

have to manage their liquidity by trading with each other rather than buying government or central bank paper. In Serbia, the reduction in the number of central bank bill maturities and lengthening of treasury bill maturities helped foster the money market. Uganda's move to more market-based operations helped smooth interest rate volatility. In some smaller economies, the use of treasury bills as the main monetary instrument (Guyana, Mozambique) could eventually boost secondary market development.

The central bank should use a detailed liquidity forecast, prepared in close cooperation with the government, to maintain stable short-term monetary conditions (Schachter, 2000). The lack of a liquidity forecast has impeded money market development and monetary operations in many smaller economies (IMF, 2005a). A liquidity forecast helps money market participants better understand the shocks coming to the market and enhances central bank short-term intervention policies. The receipts and expenditures of governments that do not actively manage the cash balances in their accounts in the central bank are key components of the liquidity forecast. Active cash management targeting very low fluctuations in the target cash balance helps limit the impact of government transactions on market liquidity. Disclosure of the central bank's liquidity forecast and the basis for monetary policy decisions gives banks more information on which to base market decisions.

### **Structural Excess Liquidity**

Structural excess liquidity undermines the demand side of the money market and induces banks to buy and hold government securities. Structural excess liquidity can be defined narrowly as the amount of liquidity that commercial banks hold with the central bank above that needed for required reserves and for payments, or, more broadly, as the amount of liquid assets on their balance sheets that under more favorable credit circumstances would be loaned out. In WAEMU countries, banks use government securities as an alternative to excess reserves rather than to manage risk and liquidity, and changes in excess liquidity seem to drive market tightness. In Albania, increased credit demand during 2005 led to a shift from excess liquidity to a shortage that helped increase money market activity.

Sterilization and credit infrastructure policies are usually the most appropriate. Credit market deficiencies are the root cause of structural excess liquidity in most smaller economies. In the short and medium term, structural excess liquidity can be absorbed by the one-off issuance of long-term government securities over and above financing needs to fiscalize the costs, and the depositing of these proceeds at the central bank (Saxegaard, 2006). This will require a judgment as to whether the benefits of greater market develop-

ment outweigh the fiscal costs of sterilization. Policies to improve credit infrastructure to induce banks to lend at interest rates that borrowers are willing to pay run a gamut of issues, including the legal framework and creditor rights, and are highly country specific (Bossone, Honohan, and Long, 2001).

### **Government Debt and Cash Management Strategy**

The elimination of central bank financing of the government opens the way to government securities market development. Shifting from statutory central bank financing to issuance of treasury bills boosted the stock of government securities in WAEMU.

Primary issuance can be designed to foster market development. Issuance procedures designed to take into account the needs of institutional investors can help promote secondary market trading. Forced allocation of government securities to local investors should be avoided, and competitive auctions that promote the development of a market-based clearing mechanism for interest rates should be introduced. In the absence of a sufficiently large number of potential bidders, private placements may be necessary in the initial stages. If private placements are needed they can be done through competitive bidding, as was the case in Jamaica in the late 1990s.

Limiting the number of separate government securities issues facilitates secondary market trading, as does a transparent schedule. Irregular issuances and a lack of transparency have impeded market development in WAEMU countries. In Chile, a shift to standardized bullet central bank bonds facilitated the creation of a yield curve. In Jamaica and Hungary, a lengthening of government security maturities enhanced the stability of government financing. The lengthening of government security maturities from one to seven years in 2005 in Zambia and the new five-year government bond in Ghana have attracted substantial investor interest including from foreigners. An issuance calendar improves transparency and predictability, as was the case in Chile. The indexing of government bonds to inflation or the exchange rate, as was done in Israel, can boost market development, but such issues should be limited in number and designed as simply as possible.

A government debt and cash management strategy run by a specialized department within the ministry of finance can enhance market development. The centralization of the debt management function in Jamaica led to a considerable strengthening of debt management strategy.

A single treasury account at the central bank is indispensable for effective liquidity forecasting. A single account for all budget revenues and expenditures greatly improves liquidity forecasting because govern-

ment cash flows tend to be the most volatile elements of the forecast. Further, better expenditure controls from a single account can reduce arrears, which are a serious impediment to secondary treasury bill market development. A single treasury account is facilitated by an RTGS for high-value transactions connecting all major commercial banks and the treasury, as well as a small payments clearing system.

### **Infrastructure**

Regular trading of a variety of securities affords more infrastructure options that can improve market efficiency. These should be designed with more than one market in mind. Even when no formal market-maker arrangements are in place, active banks can post bid and offer prices electronically based on informal agreements. Clearing can be facilitated by a CSD in which investors have accounts. Another CSD option is a two-tiered structure in which the investors' securities are held with a custodian (most often a bank) that safekeeps securities for its customers and may provide various other services (cash management, securities lending, safekeeping of securities issued abroad, cross-border payment services). This requires a sound legal framework for securities settlement and custody and proper regulation and supervision of the custodians.

### **Sophisticated Level: Formal and Continuously Trading Markets**

These markets are more formal, with many banks and NBFIs dealing more or less continuously. They encompass the trading of repos and possibly other derivatives and a market-based monetary policy. Thus, the money markets provide the full potential array of benefits in the areas of liquidity and risk management, monetary policy transmission and transparency, and broad market development. The secondary government securities market is reasonably deep and liquid. Foreign institutions are key players. Importantly, the money and government securities markets are inextricably linked via infrastructure, contracts, and monetary operations.

### **Market Development Policy Strategy**

Formal and continuously trading markets provide a variety of extra benefits.<sup>26</sup> They enhance the liquidity management and the portfolio risk-return trade-off of banks and NBFIs. Monetary policy benefits from a stronger monetary transmission mechanism, enhanced

<sup>26</sup>Abbas and Christensen (2007), using a database of 93 emerging market and developing countries, found that moderate levels of domestic government debt are associated with a positive impact on economic growth and financial development.

transparency, and the options of an interest rate operating target and repo instrument. Government financing is less expensive and can benefit from market signals. Developed money and government securities markets boost financial development generally by providing a yield curve, economies of scale for institutional infrastructure, derivative markets, and the attendant risk transfer capabilities. These markets facilitate the absorption of capital inflows. Finally, policymakers benefit greatly from the relatively impartial information provided by market prices.

The increased sophistication and dynamism of markets means that market players must take the development lead. The markets are simply too complicated for government to drive reform. However, government must monitor markets closely and regularly communicate with market players to understand how it can help with market development.

Meanwhile, the authorities must take the lead to maintain systemic financial stability. In most cases, government intervention would usually not be warranted in the event that nonbank market players become insolvent, unless their failure would have systemic implications.

### **Monetary and Fiscal Coordination**

A market-based and transparent monetary framework is crucial for money and government securities markets to develop to their full potential. The central bank should be operationally autonomous, free of political interference, and large enough to have an effective research department and do effective liquidity forecasting. Either an interest rate or money operating target can be used. The use of repos collateralized by government securities as the main monetary instrument will help develop this key market, as well as the secondary government securities market. Disclosure of the central bank's liquidity forecast and policy views and intentions helps market participants distinguish short-term liquidity management operations from operations aimed at implementing policy changes.

A forward-looking and market-supportive strategy for government debt and cash management is also needed for sophisticated markets (IMF and World Bank, 2003). The objective of market development is typically given a high priority along with the goals of stable and inexpensive government financing. Buyback and reopening can eliminate illiquid securities and standardize current outstanding bonds. Regular communication with market players is crucial so that every aspect of securities issuance is market-friendly.

Many countries have adopted a primary dealer system for government securities markets. Primary dealers can foster secondary government securities market development by acting as market makers, committing to regular participation, and providing transaction data

to the central bank. In return, they may get privileged access to central bank open market operations or other advantages. A number of emerging and developing countries either have adopted, or are in the process of adopting, primary dealers (Arnone and Ugolini, 2005). Some countries introduce primary dealers in the initial stage of market development, such as Jamaica in 1994, whereas others wait until their markets deepen. Arrangements between primary dealers and the debt managers should be designed carefully so that the dealers are not seen as favored, and their obligations, privileges, and supervision designed carefully to avoid undermining market efficiency or limiting competition. The choice of using primary dealers for many smaller economies will be based on whether there are enough participants in government securities auctions for the authorities to reduce the number further by establishing a primary dealer system (a minimum of five to seven dealers is suggested).

### **Regulation and Supervision**

Money markets must be monitored and supervised because they can potentially impact systemic stability. The policy areas here encompass lender-of-last-resort support; a regulatory framework covering issuance, trading, payment and settlement, and intermediaries and custodians; and the risk management systems of banks and NBFIs, which should be tailored for the markets.

### **Market Associations**

As markets become more sophisticated, associations of market players can improve market efficiency and stability. Associations, as discussed in the preceding chapter, can establish a set of trading procedures (rules) that formalize the commitment to provide continuous prices. These should involve fully transparent pricing for all market participants. A well-developed code of conduct that sets out transparent rules for market behavior, rules for market making, and the conventions for trading and settlement can help ensure market efficiency and stability. A formal market-making agreement can be appropriate as trading moves from fixed periodic postings to a continuous basis. The market-making commitment is based on an agreement between banks, and in some cases reinforced by a primary dealer agreement with the central bank.

### **Specialized Institutions Can Boost Market Development**

Market makers are intermediaries that agree to continuously quote buy and sell prices, thus enhancing market liquidity. They must have sufficient capital to maintain an inventory and sustain losses in the event of market turbulence. Market makers can be provided incentives by the authorities if their role in boosting market liquidity brings important externalities (Gray and Talbot, 2006). These incentives can include exclusive access to market information, a dealing relationship with the government debt management office or central bank, cheaper access to government security auctions, and the right to borrow securities or take short positions in securities in order to be able to respond quickly to customer buy orders.

### **Infrastructure**

Financial market infrastructure should support continuous trading. Money market prices and transactions are typically reported electronically and cleared via the RTGS. Securities are held in dematerialized form in a CSD. Money, government securities market clearing, and settlements are linked. A custodian can serve as the CSD and provide other services, such as cash management, securities lending, safekeeping, and cross-border payments. Electronic trading systems can help deepen the market because these make it possible for several market participants in different locations to interact at the same time on a single platform. Government encouragement of the development of a standard repo agreement can help develop secondary market trading.

At the same time the market infrastructure should minimize the risks (CPSS, 2001, 2002, and 2004). Legal protection of netting and collateral arrangements are important here. Settlement risk can be eliminated by a delivery-versus-payment procedure. Operational risk is significantly reduced by electronic platforms that allow for straight-through processing. Developing contingency procedures can foster the safe transmission of payments and securities in the event of disruptions.

The upgrading of infrastructure should be market-led, with the authorities intervening to remove impediments or address potential systemic risk issues. Intervention can be needed when the interests of those controlling key elements of the market infrastructure diverge from the broad objective of market development.

## V Secondary Equity Markets

This chapter focuses on secondary market trading in formal equity market exchanges in smaller economies. Formal stock market exchanges are the focus because information is available on them and often governments explicitly aim to develop capital markets. Virtually no data are available for primary markets—which in smaller economies are often dominated by private placements, and by their nature they are less integrated into the financial system. Equity markets are considered after the other financial markets because the infrastructure, liquidity, and institutions that arise from foreign exchange, money, and government securities markets also facilitate the development of stock exchanges. Further, the scope of equity market development policies, which can involve issuing companies and institutional investors (which in smaller economies are often government-owned or controlled), is broader than for the other financial markets. Still, there is some important feedback from developing equity markets for the other financial markets. Case studies for countries referred to below are provided in Annex III.

### Stylized Facts

More cross-country quantitative information is available for secondary equity markets in smaller economies relative to other financial markets. Smaller economy equity markets are much less developed compared to those in other countries:

- Only 40 percent of smaller economies have formal secondary equity markets, compared with more than 85 percent for emerging market countries.
- Market capitalization and the stock turnover ratio data for the equity markets that do exist in smaller economies are much lower compared to emerging market countries. Market capitalization and trading volume vary considerably across smaller economies.
- Stock markets in smaller economies appear to provide a small proportion of financing of companies. Initial public offerings (IPOs) appear to be limited or nonexistent.
- Importantly, stock market trading, whether measured as a share of GDP or with respect to market capitalization, is much lower in smaller economies.

- Despite a recent increase in market capitalization (in percentage of GDP) in smaller economies, the gap between market capitalization in smaller economies and emerging economies has widened.

Smaller economy equity market development is not catching up with emerging market countries:

- The median of market capitalization across smaller economies has increased over the past seven years, but at a much slower rate than that of emerging market countries.
- The median turnover-to-GDP ratio across smaller economies is stagnant and rapidly falling behind that of emerging market countries.

The lack of development of the vast majority of smaller economy equity markets can be attributed to the following:

- The number and size of companies and institutional investors in smaller economies are much smaller than in other countries.
- Companies listed in smaller economy stock markets have a relatively small share of “free float,” or traded shares as a proportion of total shares.
- A large share of companies in smaller economies are family-owned and reluctant to raise governance and transparency practices to make the issuance of shares on an exchange possible.

### Market Development

The discussion of equity market development is also organized into three “stylized” stages, but the strategies are different from the other essential financial markets. Equity markets are somewhat different from the other essential financial markets in that the market players themselves play a bigger leading role and government policies cover a wider spectrum. For these countries, the key policy issue is whether a new market is viable and worth the costs of establishing it. If not, alternative sources of corporate financing may be a better policy objective. Policies to develop markets with a regular but relatively low turnover market are largely aimed at institutions and basic corporate governance. Finally, deep and active secondary market development is led by the market players themselves, with different gov-

ernment agencies improving the provision of information and fostering market stability.

### No Market or Inactive Market

Three-quarters of smaller economies either do not have an equity market or have a thin market (less than \$20 million in trading volume per year). The main issue here is whether or not to commit to develop an active secondary equity market.

### Policy Strategy

When deciding whether to support the creation of a new market or developing an existing one, the authorities must first judge market viability. Viability requires that the country have the number and size of potential issuers and institutional investors to support a market. A necessary condition is that the benefits of market issuance must exceed the costs for a large enough number of companies to sustain the market. Annex III shows that the presence of a market in smaller economies is related to the size and level of development of the economy, which likely correspond to the number and size of potential equity market players.

If a market is deemed not viable, then it is more likely that the fiscal and other costs to the public sector of setting it up exceed the benefits.<sup>27</sup> As discussed earlier, the opportunity costs of expending scarce government financial and human resources on market development can be high. The benefits from a less active equity market are likely to be limited, and encompass (1) the reputational improvement that companies get by listing on a stock exchange,<sup>28</sup> (2) the asset diversification opportunity, albeit limited, for institutional investors, and (3) positive synergies for developing other financial markets and attracting investors.

### “Angel” and Private Equity and Bank Financing

The payoff of policies aimed at fostering angel and private equity financing and bank lending may be higher than that from stock exchange development. “Angel” financing involves informal equity financing of companies by wealthy individuals or families and does not require a systematic regulatory framework or an institutional market infrastructure, but can benefit from a strong contract enforcement legal framework and judiciary, in particular to enforce investor exits (see World Bank, 2001a and 2003). However, in

<sup>27</sup>Equity markets can be developed by private sectors themselves as well. But here we focus on the government policy because it plays an important role in establishing an institutional market framework such as a stock exchange.

<sup>28</sup>Reputation and status are cited as key reasons for listing in Fiji and Guyana.

many smaller economies, the legal framework is lacking and the judiciary does not have the expertise or the resources to provide for speedy disposition. In countries where private equity has been successful, the bulk of the limited partners are institutional investors, including mutual funds and pension funds. Thus the lifting of investment restrictions on these institutions can help boost private equity financing. Angel and private equity holdings should have a legal status with clearly defined boundaries to provide legal certainty to all participants (Berger and Gregory, 2004). One approach is to assign legal status to private mechanisms for dispute resolution. In Costa Rica, recent amendments to the Securities Law authorize the creation of venture capital funds, which would be allowed to invest in private equity. At the same time, measures can be taken to develop the banking sector and absorb excess liquidity, as discussed in previous chapters.

### Low Turnover Market

At this level, the secondary market is small, with trading taking place on a daily basis. Investors are almost exclusively domestic institutions.

### Policy Strategy

The policy goal is to deepen and broaden as much as is feasible in the local circumstances. The extra benefits of this type of market are (1) a degree of market discipline for listed companies, (2) significant portfolio diversification of institutional investors, and (3) extra synergies with other markets, including in infrastructure.

The limited number of players means that the authorities will take the lead, albeit in tandem with market players. Issuers and investors are typically small in number and size and may have been exposed to deep and liquid financial markets. At the same time, the government must work closely with market players to ascertain their infrastructure and other needs, which will differ widely according to the level of market sophistication (Box 5.1). As mentioned before, the government of Botswana formulated and implemented a national financial sector development strategy.

### Issuers and Institutional Investors

Privatization of large state companies can boost market capitalization. The sale of government telecom companies in Jordan, Fiji, and Slovenia sharply raised market capitalization. In a similar vein, the cutting back of government financing of state companies can compel them to raise funds from the stock market, as in Botswana.

Pension reform can deepen markets. In Botswana, the introduction of a defined contribution pension scheme

### Box 5.1. Stock Exchange Trading Systems in Smaller Economies

The two main trading mechanisms used in smaller economy stock markets are:

- **Auctions**—Orders are accumulated in a single place with periodic clearance at a predetermined time, such as a few times a day or several days a week (call system), or continuously. Brokers forward orders to the auction system, but they do not take a position. An auction market requires a formal and institutionalized setting including an information technology infrastructure. Auctions are efficient and provide transparent price discovery as long as there is enough liquidity. Most smaller economy stock exchanges use auction systems.
- **Market makers**—Investors can transact at any time with a market maker, who provides continuous buy and sell quotes. The market maker holds a long/short position until either it or another market maker gets an offsetting order. An effective market-maker mechanism requires that market makers can respond quickly to investors' orders. Typically, these transactions are executed over the counter (OTC), but in some cases, market-maker and auction mechanisms work in parallel.<sup>1</sup> The appropriate trading system evolves in line with the stage of market development:

- **Initial**—A market-maker system or a periodic auction system is suitable for markets with a small number of participants and securities. This is the case for the first stage. In Guyana, brokers can match orders in-house before forwarding them to the exchange. The Guyana Stock Exchange, providing only one session a week, supports two types of trading, a single price auction and on-floor trading, in the latter of which brokers can view the other brokers' orders to deal with each other.
- **Intermediate**—A periodic call auction system can be used to match buyers and sellers when trading accelerates to the point that buyers and sellers can be matched on a frequent basis. As volume picks up further, the number of calls can be increased. In Fiji, the number of trading sessions increased from three (Mondays, Tuesdays, and Thursdays) to five per week in 2003 in response to an increase in transaction volume.
- **Advanced**—A continuous auction system is common in the more developed smaller economy markets. In addition, a market-maker mechanism may serve sophisticated investors that demand flexible trade size, timing, and composition. These customer-made transactions are facilitated both OTC and by exchanges.<sup>2</sup> Nordic and Baltic exchanges allow off-exchange registration, where buyers and sellers agree to terms over the telephone rather than via automatic matching. The Colombo Stock Exchange also provides special procedures for block trades so that they are executed based on already-negotiated terms.

<sup>1</sup>The market-maker approach also can be well suited for securities such as government bonds with trades concentrated in a small number of benchmark issues and participants limited to institutional investors and dealers, as well as smaller economy interbank money markets and foreign exchange markets. In some cases, market makers can be provided incentives by the authorities like those of primary dealers.

<sup>2</sup>Information on OTC transactions may be required to be reported to the exchange to ensure an efficient and transparent price discovery process.

for public officers in 2001 shifted pension claims to private funds, which allowed more efficient and diversified investments into both domestic and offshore markets. Botswana's pension funds at end-2006 held 18 percent of the total assets in the domestic equity markets. Pension funds in Croatia invested 64 percent of their asset growth into the local capital markets in 2005, contributing to a sharp increase the equity prices. The lack of a broad and diversified domestic institutional investor base has held back equity market development in many African countries.

The gradual relaxation of restrictions on holdings of institutional investors in private equity can boost market development. The shift of assets of the Social Security Corporation of Jordan from bank deposits and fixed-income instruments to equity products reached \$851 million in 2004 (46 percent of its total assets), comprising 11 percent of the ownership in the local exchange.

Attracting foreign investors can be effective as long as new capital inflows are consistent with external stability. Jordan has a success case. Botswana continues to provide positive signals to international investors by getting sovereign ratings and preparing the offshore center, although this has yet to bear fruit for the stock exchange. The lifting of limits on foreign ownership of domestic companies in Kenya boosted market capitalization.

#### **Regulation Should Balance Development and Stability**

Regulation should balance costs to issuers against the need for information for market development and investor protection. For most companies in smaller economies, the costs of adhering to market regulations will exceed the benefits of market issuance. Thus, a

balance must be struck so that the costs of regulations are right for market-worthy companies.

A regulatory framework will be needed for market intermediaries. Governments should consider whether to allow banks or other existing financial intermediaries to carry out these activities or whether a new type of specialized financial intermediary is needed (investment banks, fund managers).

Secondary equity market trading should be limited to sophisticated investors. Only shares issued on the market should be traded freely, because other shares (venture capital and private placements) are not supported by a regulatory framework that obliges issuers to provide information to the public.

### **Policy Capacity and Implementation**

Small countries often face challenges in implementing market-supporting legal and regulatory changes.<sup>29</sup> In Guyana, the Securities Industry Act was enacted in 1998, but was not put into operation until 2002 upon issuance of the regulations. In Mauritius, staffing needs have slowed implementation of key market supporting laws.

### **Infrastructure Need Not Be Sophisticated**

Low trading volume usually implies that sophisticated systems are probably not needed and resources could be spent elsewhere. The sophistication of infrastructure varies considerably across smaller economies and is not always related to the very wide spectrum of market volume. Sixteen smaller economy markets have less than \$20 million annual turnover and another nine are in the \$20 million to \$100 million range (Annex III). The fixed costs of setting up the basic components of a sophisticated secondary market infrastructure (trading platform and a CSD) are in the range of \$2 million to \$3 million, while maintenance costs can be \$200,000 to \$1 million.<sup>30</sup> These infrastructure costs likely exceed the efficiencies gained for the low-volume smaller economy markets. Thus, for these countries the infrastructure can be kept simple and the lack of a

sophisticated infrastructure should not be viewed as a constraint to market development.

Thus, a fixing session can be appropriate for thin markets. Under this approach, trading is on a periodic basis, at predetermined points in time—for example, once or twice a day or even once a week.<sup>31</sup> The frequency would depend on the trading volume of the market. This approach is quite inexpensive and fully supportive of low-volume trading. In Fiji, the number of trading sessions increased from three to five per week in 2003.

### **Investor Education**

Improving awareness on the role of the stock exchange can prompt potential issuers to tap equity markets. A lack of knowledge regarding equity financing enhances firms' reluctance to be listed on the exchange. In Sri Lanka, the stock exchange upgrades marketing activities toward companies and assists their listing processes. The stock exchange in Fiji also initiated seminars to educate potential investors.

### **Deep and Active Secondary Markets**

These secondary equity markets are active and formal. Equity financing in the form of initial public offerings (IPOs) is available for a wide variety of companies from a wide variety of investors, including small investors. The secondary market is a formal stock exchange with transactions facilitated by market makers and custodians. In Jordan and Sri Lanka, the primary markets are benefiting from active secondary markets.

### **Policy Strategy**

The increased sophistication and dynamism of markets means that market players are best suited to drive market deepening. The extra benefits are considerable: (1) the alternative source of financing for corporations provided by IPOs, (2) the continuous market discipline exerted on corporate management, (3) an exit for investors, (4) better portfolio performance for institutional and individual investors, (5) better systemic financial stability provided by the “spare tire” of equity financing, (6) synergies with other markets, and (7) greater capital inflows. Rather than trying to drive the reform of sophisticated markets, the most useful role of the authorities is to remove impediments and foster systemic stability. Often, the stock exchange itself can instigate market development, as in Kenya and Sri Lanka. Similarly, intermediaries can drive reform, as was the case in Jamaica.

<sup>29</sup>Carvajal and Elliott (2007) find a high correlation between the level of income of a jurisdiction and the level of implementation of the International Organization of Securities Commission's (IOSCO) “Objectives and Principles of Securities Regulation.”

<sup>30</sup>According to IMF experts, the costs for the components of a capital market infrastructure are (1) trading platform, including IT equipment for eight to 10 trading houses, \$1.9 million; (2) CSD, including a securities settlement system, \$1.4 million; (3) real-time gross settlement system, \$1.2 million; (4) automated clearing house, \$1 million; and (5) maintenance costs (consultancy and training of the involved staff at the capital market and the central bank), which can be about \$1 million, depending on transaction volume and the salary of qualified staff.

<sup>31</sup>This approach can be applied to other institutional markets such as those for commodities and metals.



At the same time, the authorities must take the lead to maintain systemic financial stability. In most cases, government intervention is not needed in the event that nonbank market players become insolvent, because their failure would not have systemic implications. However, broad market failures can have systemic implications, including through linkages with the banking system (Carvajal, 2006). Thus, the authorities should aim to ensure that the decisions of market players do not threaten systemic stability.

For many smaller economies, innovative approaches may be needed to foster equity financing. As discussed below, equity markets that are not developed enough to attract the capital of local large companies may serve the public interest better by targeting SMEs.

### **Information Disclosure and Corporate Governance**

Information disclosure will rest on balancing investor needs for information and the costs to issuers of regulatory requirements. A basic degree of transparency is required, whereas more sophisticated issues can be dealt with over time (for example, regulation of tender offers). The regulatory framework requires issuers to disclose key financial information, updated periodically. However, mandatory disclosure requirements for SMEs should be simpler, to reduce their costs of issuance. Publication of issuer financial information by the exchange itself, as in Jordan, can improve transparency. In Mauritius, the new Corporate Governance Code is seen as improving the governance of private companies. A “comply or explain” regime, under which companies are obliged to justify any deviation from corporate governance codes, is a possible alternative to a sophisticated corporate governance framework. The stock exchange in Kenya has also promoted improvements in corporate governance through the award program.

### **Individual Investors**

The involvement of individual investors in the stock market can boost market development. Sri Lanka promotes participation of individuals through various marketing activities via its unique branch network. In Jamaica, securities dealers have encouraged the participation of retail investors. More generally, an education program for potential investors, including the young generation, may be effective for expanding individual participants.

### **Pension Reform**

Pension fund reform poses tradeoffs for market development. A mandatory private pension system can vastly strengthen the institutional investor base for

equity and other markets, and has proved to help boost market development. At the same time, these pension funds can dominate the demand side and hinder secondary market liquidity with a buy and hold strategy, as was the case in Botswana, Chile, and Croatia. Further, for most smaller economies, restricting pension fund assets to be invested domestically may limit the portfolio performance with respect to investors, and potentially create asset bubbles. Hence, easing restrictions on the overseas investment of pension funds<sup>32</sup> helps promote domestic stability, as well as diversification of the fund’s portfolio.

### **Market Synergies**

Equity markets can benefit from the development of markets for bonds and other securities. The stock exchanges of Botswana, Croatia, Jamaica, Mauritius, and Sri Lanka trade bonds and government securities, thus allowing investors to diversify their investments in a single marketplace.<sup>33</sup> This would be assisted further through a common CSD that facilitates efficient settlement operations.<sup>34</sup> In Sri Lanka, other instruments, such as securities lending and derivatives, are also recognized as necessary ingredients to equity markets.

### **Market Associations**

Associations of market players can help set up a stock exchange and improve efficiency and stability as markets become more sophisticated.<sup>35</sup> Market associations established the forerunners of the stock exchanges in Kenya and Sri Lanka. The market association in Guyana runs the stock exchange.

### **Demutualization and Merger of Exchanges**

Demutualization of the stock exchange can help develop the market. Demutualization converts member-owned, nonprofit exchanges into profit-driven investor-owned corporations with a view to increasing access to capital, which can be invested in new technology and can strengthen corporate governance (Aggarwal and Dahiya, 2006; Elliott, 2002). The stock exchanges of Jamaica, Kenya, and Sri Lanka are considering

<sup>32</sup>This should be accompanied by proper prudential guidelines for such investments to avoid excessive risk taking and potential adverse social consequences.

<sup>33</sup>A single trading platform for equities and fixed-income securities is not necessarily common in developed markets. However, stock exchanges in developing countries often aim at the synergy effects, with government securities given underdeveloped OTC bond markets.

<sup>34</sup>For experiences in European exchanges in the context of regional integration, see Annex IV.

<sup>35</sup>See the discussion of market associations in the previous chapter.

demutualizing or are planning to do so. Issues raised by demutualization include the regulation of the new exchange, the distribution of shares, and the new governance structure. Differently, in Croatia, two domestic stock exchanges were merged into one in 2007, in order to achieve greater liquidity in equity markets.

### Intermediaries

Intermediaries that agree to continuously quote buy and sell prices can enhance market liquidity. The separation of banking from nonbanking activities in Jamaica led to the transfer of funds under management to securities dealers, which intermediated these funds into the stock market. Effective intermediation requires a sufficient degree of competition, which can be problematic in some of the smaller economies. High brokerage fees are cited as an obstacle to greater liquidity in some countries.

### Infrastructure<sup>36</sup>

Upgrading of infrastructure should be market-led. A very basic automated-floor-based system can work well for a simple market. Advances in technology have also made it more affordable for countries to begin with fully dematerialized systems. In Croatia, brokerages and members of the exchange are connected by special telecommunications links with exchange headquarters, facilitating dematerialized trading. The stock exchange in Jamaica has benefited from the book entry services of the central securities depository. The role of the government should be only to remove impediments or address potential systemic risk issues.

### Equity Market Regulation

A clear assignment of regulatory responsibility is important. A variety of equity market regulatory arrangements are in place in smaller economies. The stock exchanges of Guyana and Fiji are regulated independent entities whose members are appointed by the minister of finance. In Jordan, the institutional separation of the supervisory, legislative, and executive roles in 1997 facilitated market development. By contrast, the regulatory arrangements in some smaller economies are complex and ambiguous.<sup>37</sup> Harmonization of the work of different regulatory bodies helps eliminate regulatory arbitrage.

An incremental approach tailored to local circumstances is the best way for policies to help develop

equity markets. For most countries there is no need to jump to a high degree of market sophistication. Rather, policies should be guided by the needs of issuers and investors, with progress on different fronts.

Supervision must be tailored to ensure that market players do not threaten systemic stability. Nevertheless, smaller economy markets can be large enough to cause systemic problems, as in Costa Rica (Carvajal, 2006). Regulatory restrictions should be carefully considered, and removed if the benefits for market development outweigh the potential risks. These restrictions can apply to investment, portfolio allocation, and trading by market participants or limits to assume or hedge risks.

### Targeting Small and Medium-Sized Enterprises

Smaller economy stock exchanges face the risk that larger companies may cross-list with large exchanges in other countries. The cross-listing of firms is increasing around the world (Claessens and Schmukler, 2007). Cross-listing of corporations from emerging market countries tends to reduce liquidity in their home country stock market (Levine and Schmukler, 2006). Although cross-listing data are not available for smaller economy countries, the stagnant number of companies listed on most smaller economy exchanges, and the growing gap between capitalization and turnover of smaller economy stock markets with those of advanced and emerging market countries, suggests that there is a risk of significant cross-listing of large domestic companies.<sup>38</sup>

If this is the case, then smaller economy stock markets should consider focusing on local SMEs with a view to enhancing their access to financing by domestic institutional investors. Switching from large companies to SMEs may be the best way for smaller economy stock exchanges to maintain their viability and maximize their positive economic impact. This would require lowering the cost of issuance to attract SMEs by lightening the regulatory touch on information disclosure and corporate governance (Honohan and Beck, 2007).

Indeed, many smaller economies have set up second-tier markets with less-stringent listing requirements, but these have met with mixed success. Second-tier markets have less-costly listing requirements (a minimal degree of market capitalization, profits, governance, and information disclosure) to make them attractive to small and newer companies. Botswana, Ghana, Kenya, and Mauritius are examples of smaller economies with second-tier markets targeted at different types of companies, including SMEs, technology companies, and start-ups. In some cases, only sophisticated investors

<sup>36</sup>See Zervos (2004).

<sup>37</sup>Carvajal and Elliott (2007) find that weakness in implementation of IOSCO principles for low-income jurisdictions is observed particularly in the areas of cooperation (with domestic and foreign counterparts) and market intermediaries.

<sup>38</sup>Although median market capitalization and turnover across smaller economies have been growing, the median number of listed companies has barely increased (Annex IV).

that do not require the same level of protection as the average investor are allowed to purchase shares. Some of these markets have grown quickly, such as that of Mauritius, but others have not attracted many listing companies. Notwithstanding lighter listing requirements, establishing active second-tier markets for SMEs requires that the disclosure and governance practices of these listed companies be sufficiently robust to gain local investors. This requires a strong legal and regulatory infrastructure for issuers, which will be a challenge for many smaller economies.

It may be possible to involve stock exchanges in an innovative way with existing government-supported efforts to enhance financing for SMEs.<sup>39</sup> Botswana

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<sup>39</sup>For Slovenia, Andritzky (2007) advocates preserving a local capital market segment tailored to the needs of domestic issuers.

established the Citizens Entrepreneurial Development Agency, aimed at supporting SMEs with subsidized loans. Sri Lanka created a new specialized bank to finance SMEs, and the Central Bank of Sri Lanka continues to assist commercial banks to expand the micro credit programs to rural regions. Several European governments are working with banks to make possible securitization of SME loans (European Commission, 2007).<sup>40</sup> An open question is whether there may be a role here for stock exchanges, for example in facilitating the trading of securitized loans, or explicit government involvement in individual SME issuance.

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<sup>40</sup>In Spain, banks can package SME loans and pass them on to special-purpose vehicles, which are eligible for treasury guarantees for specific tranches.

## VI Regional Integration

**R**egional integration has the potential to deepen essential financial markets for many smaller economies. Regional integration encompasses arrangements that allow a market player from one country to conduct a market transaction with those in another country without additional expense. The success of regional integration can be gauged by the convergence of market prices across the member countries.

There are relatively few cases of longstanding regional integration projects on which to draw lessons, especially for smaller economies. Market integration of European Union (EU) countries is quite advanced and offers policy lessons. For smaller economies, a number of regional initiatives have emerged to date, mainly in the area of the exchange rate arrangement, monetary policy, and trade policy, but experiences in terms of financial market integration are mixed. The Baltic markets have integrated to some degree with those of the Nordic area. Market integration of WAEMU, the Central African Economic and Monetary Community (CEMAC), the Common Monetary Area (CMA) in southern Africa, the Common Market for Eastern and Southern Africa, and the Southern African Development Community have not always met expectations, as evidenced by divergent asset prices, but efforts are under way.<sup>41</sup> The Eastern Caribbean Currency Union recently established the Eastern Caribbean Securities Exchange and Regional Government Securities Market, but trading activities are still small. The Caribbean Community Single Market and Economy, Central America, and the Maghreb countries are in the early stages of integration. Introduction of cross-listing of smaller economy companies in the stock exchanges of other smaller economies can be viewed as nascent market integration. Annex IV includes case studies for the European Union, the Baltics, and Central America.

The following themes arise from the consideration of regional integration for smaller economies:

- Regional integration is generally a complement to rather than a substitute for local markets.

<sup>41</sup>WAEMU and CEMAC integration is addressed in Gulde and others (2006); CMA is discussed in Wang and others (2007); Maghreb countries are covered in IMF (2007a); and Shah and others (2007) assesses integration in Central America.

- Successful regional integration is market-led and in most cases has involved equity markets.
- Government intervention can be warranted when the interests of individual market players conflict with market integration.
- The preconditions for successful integration are regional economic and political linkages, developed and integrated banking sectors, already existing local markets, and political commitments to overcome vested interests.
- Smaller economies may be better off joining an already existing regional market, including large countries that have already realized the requisite scale economies, rather than trying to integrate small markets across countries, which often involves extensive negotiation and overcoming diseconomies of scale.

### The Potential Benefits of Regional Integration for Smaller Economies

Smaller economy market integration can alleviate diseconomies of scale. Regional integration enables smaller economy markets to attract more listings and boost trading volume and liquidity. Integrating small markets across the region is a potential policy option if the costs to develop individual markets in each smaller economy are deemed to exceed the envisaged benefits. Another option for smaller economies is to join existing neighbor regional markets or global financial centers. In either case, meeting local markets' demands is crucial for benefiting from the regional integration and for positive complementary effects on domestic financial markets.

For issuers, successful regional integration improves access to and reduces the cost of financing. By broadening the investor base, integration increases the number of potential investors and improves the stability of issuer financing. In addition, integration reduces the cost of raising capital by streamlining public offering and listing requirements, which has been the case in the Baltics.

Integration can improve the balance of investor risk and return. Risk diversification is enhanced by the intro-

duction of new countries, as well as by additional products and services. Thus, integration of varied national markets can overcome the high degree of concentration in many smaller economies that hinders domestic market development. The reduction in risk concentration will, in and of itself, enhance systemic stability. Return is enhanced by the availability of new investments, and by lower cross-border transaction costs.

Regional integration has the potential to bring smaller economies into global markets. The visibility of all the countries in the region to international investors is improved by active regional markets. Regional integration can motivate national reforms that would not have otherwise happened. Finally, regional integration can set in place a strong market-deepening dynamic whereby deeper markets attract more investors, greater economies of scale are realized, and more investors are attracted in a virtuous cycle.

Regional integration can also bring costs and potential risks. The loss of national decision-making power can reduce the effectiveness of policy responses to country-specific developments. If policies do not adjust, deeper and wider markets can potentially undermine systemic stability. The wide availability of the regional markets (through cross-listing, etc.) could prevent smaller economies' local markets from growing if appropriate domestic policies are not put in place. Finally, resources can be wasted if the preconditions for successful integration are not met.

### Preconditions: Strong Linkages and Potential Business Opportunities

Successful integration requires fundamental economic and political linkages that give rise to cross-border financial transactions. Trade integration is paramount, as evidenced by the euro area and the Baltics. Cross-country business relationships can also drive financial linkages, and in some cases a single company realizing economies of scale can support or even generate integration. In the Nordic and Baltic areas, one company owns all but one of the eight exchanges. Cultural and linguistic commonalities can help, but are not sufficient. Although a common currency will reduce trading costs, the market integration experience of common currency areas has so far been mixed.

A developed and integrated banking sector is another necessary condition for successful integration. Bank development precedes market development on a national basis and this sequence holds true for regional integration as well. Further, longstanding cross-border relationships between banks typically serve as a first step for market relationships. Strengthening the regional banking system is important for the further integration of the WAEMU and CEMAC areas and Maghreb coun-

tries, while the dominant presence of Nordic banks in the Baltics has facilitated that market's integration.

Successful integration requires that the aggregated market be of a sufficient quality and magnitude to be viable. Regional integration will be limited by local institutional deficiencies and small local markets. Thus, successful integration requires a critical mass of issuers and investors at the outset. Market participants must believe that there are business opportunities being missed by the lack of "connection" of the markets. For example, the stock exchange for the entire WAEMU, the Bourse Régionale des Valeurs Mobilières (BVRM), so far does not have sufficient volume and capitalization to make the costs of setting it up worthwhile, reflecting the limited number and size of market players within the region. Deeper financial markets will foster further integration of Maghreb financial markets.

Finally, political will is needed to overcome vested interests that impede regional integration. The influence of narrow vested interests whose rents would be wiped out by market integration can slow or stymie integration. For example, the creation of two independent stock markets in CEMAC reduces the total size of the potential market, in addition to diminishing the maximum size of each market by creating legal uncertainty for investors.

### Government Policies: Markets Lead and Governments Supervise

Successful regional integration generally is driven by the judgment of many market players that the benefits of integration exceed the costs. As discussed in the previous chapters, governments can play a crucial role in the early stages of the building of domestic markets. However, the complexity of regional integration leaves market players in a better position to judge whether integration will work or not. For example, stock exchange integration via common trading platforms and listing requirements, as in the Nordic-Baltic area, required no leading role for governments. Indeed, a single company has driven much of the integration in that region. In Central America, the private sector has in the past effectively tried to bypass the need for regulatory harmonization by finding solutions that at least in the first stage did not require regulatory intervention. Government-led integration efforts sometimes have not realized expectations because policies turned out not to meet market needs, or because preconditions were not fully in place.

Supervision and regulation is one area where governments do play the leading role. As markets linkages emerge, country supervisors can sign a memorandum of understanding (MOU) that spells out information sharing and other arrangements. In Europe, supervisors have signed MOUs regarding the supervision of Euron-

ext and Euroclear. A next step is the “recognition” approach, whereby each local regulator “recognizes” the framework of a foreign country, affording financial intermediaries and products authorized in the foreign country automatic authorization for participation in the local market. Recognition is based on an appraisal of whether the framework of the other country offers a level of protection similar to the local framework. Each regulator might want to supervise all activities carried out in its jurisdiction, but this might create an unnecessary burden for market participants. EU countries mainly employ home country supervision, while the host jurisdiction retains powers to take regulatory actions under certain cases. In the Nordic-Baltic area, supervisors have signed detailed MOUs.

The strengthening of linkages brings a need for a more comprehensive regulatory framework. There is no clear-cut answer as to what the threshold of the degree of integration is, but it should be gauged by “hard” evidence, such as financial instruments sold in many countries (cross-listing), common business ventures (for example, to develop common trading platforms), and feedback from the private sector on the cost of cross-border transactions. The framework should govern not just exchanges and investors but also issuers and intermediaries. In addition, a legal framework, including capital controls, needs to support cross-border financial activities without uncertainty and distortions. One approach is to agree on a minimum common set of requirements (usually defined by areas or topics) enforced by the home regulatory authority. Alternatively, the home country can supervise, but the host regulator by agreement is given scope to exercise certain limited powers. In many cases institutional arrangements are needed to enforce these arrangements, as the European Directives do. Again, cooperation and trust between national regulators is essential.

Most regional markets involve cooperation and linkages between local supervisors. The “single passport” concept of the EU exemplifies the approach of home supervision but with some authority given to the host supervisor. In the Nordic-Baltic area, regulators and central banks have signed a web of MOUs. The WAEMU and CEMAC zones each have a single central bank, similar market rules, and a regional supervisor, although application of regulations is not always perceived as evenhanded.

### Infrastructure Centralization

The infrastructure of most regionally integrated markets remains largely decentralized. A regional approach may allow some elements of financial infrastructure to be supplied at a much lower unit cost and others to become viable for the first time. Regionalization also increases the human and technical capacity to operate

and supervise a more sophisticated payment system. This implies that countries in a region act together to build up a common infrastructure that they would then share or to standardize and link their existing components. Such a regional infrastructure may enable intermediaries located in each participating country to sell and deliver their products and services anywhere in the region at no cost disadvantage with respect to their regional competitors.

The experience with the centralization of infrastructure has been mixed for smaller economies, with trading easier to link compared to clearing and settlements. In Europe, the trading of securities is done on a single platform and set of rules, and clearing is highly centralized. The settling of exchange trades, in contrast, is done on the books of several entities. The WAEMU stock exchange (the BVRM) has modern centralized trading and clearing systems. The Nordic-Baltic country exchanges use a common trading platform, thus providing one point of entry, but clearing and settlements are mostly done with domestic systems that are not compatible. Trading platforms may be easier to integrate because they can be purchased from a single vendor.

Government intervention can be appropriate when the interests of some market players conflict with those of the markets. Establishing centralized clearing and settlements requires overcoming the vested interests of owners of the various components who may not benefit from consolidation. Government intervention may be needed if the owners of infrastructure make decisions that impose excessive and unnecessary costs. For example, the profitability of some of the services provided by the large financial groups in the Nordic-Baltic area would be hurt by full integration. Fully integrated post-trading infrastructures would raise the value of their brokerage and asset management services but reduce the profitability of their custodian and correspondent banking activities. In a similar vein, the “vertical silo” model of European stock exchanges has led to complaints about high costs. In response, the Head of Internal Markets at the European Commission set out a voluntary code of conduct aimed at achieving interoperability. Conflicts can also arise when the central bank owns or oversees both payment systems and CSDs, which is the case in a number of smaller economies. Centralization also requires the establishment of the common legal, regulatory, and supervisory arrangements necessary to make the linked and shared facilities work smoothly and efficiently.

A common currency offers advantages to the centralized approach. Although trading instruments denominated in different currencies on the same platform is possible, clearing and settlement could be quite complex if the cash leg and the securities leg have to be settled locally. Further, a multicurrency setting may not work for money markets and foreign exchange markets if central banks are not willing to give up control.

# Annex I. Stylized Facts: Foreign Exchange Markets

This annex assembles stylized facts on foreign exchange markets in smaller economies and reports case studies with a view to providing a basis for the policy discussion in the main text. A lack of basic cross-country information is one of the central challenges to assessing foreign exchange market development policies in smaller economies. This annex aims to begin to fill this gap. Even the deepest and most liquid foreign exchange markets are a breed apart from other financial markets in that they are less efficient and do not reflect information on underlying fundamentals at high frequencies.<sup>42</sup> The information reported in this annex suggests that foreign exchange markets in smaller economies are even more different. The first part of this annex summarizes the stylized facts about smaller economy foreign exchange markets based on the limited data sources and case studies of eight smaller economy foreign exchange markets, and the second part is made up of the case studies themselves.

## Degree of Market Development

Foreign exchange markets are thin in smaller economies (Table A1.1). Foreign exchange market data are not available for most smaller economies, probably reflecting the informality of the markets.<sup>43</sup> The paucity of hard data can be seen as an indication of the underdevelopment of smaller economy foreign exchange markets. The data that are available indicate that foreign exchange market turnover to GDP for smaller economies is several times smaller than in emerging market countries, and orders of magnitude smaller than those of advanced countries. Further, the discrepancy is much larger when measured simply in dollar terms, which is the relevant metric for economies of scale.

<sup>42</sup>Even the most developed markets do not appear to be efficient and, at least at high frequencies, do not reflect information on the underlying fundamentals (Sager and Taylor, 2006; and Lyons, 2005).

<sup>43</sup>A systematic examination of smaller economy central bank websites and Financial Sector Assessment Program (FSAP) reports showed that official foreign exchange market turnover data are not available for most of these countries.

Also, a much smaller share of smaller economies report the existence of a forward foreign exchange market. All IMF member countries submit information for

**Table A1.1. Selected Countries: Foreign Exchange Market Annual Turnover**  
(In percent of GDP)

|  |         |
|--|---------|
| Smaller economies                      |         |
| Albania                                | 36.1    |
| Azerbaijan                             | 66.9    |
| Belarus                                | 44.0    |
| Bulgaria <sup>1</sup>                  | 4.3     |
| Ghana                                  | 55.3    |
| Guyana                                 | 17.0    |
| Jamaica                                | 68.8    |
| Serbia                                 | 10.4    |
| Zambia                                 | 7.9     |
| Emerging market countries <sup>1</sup> |         |
| Argentina                              | 112.5   |
| Brazil                                 | 129.5   |
| Chile                                  | 608.9   |
| Czech Republic                         | 222.9   |
| Hungary                                | 342.2   |
| Colombia                               | 172.8   |
| India                                  | 199.6   |
| Indonesia                              | 139.4   |
| Malaysia                               | 208.3   |
| Mexico                                 | 367.9   |
| Peru                                   | 90.1    |
| Philippines                            | 150.8   |
| Russia                                 | 451.2   |
| Saudi Arabia                           | 68.7    |
| South Africa                           | 660.7   |
| Taiwan Province of China               | 300.1   |
| Thailand                               | 322.8   |
| Turkey                                 | 118.9   |
| Advanced countries <sup>2</sup>        |         |
| Australia                              | 1,060.7 |
| Hong Kong SAR                          | 3,010.0 |
| Israel                                 | 401.8   |
| Korea                                  | 581.5   |
| Singapore                              | 2,035.1 |
| Sweden                                 | 984.6   |
| Switzerland                            | 1,472.2 |

Source: Bank for International Settlements (2004).

<sup>1</sup>Interbank.

<sup>2</sup>Reported by domestic dealers for 2004.

the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER). As part of their submission countries indicate "The existence of a forward exchange market" and in most cases they provide a brief description. About half of smaller economies report the existence of a forward foreign exchange market, compared with 90 percent of both emerging market and advanced countries.

Smaller economy foreign exchange markets have relatively weak market-supporting arrangements. Survey data on the foreign exchange markets of a large number of smaller economies are available in Canales Kriljenko (2004). The survey results show that, compared to emerging market countries, a lower share of smaller economies have the market-supporting arrangements of committees of market players, a code of conduct, and dealer systems (Figure A1.1). Of course, the causality goes both ways here: thin markets undermine the incentive for players to incur the cost of setting up the market-supporting arrangements, while weak arrangements undermine market development.

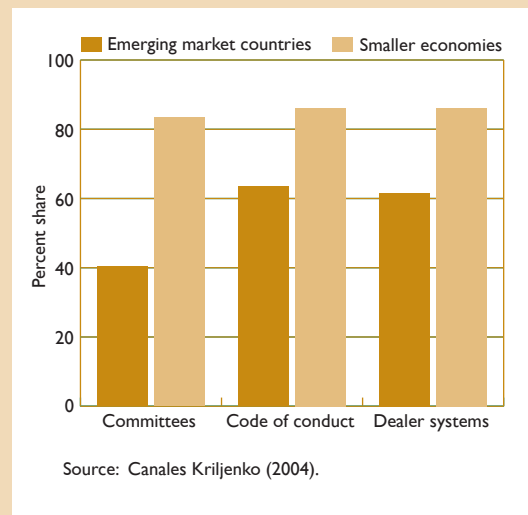
Smaller economy floaters have smaller median daily exchange rate movements (Figure A1.2). Exchange rate volatility for floating (managed float or independent float) exchange rate smaller economies and emerging market countries is compared by looking at the distribution of median daily exchange rate movements for the two country groups. The difference between the distributions of median daily exchange rate movements between smaller economies and emerging market countries is confirmed by Kolmogorov-Smirnov tests (Table A1.2). This outcome is rather a puzzle, because thin financial markets are typically associated with higher price volatility.

However, smaller economy floating exchange rate countries exhibit a relatively high share of days with large exchange rate changes. Compared to emerging market countries, the smaller economies have a much greater number of days with changes of more than 5 percent in the daily exchange rate (Figure A1.3). In this sense, smaller economies' exchange rate markets are more volatile. The greater incidence of large daily exchange rate changes may reflect the greater susceptibility of smaller economy countries to shocks owing to the high concentration of their economy.

### Potential Reasons for the Lack of Smaller Economy Foreign Exchange Market Development

The relatively small number of banks provides a likely explanation for the underdevelopment of smaller economy foreign exchange markets. The median number of smaller economy banks is only five, compared with 27 for emerging market floating exchange rate countries.

**Figure A1.1. Emerging Market Countries and Smaller Economies: Selected Foreign Exchange Market Aspects**



Foreign exchange market development is constrained by this small number of players, which also fosters collusion between the banks. In some countries there may be an informal understanding on the part of the banks, and even with the central bank, to limit exchange rate volatility, including by rationing (Table A1.3).

Official capital flows for smaller economies are significantly higher than private flows. For emerging market countries, private net capital flows are about

**Table A1.2. Kolmogorov-Smirnov Comparison Tests of Median Volatility of Daily Exchange Rate Movements for Smaller Economies and Emerging Market Countries**

| Year | Maximum Difference | Probability |
|------|--------------------|-------------|
| 2004 | 0.477              | 0.001       |
| 2005 | 0.441              | 0.006       |
| 2006 | 0.542              | 0.000       |

Source: International Monetary Fund.

Note: The null hypothesis is that distributions of the median volatility of daily exchange rate movements are the same between the two groups of countries. This hypothesis is rejected at the 1 percent level of all three years.



**Figure A1.2. Median Daily Exchange Rate Percent Change, Emerging Markets and Smaller Economies with Floating Exchange Rate Arrangements**

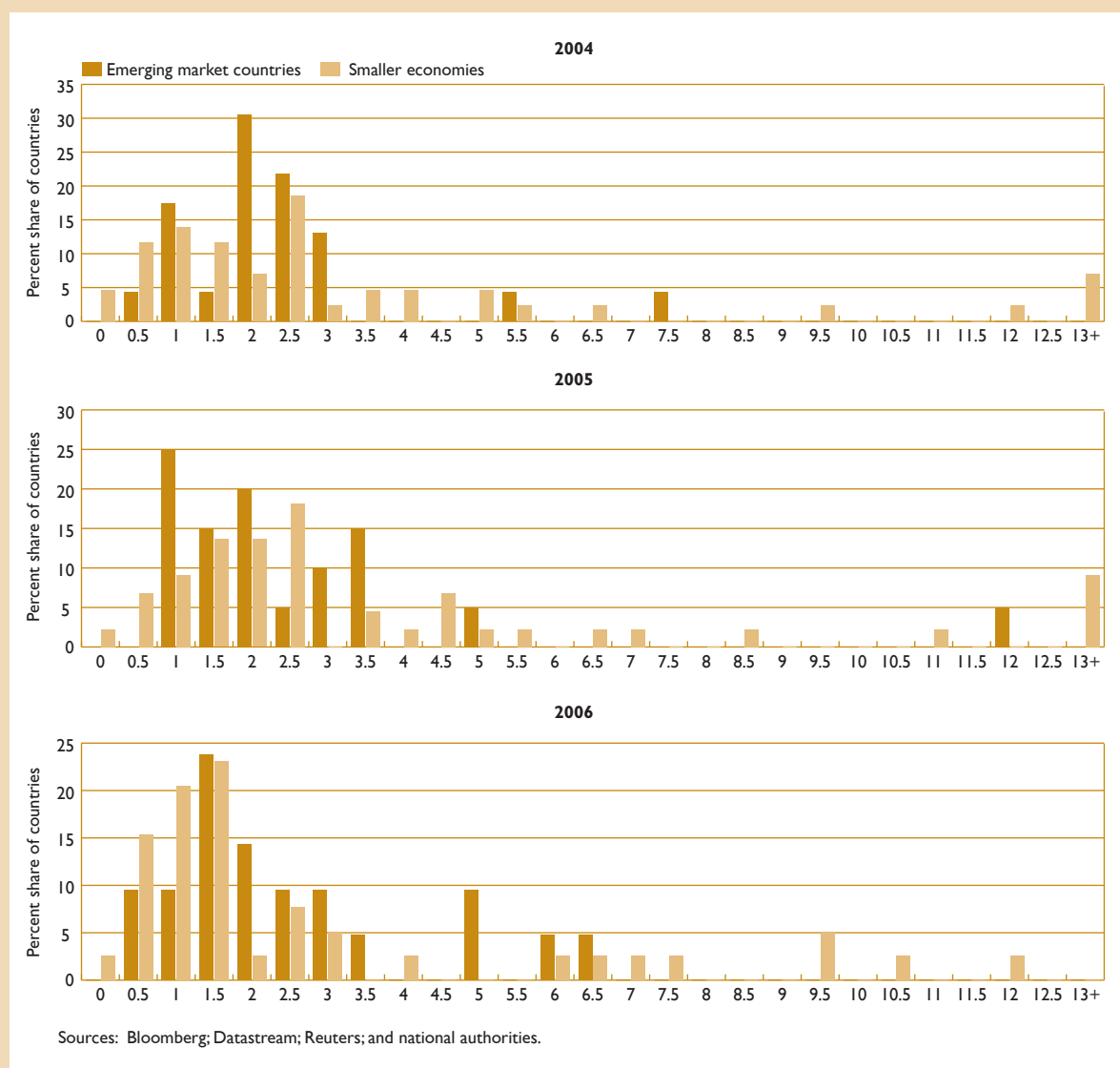


seven times official flows (Table A1.4), whereas this ratio is reversed for smaller economies. The low share of private capital inflows could help explain the thinness of smaller economy foreign exchange markets, because private capital flows are a key component of foreign exchange transactions and thus help drive foreign exchange market development.

Central banks dominate foreign exchange markets in many, and perhaps most, smaller economies. The case studies, IMF technical assistance reports, and FSAPs

indicate that central banks often dominate smaller economy foreign exchange markets by supplying most of the foreign exchange, and by dominating price setting. Central bank dominance can reflect structural factors, such as the dominance of official inflows, which are handled by the central bank and energy security (the central bank channels payments to oil importers). Central bank dominance can also reflect policy choices, including foreign exchange surrender requirements, the requirement that a dominant state-owned

**Figure A1.3. Maximum Daily Exchange Rate Percent Change, Emerging Markets and Smaller Economies with Floating Exchange Rate Arrangements**



exporter or state bank sells its foreign exchange proceeds to the central bank. In some cases, central banks impose informal restrictions on the determination of the market rate or exercise moral suasion.

### Case Studies

The following country case studies provide examples where active measures to establish an interbank market

have been successful.<sup>44</sup> The degree of market development differs among countries. In some cases, the interbank market structure has been successful in just enabling the central bank to reduce its role in distributing foreign exchange. In other cases, a move to full exchange rate flexibility has enabled the central bank

<sup>44</sup>These case studies are based on, in addition to specified references, various information sources including central bank websites, IMF Staff Reports, and unpublished papers at the IMF.

**Table A1.3. Smaller Economy and Emerging Market Floating Exchange Rate Countries: Number of Licensed Banks, 2004**

|                           | Median | Mean |
|---------------------------|--------|------|
| Smaller economies         | 5      | 9    |
| Emerging market countries | 27     | 36   |

Source: Micco, Panizza, and Yáñez (2004).

to fully remove itself from an intermediation role, and allowed for the emergence of forward instruments.

### Former Yugoslav Republic of Macedonia

Since enacting a new foreign exchange law in 2002, the former Yugoslav Republic of Macedonia has taken a series of measures to develop the foreign exchange market into a continuously traded interbank market system. Prior to the modernization of the foreign exchange market, Macedonia exhibited the distinct features of a shallow foreign exchange market: a significant role played by the central bank in intermediating and allocating foreign exchange, the absence of continuous interbank market trading, and a segmented market structure with four different exchange rates.

The development of an interbank market structure provided the benefits of a more liquid foreign exchange market and a more transparent price discovery mechanism. The elimination of market segmentation increased foreign exchange market liquidity and provided users with a more efficient price discovery mechanism. The commitment of market makers to providing continuous two-way prices strengthened the price discovery

mechanism further and allowed the central bank to discontinue its market-making activity.

### Current Market Structure

Macedonia implements a de facto conventional fixed peg against the euro, with a variation band of  $\pm 0.5$  percent.<sup>45</sup> The interbank market is organized around four banks that have signed an agreement to act as the central bank's market makers, which effectively transforms them into primary dealers of the central bank. This setup differs slightly from the typical market-maker agreement in which the interbank market is responsible for the setup of that agreement. These and other banks, which are not designated market makers by the central bank, trade on an electronic interbank platform. Market makers are requested to quote two-way prices for an amount of 350,000 euros at a maximum spread of 0.07 denar (MDen) among themselves. Against other banks, the central bank's market makers quote a maximum spread of MDen 0.25 for a minimum amount of 30,000 euros. The central bank meets demand and supply by intervening through its own market makers, while other banks conduct foreign exchange transactions through the central bank's market makers.

### Market Development

The first stage of the reform process focused on expanding the role of the interbank market in intermediating foreign exchange. Market segmentation was eliminated by the establishment of two main segments: (1) the interbank market, where the central bank and commercial banks could trade freely using electronic transfers between foreign exchange correspondent banks; and (2) the cash market, where banks and foreign exchange bureaus could trade with their nonbank

<sup>45</sup>The AREAER notes that the regime operating de facto is different from its de jure regime.

**Table A1.4. Capital Inflows of Emerging Markets and Smaller Economies with Floating Arrangements, 2000–06**

(Mean data; in percent except where noted)

|                   | Number | Ratio of Capital Inflows to Exports + Imports |      |                    | Ratio of Net Official Flows to Net Private Capital flows |         |                    |
|-------------------|--------|---|------|--------------------|--|---------|--------------------|
|                   |        | Median  | Mean | Standard deviation | Median   | Mean    | Standard deviation |
| Smaller economies | 40     | 10.3  | 15.4 | 13.0               | 69.6   | 2,053.0 | 8,038.5            |
| Emerging markets  | 22     | 14.8  | 15.1 | 8.3                | 14.5   | 109.5   | 320.1              |

customers and among themselves. To increase liquidity, corporations were encouraged to transact with the interbank market instead of transacting among themselves, thereby increasing interbank market liquidity by redirecting intercorporate flows into the interbank market. Furthermore, surrender requirements for export proceeds to the banking system were abolished, allowing exporters to freely trade and manage foreign exchange flows across time. The central bank reduced its role further by discontinuing its practice of informing banks about the direction of the net open position of other banks. Finally, interventions were conducted according to more market-oriented techniques, intervening at a market rate rather than an official rate.

The increased role of the banking sector in intermediating foreign exchange boosted turnover, particularly because of the shift of intercompany flows into the banking sector. Still, the interbank market continued to lack efficiency, and the role of the central bank remained more important than is typical in a developed foreign exchange market. In particular, market functioning was inhibited by a relative scarcity of foreign exchange, a lack of pricing transparency, and weaknesses in market-making commitment.

The second phase of the reform process targeted the market guarantor role of the interbank market versus the role of the central bank. To encourage banks to trade among themselves, the central bank (1) raised the minimum amount at which it stood ready to transact, thereby forcing banks to also transact small amounts in the interbank market, and (2) widened its bid and offer spreads vis-à-vis the spreads in the interbank market. Simultaneously, a group of banks were identified as the central bank's market makers and required to quote a minimum amount for a given spread. In return, the central bank committed to conducting its foreign exchange operations only through its market makers. The financial market infrastructure was upgraded to widen the dissemination of price and news information. Internationally recognized financial information and price systems, such as Reuters and Bloomberg, were more widely used, both by the central bank to disseminate information and by banks to provide two-way prices. In addition, the development of an electronic trading platform further increased pricing and trading efficiency.

### Policy Issues

- Redirection of intercorporate trading to the interbank market eliminated market segmentation and increased interbank market liquidity.
- Placing financial disincentives on trading with the central bank strengthened the interbank market-making function and helped the central bank reduce its market role.

- Improved financial market infrastructure—through the introduction of electronic trading—increased transparency and access to interbank market pricing.

### Iceland

The gradual diminution of the role of the central bank of Iceland has made possible a relatively high degree of market development for a small country. The establishment of an organized interbank foreign exchange market in 1993 allowed the central bank to gradually withdraw itself from a dominant market position, and eventually transform its role from a market maker to intervening only on its own initiative. Central bank participation is now exclusively focused on either directly influencing the exchange rate or dealing with special situations that are not directly related to monetary policy (e.g., to achieve a certain objective for foreign exchange reserves).

The formation of an interbank foreign exchange market supported a more market-determined exchange rate and a more efficient allocation of foreign exchange. The role of the interbank market as market guarantor enabled the central bank to discontinue the practice of continuously intermediating foreign exchange. The setup of a market-maker system that guaranteed continuous price quotes was an essential step in providing these benefits. The well-functioning spot interbank market, the absence of prominent central bank market activity, and exchange rate flexibility have encouraged the development of a forward market that has benefited banks' risk management capacity.

### Current Market Structure

Iceland operates an inflation-targeting framework with an independently floating exchange rate regime. Three financial companies act as market makers, governed by rules set by the central bank, which oversees the market. Market makers undertake to give indicative quotes for buying and selling rates for 3 million euros, and these quotes, which are made on Reuters, may be accessed by market makers. The central bank publishes a daily reference rate, established on the basis of a daily snapshot of the position of the market at about 10:45 a.m.

### Market Development

The interbank market structure was established in two steps (see Central Bank of Iceland, 2001). First, trading among authorized dealers initially took place in daily fixing meetings at the central bank. Second, fixing meetings were abolished and replaced by a market-making system in 1997. The fixing procedure was a significant first step in reducing the role of the central bank and moving toward a more market-determined

exchange rate. Still, activity was confined to the fixing meetings, and limited interbank activity outside of these sessions implied that the central bank continued to play a dominant role in providing continuous pricing of foreign exchange.

The need for a more visible and continuous price discovery mechanism became more apparent following the liberalization of capital flows between Iceland and the EEA in 1995. To create a more robust market structure with market guarantors, fixing meetings were replaced by a market-maker system, which placed firm obligations on market makers (initially only four banks) to provide two-way prices for a set minimum amount.<sup>46</sup> Market makers were also obliged to update quotes at intervals of at least 30 seconds. In return, market makers (along with the treasury) were made exclusive counterparties to central bank foreign exchange operations.<sup>47</sup>

The market-making system created a market structure that could provide a continuously traded market without relying on the central bank. Between 1993, when the fixing meetings were established, and 1997, when the market-making system was introduced, the central bank entered the market on 93 percent of business days and accounted for between 80 and 90 percent of total turnover in 1995. In the first year of the market-making system, the ratio of trading with central bank participation declined from 80 percent to just under 37 percent, and thereafter continued to decline to only 0.4 percent in 2006.<sup>48</sup>

Interbank market liquidity was further boosted by measures that increased the flow of foreign exchange and incentives for market participants to manage exchange rate risk. First, the completion of the liberalization process for capital movements between Iceland and the European Economic Area (EEA) in early 1995 triggered an important increase in the underlying source of foreign exchange. Second, while Iceland had already implemented a flexible fixed exchange rate system at the inception of the interbank market in 1993, the gradual widening of the horizontal bands to 9 percent, and, finally, the full floating of the exchange rate in

March 2001 increased the need for managing exchange rate risk more actively.<sup>49</sup>

The interbank foreign exchange market in Iceland is a small market, characterized by relatively low turnover and a small number of banks. In such a thin market, a few players can exert a great impact on market developments, and small trades can trigger significant market movements. When the central bank abolished the deviation bands and moved to a full float in 2001, the relatively concentrated interbank market coupled with initial uncertainty about managing exchange rate flexibility led initially to larger swings in the exchange rate. To encourage more competitive market behavior among the limited number of banks, the central bank introduced a commission-based market-making system, which rewards those who stand ready to always provide two-way prices that are competitive to the marketplace.

### Policy Issues

- The introduction of a market-making system provided the basis for a continuous foreign exchange market, enabling the central bank to withdraw from the market.
- Liberalization of capital flows with the EEA increased liquidity in the interbank foreign exchange market.
- Greater exchange rate flexibility contributed to increased market activity and the emergence of hedging instruments.

### Serbia

The establishment of an interbank market played a central role in the move toward greater exchange rate variability. The National Bank of Serbia (NBS), by gradually reducing its dominant market role, provided a favorable environment for the banking sector to develop an interbank market structure that could support more exchange rate variability alongside changes in the formal exchange rate regime.

The liberalization of foreign exchange market transactions was a key component in developing the interbank market. Freer banking sector access to foreign exchange boosted interbank market liquidity and made possible a continuous two-way market. The growth of the interbank market was highlighted by the June 2007 decision by the NBS to move from regular daily fixing sessions to holding sessions only when made necessary by foreign exchange market volatility. The phasing out of the fixing session was made possible by the significant increase in continuous interbank trading. In 2002, when the interbank market was first established, inter-

<sup>46</sup>At most, the number of interbank market makers reached six but has since declined to four.

<sup>47</sup>The status as a counterpart to the central bank tends to be highly valued by banks for several reasons: (1) it has a positive impact on the reputation of a bank and is used as a marketing tool for attracting other client flows, (2) they can earn a premium on the intermediation business, and (3) it provides private information about central bank flows. For a discussion on the value of private information see Lyons (2005).

<sup>48</sup>Since 1999, the central bank has operated exclusively within the policy objectives set by the inflation targeting regime or for purposes of strengthening its net foreign position. Transparency is a key aspect in the implementation of any operations (see Ísberg and Pétursson, 2003).

<sup>49</sup>The horizontal bands were widened from  $\pm 2.25$  percent to  $\pm 6$  percent in 1995 and to  $\pm 9$  percent in 2000 before fully floating the exchange rate in 2001.

**Table A1.5. Serbia: Foreign Exchange Market Turnover, 2002–07***(In millions of U.S. dollars unless otherwise indicated)*

| Period           | IFEM Session   |           |               | Interbank activity | NBS Turnover in IFEM (in percent) | Interbank Activity (excluding IFEM) | Net NBS- Foreign Exchange Bureau Turnover |
|------------------|----------------|-----------|---------------|--------------------|-----------------------------------|-------------------------------------|---|
|                  | Total turnover | NBS sales | NBS purchases |                    |                                   |                                     |   |
| 2002 (May–Dec.)  | 1,004.8        | 996.2     | —             | 8.6                | 99.1                              | 191.7                               | 752.7                                     |
| 2003             | 2,003.3        | 1,999.8   | —             | 3.5                | 99.8                              | 900.6                               | 1,356.9                                   |
| 2004             | 2,001.3        | 1,994.3   | —             | 7.0                | 99.7                              | 1,954.3                             | 1,847.9                                   |
| 2005             | 2,428.6        | 2,071.4   | 81.6          | 275.6              | 88.7                              | 2,513.7                             | 2,288.3                                   |
| 2006             | 1,999.3        | 915.7     | 661.0         | 422.6              | 78.9                              | 7,581.2                             | 2,172.1                                   |
| 2007 (Jan.–Apr.) | 647.3          | 628.7     | —             | 18.6               | 97.1                              | 5,303.8                             | 501.5                                     |

Source: National Bank of Serbia (NBS).

Note: IFEM = Central bank.

bank market turnover accounted for only 19 percent of the activity of the NBS fixing session. In the first four months of 2007, interbank market trading reached \$5.3 billion while foreign exchange traded through the fixing session accounted for only \$647 million (Table A1.5).

### Current Market Structure

Serbia has a managed floating regime with no pre-determined path for the exchange rate. The interbank market is organized around five to six banks that (implicitly) act as market makers, while approximately 10 to 12 banks regularly participate in the foreign exchange market (overall there are 30 banks). The standard ticket size is 1 million euros with a bid/offer spread of 10 percentage in points (pips). Following the removal of the daily fixing session, the main market segments are (1) the market between NBS and the (nonbank) foreign exchange bureaus, and (2) the over-the-counter interbank market. Spot market activity has developed significantly since the establishment of the interbank market, though the interbank market for foreign exchange forwards and swaps is less developed.

### Market Development

Exchange system liberalization was initiated with a new law in December 2000 allowing the exchange rate to be determined by the market. This was followed by a series of reforms to develop an interbank market structure that could support a market-based exchange rate system. The reform process was further emphasized following the expressed intent to gradually move toward an inflation-targeting framework for monetary policy, implying a move to a flexible exchange rate

system. A series of initiatives in the areas of foreign exchange regulation, interbank market structure, and trading infrastructure transformed the foreign exchange market to a system where the interbank market is increasingly setting the price for foreign exchange.

Further reforms in foreign exchange market regulation made it possible for banks and other entities to use and trade foreign exchange more freely. Between 2001 and 2002, authorities relaxed regulations governing foreign exchange transactions by (1) removing the requirement that banks had to surrender accumulated foreign exchange banknotes, (2) permitting citizens to freely accumulate foreign exchange, and (3) allowing banks to take foreign exchange positions guided by prudential limits on net open positions rather than foreign exchange controls. Furthermore, banks were free to quote their own exchange rates in the interbank market and to customers.

In parallel with the liberalization of the foreign exchange market, the technical infrastructure was upgraded with an electronic platform for the daily fixing sessions of the central bank (IFEM). This played an important role in developing a more transparent and efficient foreign exchange trading infrastructure. Furthermore, an electronic interbank information system (Reuters) facilitated transparency in interbank market pricing. These improvements in the technical infrastructure helped activate continuous interbank trading outside the fixing sessions, although the share of bank-customer trading remained the most important part of this activity for some time. Still, overall volumes increased and two-way quotations became more common.

Exchange rate variability was initially limited owing to the still-dominant role of the central bank in supplying foreign exchange. A commitment to gradually move

toward more exchange rate flexibility was signaled with the 2001 decision to move from an exchange rate peg to horizontal bands. Still, de facto exchange rate variability was initially limited owing to a series of regulations that limited the development of market forces. In particular, banks had practically no source of foreign funds outside of the fixing sessions because of the requirement to surrender foreign banknotes to the central bank.

However, exchange rate variability increased over time with the elimination of surrender requirements and continued changes in exchange rate variability and foreign currency regulations. The elimination of surrender requirements removed the imbalance in the foreign exchange market and made it possible for the NBS to reduce participation caused explicitly by the need to continuously supply foreign exchange. Meanwhile, the gradual move toward greater exchange rate variability helped establish conditions for a continuous and active interbank market. In particular, interbank market activity picked up significantly in 2006 in connection with increased exchange rate variability. Furthermore, while the capital account remains broadly controlled, the liberalization of longer-term transactions contributed to establishing underlying conditions for a two-way market.

The emergence of voluntary market makers was an important step in creating the interbank market structure for pricing and trading foreign exchange. Among the larger group of foreign exchange market participants, about five to six banks, which were mainly foreign banks, emerged as the main source of continuous two-way prices. This was an important first step in creating interbank market liquidity and is an indication that the entrance of foreign banks had a positive impact on market developments in Serbia. Still, further measures to improve interbank market liquidity are necessary. These are factors that are part of a market-driven deepening and include a more formal interbank market-making arrangement, an electronic interbank trading infrastructure, and voice or electronic brokers to increase market transparency.

However, the development of the foreign exchange forward market has been inhibited by the lack of a reliable indicator for pricing forward instruments. While forward transactions have begun on a small scale, these are mostly bank-customer-driven and an active and continuously traded interbank forward market has not yet emerged. This is essentially a consequence of the lack of a reliable money market yield curve owing to a shallow money market, which is an important source for pricing forward foreign exchange rates. The lack of a reliable pricing indicator creates uncertainty in the market-making function because it increases the risk of hedging positions in the interbank market. Furthermore, uncertainties around the existing rules and regulations concerning accounting, documentation, and reporting of forward transactions, and remaining

exchange restrictions may have contributed to the lack of development of the forward market.

### Policy Issues

- The development of an electronic infrastructure played an important role in providing the tools for market making and trading.
- Regulatory changes to allow foreign exchange to flow into the banking system were fundamental in establishing a more balanced two-way market that could operate with less frequent intervention by the central bank.
- A policy of allowing more exchange rate variability helped develop the market-based exchange rate system because banks were more free to set the exchange rate on the basis of supply and demand.
- Foreign exchange forward volume is restrained by the lack of a money market yield curve.

### Tanzania

Tanzania has made important progress in developing the interbank foreign exchange market since it was first established in 1994. The foreign exchange market is organized around market makers and governed by a set of guidelines established by the central bank. Central bank operating procedures and market intelligence gathering have been upgraded to support the market analysis process in a foreign exchange market organized around an interbank market.

The development of the interbank market provided important benefits to the foreign exchange market even though the central bank remains as market clearer. The interbank market supported the development of an increasingly market-determined exchange rate, which has raised the level of transparency for end users of foreign exchange. Still, most transactions are conducted between banks and their customers, and the markets rely on donor flows, thus placing the central bank at the center of the distribution process. This implies that the full benefits of a more liquid interbank foreign exchange market have yet to materialize.

### Current Market Structure

Tanzania pursues a de facto independently floating exchange rate regime.<sup>50</sup> The Bank of Tanzania intervenes in the market as a buyer or seller of last resort, without compromising the target on foreign exchange reserves. The foreign exchange market is characterized by two main segments: (1) the commercial bank sector, which is the larger of the two segments, consists of 28

<sup>50</sup>The AREAER notes that the regime operating de facto is different from its de jure regime.

banks, and dominates the interbank and corporate markets; and (2) about 60 bureaux de change, which conduct most of the cash-based retail business. Corporate demand is the main driver of foreign exchange volume, and bank-customer activity is estimated to be more than double the amount of interbank volumes.

### Market Development

The interbank foreign exchange market was initially established as an open outcry system organized by the central bank. Commercial banks and foreign exchange bureaux were invited to participate, with the latter group required to maintain a minimum deposit at the central bank as cover for their purchases. The interbank market gradually evolved by permitting trading outside of the central bank open outcry system and, once a competitive interbank market emerged, foreign exchange bureaux were excluded from interbank market participation.<sup>51</sup> At the early stages of market development, market functioning suffered from (1) the lack of a clear commitment to the provision of two-way prices by market makers, (2) strong seasonality in foreign exchange flows, (3) a heavy central bank presence contributing to market perception that limited exchange rate variability was desired (despite a freely floating exchange rate), and (4) a virtually nonexistent forward market.<sup>52</sup>

The market developed in line with the export sector and as a result of specific measures. Over time, seasonality in foreign exchange flows diminished as the economy became more diversified with flows relating to tourism, mining, and foreign direct investment becoming increasingly important in the foreign exchange market. Market functioning was reinforced by additional measures addressing the interbank market structure, in particular the need for (1) strict adherence to the Interbank Foreign Exchange Market dealing limits, (2) an increase in the number of banks with the Reuters dealing system, and (3) raising dealer qualifications and data reporting up to the agreed-upon standards.

Despite the more diversified foreign exchange flows and strengthening of the market structure, the central bank has continued to dominate. A particular aspect of the foreign exchange market structure in Tanzania is the reliance on donor flows, which places the central bank at the center of the major source of foreign

exchange supply. The method and tactics used for supplying donor flows play an important role for the capacity of the interbank market to develop independently and reduce its reliance on the central bank as a market clearer.

### Policy Issues

- The establishment of an open outcry system gradually developed into a continuously traded foreign exchange market.
- The implementation of trading rules, requirements on market makers, and the upgrading of the technical infrastructure strengthened interbank market functioning.
- Diversification of the underlying sources of foreign exchange reduced the seasonality of foreign exchange flows.
- Reliance on donor flows places the central bank in a continued dominant market role that necessitates the development of market-oriented techniques for the distribution of flows into the interbank market.

### Uganda

The interbank spot market can absorb routine transactions at low transaction costs without unduly affecting the exchange rate. Interbank market activity is guided by internationally compatible net open position limits, market makers that are committed to providing market prices for minimum amounts, and interbank market behavior that is enforced through a code of conduct. The formulation of a transparent framework for central bank sterilization and intervention operations has further supported activity in the interbank market.<sup>53</sup>

Market development has enhanced price discovery and transparency in central bank operations. Despite regular central bank participation in the interbank market (mainly because of the use of foreign exchange sales to sterilize domestic operations), the method of operation has been adjusted so that it is conducive to a market-determined exchange rate mechanism. Still, the lack of development of forward markets implies that market participants have not been able to build up a more efficient risk management capacity.

### Current Market Structure

Uganda implements a monetary aggregate targeting framework combined with an independently floating exchange rate regime. The interbank market is organized around 15 banks that are authorized to deal in foreign exchange subject to a regulatory requirement

<sup>51</sup>The exclusion of foreign exchange bureaux at the early stages of market development initially led to a significant reduction in the degree of competition in the foreign exchange market. The more sophisticated foreign exchange bureaux were thus encouraged to develop into nonbank financial institutions or even banks, possibly through mergers.

<sup>52</sup>Market participants perceived that exchange rate variations were subject to daily limits of  $\pm 2$  percent from the previous day's weighted average rate and that deviations from what was perceived as a "desirable" level would result in less support for covering their foreign exchange position with the central bank.

<sup>53</sup>Foreign exchange sales form part of central bank operations to sterilize the inflows under the Poverty Alleviation Fund expenditures financed by donor flows.



to adhere to net open positions limits, and an obligation to post continuous dealing prices on Reuters for a minimum amount of \$100,000. The Bank of Uganda participates in the interbank market for the purpose of sterilization or intervention. Interbank transactions have increased significantly over the past years, but remain a relatively small share of overall market turnover (about 17 percent in late 2005). Most transactions are in-house matching of customer orders and the central bank remains a regular counterparty in the interbank market.

### Market Development

The central bank dominated the market in the early stages of its development. Conditions for interbank market activity were limited by the connection of only a few banks to the electronic information system (Reuters), foreign exchange flows exhibited a lumpy pattern, and transactions were mostly bank-customer-oriented. Measures to move toward a unified interbank foreign exchange system included (1) eliminating multiple currency practices, (2) reforming exchange controls and procedures, (3) liberalizing documentation requirements, (4) transferring certain transactions to the interbank market, and (5) reforming the framework for monetary and foreign exchange operations.

The Ugandan Information Service (UIS), a Reuters-based information system, was developed to widen interbank market access to price information. This was a less costly complementary information system that made it possible for smaller banks to access the market on the same terms as larger banks, which had the financial capacity to subscribe to Reuters Dealing. With the introduction of the UIS, indicative prices were made available more widely on a real-time basis and market activity increased. The number of market makers committed to posting continuous prices grew to include 15 banks in 2005, having been dominated by four foreign-owned banks in 2002.

Significant attention was given to reducing the role of the central bank in the interbank market. At the early stages, the central bank dominated interbank market activity, accounting for more than 50 percent of foreign exchange purchases and significantly impacting market developments through its conduct of irregular but frequent operations. Concern about volatility, including intra-day volatility, or undue appreciations or depreciations of the exchange rate triggered regular central bank smoothing operations. Lack of transparency in central bank operations and the resulting lack of price discovery for participating banks caused uncertainty among interbank market participants.

Central bank actions were increasingly characterized by a clearer and more transparent separation of the objectives of foreign exchange operations. Different operating procedures were established for foreign

exchange sales to sterilize domestic liquidity conditions and interventions to affect the exchange rate.<sup>54</sup> The dual role in the market specifically required an operational structure that enhanced operational transparency and reduced the risk that confusion about the central bank's objectives might negatively impact market functioning. To avoid causing any undue impact on exchange rate developments and sending unwanted signals, sterilization operations were planned on the basis of liquidity forecasts, implemented with due consideration of the capacity of the foreign exchange market to absorb these operations, and made transparent through a schedule announced publicly on a quarterly basis. By making the conduct of sterilization transactions more transparent, interventions, which became less frequent along with improvements in market functioning, became more easily distinguished from nonpolicy operations.

The development of the interbank market structure and the reduction of the role of the central bank have put in place a foundation for the development of the forward market. Despite the progress made in the spot foreign exchange market, progress in developing an active and liquid forward market has been slower. Customer demand for forwards remains low, possibly owing to a lack of widespread understanding of forward instruments and their benefits, greater complexity of risk monitoring and accounting arrangements, or the absence of efficient pricing tools owing to a shallow money market. Still, an embryonic forward market has started to develop, with the largest banks showing a readiness to quote for maturities of up to two months.

### Policy Issues

- The reform of the exchange control system and liberalization of documentary requirements established the foundation for the modernization of the foreign exchange market.
- The requirement for market makers to post two-way prices created a continuous foreign exchange market and enabled the central bank to withdraw from market making.
- The development of a technical infrastructure increased market transparency.
- Greater transparency in central bank operations and the adoption of market-oriented techniques conducive to the specific purpose of operations removed confusion about central bank objectives.
- Development of forward markets appears to be constrained by a lack of understanding about the benefits of hedging instruments as well as the associated risk monitoring and accounting arrangements.

<sup>54</sup>Spot foreign exchange sales withdraw domestic liquidity and may be resorted to as an instrument to reduce (or remove) a structural surplus of liquidity (as opposed to foreign exchange swaps, which only have a temporary impact on liquidity).

## Annex II. Stylized Facts: Money and Secondary Government Securities Markets

This annex summarizes stylized facts on money and secondary government securities markets in smaller economies. Data on money markets are especially limited, although there is cross-country data on foreign trading of government securities. IMF (2005a) and Árvai and Heenan (2008) report country case studies for these markets.

### Money Markets

The available information suggests that smaller economies offer a narrower range of money market products and have a smaller turnover. Money markets are for uncollateralized domestic currency, cash, or derivatives and are usually dominated by banks. The available figures also suggest that turnover in smaller economies is but a fraction of that in other countries (Table A2.1). Further, overnight interbank cash transactions tend to be the main product in smaller economies, although some countries have longer maturities and repos, whereas others have trading derivatives (IMF, 2005a; and Lukonga, 2006). In contrast, advanced and larger emerging market countries usually have not only these products but also a variety of derivatives.

### Secondary Government Securities Markets

The number and turnover of smaller economy secondary government securities markets is growing, but lags far behind those of emerging market countries. Secondary government securities markets are relatively small and illiquid in smaller economies compared to those in emerging market countries. The Debt Trading Volume Survey of the Trade Association for the Emerging Markets (EMTA) appears to be the only cross-country data source for secondary trading in government securities.<sup>55</sup> These data, which are from

<sup>55</sup>The reported data encompass instruments issued by the national government, regional and municipal governments, agencies, and local corporations.

**Table A2.1. Selected Countries: Interbank Money Market Annual Turnover**  
(In percent of GDP)

|   |     |
|---|-----|
| Advanced countries                              |     |
| United Kingdom (2001)                           | 251 |
| Switzerland (2005) <sup>1</sup>                 | 176 |
| Emerging market countries                       |     |
| South Africa (2004)                             | 207 |
| Smaller economies                               |     |
| Cameroon  | 0.4 |
| Central African Republic                        | 0.0 |
| Chad  | 0.0 |
| Congo, Republic of                              | 0.3 |
| Equatorial Guinea                               | 2.4 |
| Fiji  | 13  |
| Gabon   | 0.1 |
| Ghana   | 53  |
| Guyana (2006)                                   | 25  |
| Kenya   | 63  |
| Malawi  | 42  |
| Mauritius                                       | 36  |
| Nigeria   | 12  |
| Tanzania  | 48  |
| Uganda  | 2   |
| West African Economic and Monetary Union (2002) | 6   |

Sources: Central bank websites; Lukonga (2006); and case studies.

<sup>1</sup>Money market funds.

a survey of major international broker-dealers, banks, and investors, will in most cases underestimate total market volume because they exclude the transactions of local banks and other entities. However, they capture the relative size of markets across countries and over time.

The following patterns emerge from the data:

- The number of countries with trading captured in the EMTA survey has trended slowly upward to 25 percent of all smaller economies in 2005 (Table A2.2).
- The volume of trading varies quite widely across countries (Figure A2.1).

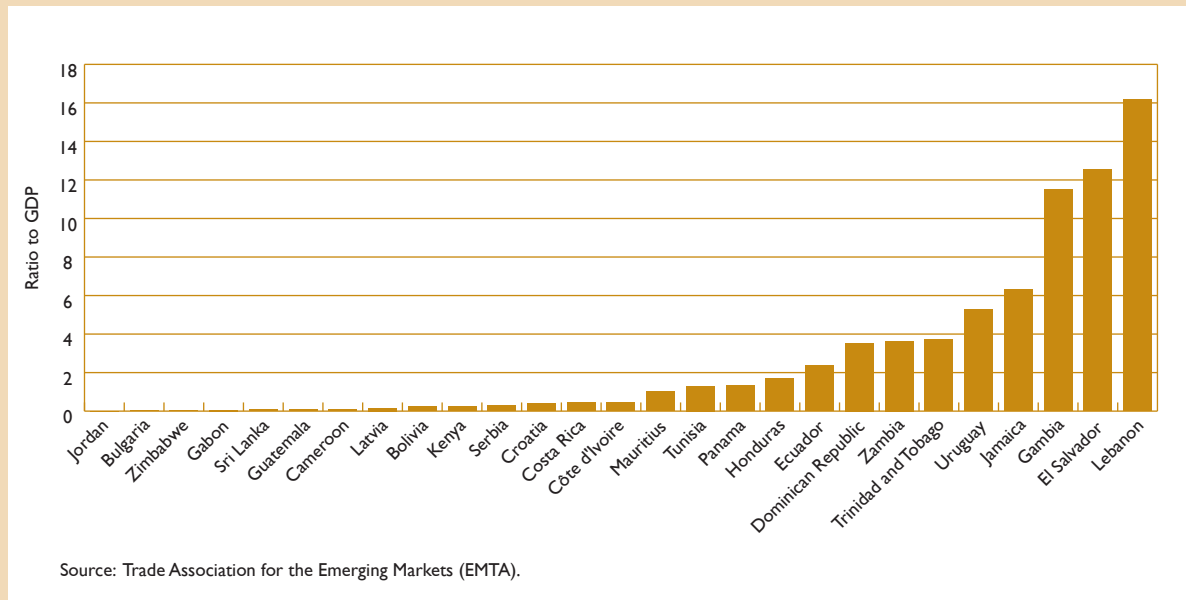
**Table A2.2. Government Securities Secondary Market Trading by Foreign Banks, 2001–05**

|                                   | 2000    | 2001      | 2002      | 2003      | 2004      | 2005      |
|-----------------------------------|---------|-----------|-----------|-----------|-----------|-----------|
| <b>Smaller economies</b>          |         |           |           |           |           |           |
| Countries with trading            | 21      | 19        | 20        | 21        | 20        | 27        |
| Total in millions of U.S. dollars | 2,966   | 2,624     | 1,415     | 5,868     | 12,082    | 11,242    |
| Total trading to GDP              |         |           |           |           |           |           |
| Median                            | 0.1     | 0.1       | 0.1       | 0.2       | 0.3       | 0.4       |
| Average                           | 0.9     | 0.7       | 0.4       | 1.3       | 2.5       | 2.5       |
| Bolivia                           | 0.0     | 0.5       | 0.4       | 0.4       | 0.5       | 0.2       |
| Bulgaria                          | 0.9     | 0.2       | 0.1       | 1.8       | 1.5       | 0.0       |
| Cameroon                          | 0.0     | 0.0       | 0.1       | 0.0       | 0.0       | 0.1       |
| Costa Rica                        | 4.7     | 6.1       | 2.4       | 1.0       | 0.2       | 0.4       |
| Côte d'Ivoire                     | 1.2     | 0.0       | 0.3       | 0.0       | 0.0       | 0.5       |
| Croatia                           | 0.2     | 0.3       | 0.1       | 0.9       | 0.0       | 0.4       |
| Dominican Republic                | 0.1     | 0.2       | 0.2       | 3.6       | 25.2      | 3.5       |
| Ecuador                           | 1.5     | 0.0       | 0.3       | 0.8       | 4.8       | 2.4       |
| El Salvador                       | 3.9     | 0.8       | 0.2       | 0.4       | 1.8       | 12.5      |
| Gabon                             | 0.0     | 0.0       | 0.0       | 0.0       | 0.0       | 0.1       |
| Gambia, The                       | 0.0     | 0.0       | 0.0       | 0.0       | 0.0       | 11.5      |
| Guatemala                         | 0.4     | 0.1       | 0.1       | 0.0       | 0.3       | 0.1       |
| Honduras                          | 0.0     | 0.0       | 0.0       | 0.0       | 0.0       | 1.7       |
| Jamaica                           | 6.4     | 3.5       | 4.8       | 4.4       | 6.5       | 6.3       |
| Jordan                            | 0.0     | 0.0       | 0.0       | 0.0       | 0.0       | 0.0       |
| Kenya                             | 0.1     | 0.0       | 0.0       | 0.1       | 0.0       | 0.3       |
| Latvia                            | 0.1     | 2.9       | 0.1       | 0.2       | 0.0       | 0.2       |
| Lebanon                           | 0.2     | 0.1       | 0.1       | 12.4      | 6.2       | 16.2      |
| Lithuania                         | 0.0     | 0.1       | 0.0       | 0.0       | 0.0       | 0.0       |
| Mauritius                         | 0.0     | 0.0       | 0.6       | 0.2       | 2.0       | 1.0       |
| Nicaragua                         | 2.5     | 0.4       | 0.4       | 2.7       | 3.1       | 0.0       |
| Panama                            | 0.5     | 0.2       | 0.2       | 0.1       | 4.9       | 1.3       |
| Serbia                            | 0.0     | 0.0       | 0.0       | 0.7       | 1.8       | 0.3       |
| Sri Lanka                         | 0.0     | 0.0       | 0.0       | 0.0       | 0.1       | 0.1       |
| Trinidad and Tobago               | 0.0     | 0.9       | 1.1       | 1.0       | 1.0       | 3.7       |
| Tunisia                           | 0.0     | 0.2       | 0.0       | 0.0       | 0.3       | 1.3       |
| Uruguay                           | 1.4     | 3.2       | 0.8       | 7.7       | 11.2      | 5.3       |
| Zambia                            | 1.1     | 0.0       | 0.0       | 0.0       | 0.0       | 3.6       |
| Zimbabwe                          | 1.1     | 0.2       | 0.2       | 0.0       | 0.0       | 0.0       |
| <b>Emerging market countries</b>  |         |           |           |           |           |           |
| Countries with trading            | 28      | 27        | 30        | 30        | 30        | 31        |
| Total in millions of U.S. dollars | 846,764 | 1,326,819 | 1,128,918 | 1,537,452 | 1,844,052 | 2,251,231 |
| Ratio to smaller economy total    | 0.35    | 0.20      | 0.13      | 0.38      | 0.66      | 0.50      |
| Total trading to GDP              |         |           |           |           |           |           |
| Median                            | 2.7     | 2.5       | 3.1       | 2.8       | 3.0       | 3.2       |
| Average                           | 9.1     | 14.3      | 13.4      | 14.7      | 15.5      | 19.1      |

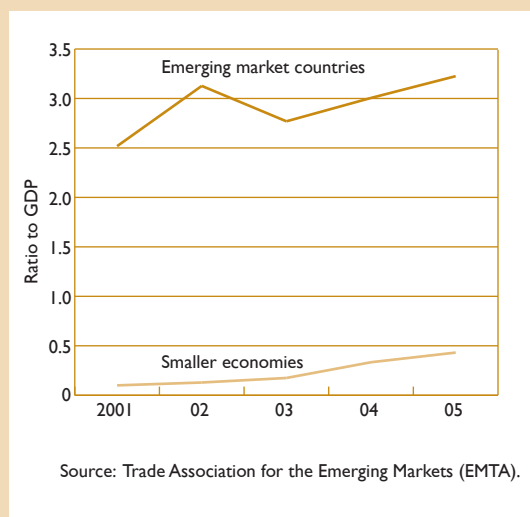
Source: Trade Association for the Emerging Markets (EMTA).

- The total amount of trading in U.S. dollars in smaller economy countries nearly quadrupled from 2000 to 2005.
- However, the amount of secondary market trading in relation to GDP looks lower than that needed to have an important economic impact.
- The amount traded in smaller economies is dwarfed by the amount traded in emerging market countries by a factor of 200.
- Further, emerging market country trading in terms of percentage of GDP is larger by a factor of 10 in comparison with smaller economies, indicating a larger economic impact in the emerging market countries.
- Finally, the turnover-to-GDP gap between the smaller economies and the emerging market countries widened between the year 2000 and the year 2005 (Figure A2.2).

**Figure A2.1. Market Turnover of Government Securities by Foreign Institutions**



**Figure A2.2. Market Turnover of Government Securities, Emerging Market Countries and Smaller Economies**



Country sources suggest that the share of trading is low relative to the outstanding stock (Árvai and Heenan, 2008; IMF, 2007c). The low turnover-to-stock ratio in smaller economies reflects the buy-and-hold strategy of institutions owing to excess liquidity and a lack of alternative investments.

## Annex III. Stylized Facts: Secondary Equity Markets

This annex summarizes the stylized facts on secondary equity markets in smaller economies. Generally, the empirical and descriptive literature on equity markets in smaller economies is extremely limited and thus there is little to draw on (Box A3.1). The first part of the annex summarizes cross-country data and key patterns, and the second part consists of nine case studies.

### Cross-Country Data and Patterns

Most smaller economies do not have formal secondary markets.<sup>56</sup> Only 43 of the 107 smaller econo-

<sup>56</sup>The data source with the broadest international coverage appears to be the Standard & Poor's Emerging Markets Database, which is reported by the World Bank.

mies have secondary stock market data reported by the World Bank, compared to 37 with the 43 emerging market countries (Table A3.1).

Standard market indicators indicate that those equity markets that do exist in smaller economies are considerably less developed than those in emerging market countries. The median market capitalization across smaller economies is less than half that of emerging market countries, and the median stock turnover ratio is some five times smaller for smaller economies (Table A3.1 and Figure A3.1).

Trading volume also varies considerably. Ten of the smaller economy markets have a total trading volume of less than \$10 million, while trading volume exceeds \$1 billion for four of the countries (Table A3.2).

Smaller economy equity issuance in the two largest international secondary equity markets is much lower than for advanced and emerging market countries

#### Box A3.1. Implications of the Literature for Secondary Equity Markets in Smaller Economies

The literature on equity markets in smaller economies is extremely limited. The literature generally suggests that the large emerging market and smaller economy companies rely more on external than internal financing compared with advanced country companies, use short-term debt as the main source of external financing, and use equity as the main source of long-term financing (Singh and Hamid, 1992; Singh, 1995; Glen and Singh, 2003; Mutenheri and Green, 2003). In particular, Yartey (2006) found that short-term debt is the main source of financing, with equity playing a small role.

Market turnover appears to have a bigger impact on economic growth than capitalization. This is one of the few conclusions of the limited number of studies of the impact of stock market development on growth. In a broad review of the literature, Levine and Zervos (1998) find that it is stock market liquidity rather than capitalization that facilitates long-run economic growth, which they attribute to liquidity serving as the better measure of the influence of the stock market on resource allocation. Adjasi and Biekpe (2006) analyze the effect of stock market development on economic growth in 14 African countries and conclude that it (1) operates through the value of shares traded

rather than market capitalization, (2) is significant only for upper-middle-income countries, and (3) is significant only for the countries with higher market capitalization.

Equity markets can also enhance financial stability by providing a “spare tire” for corporate financing. The role of financial breadth, or the availability of a broad range of financing alternatives to the corporate sector, is generally recognized as helping limit the impact of a crisis on the real sector. The large output contraction caused by the recent Asian crisis has been attributed in part to the lack of nonbank financing alternatives, whereas nonbank financing helped limit the impact of the slowdown of U.S. bank lending in 1990 that resulted from a collapse in the value of real estate collateral (Greenspan, 1999). Davis (2001) and Davis and Stone (2005) conclude that the existence of active securities markets alongside banks (“multiple avenues of intermediation”) is beneficial to the stability of corporate financing, both during cyclical downturns and during banking and securities market crises. These benefits increase in line with the size of the securities market and intermediated financing, and the proportion of companies with access to both loan and securities markets.

**Table A3.I. Smaller Economy Countries: Stock Market Indicators, 2005**

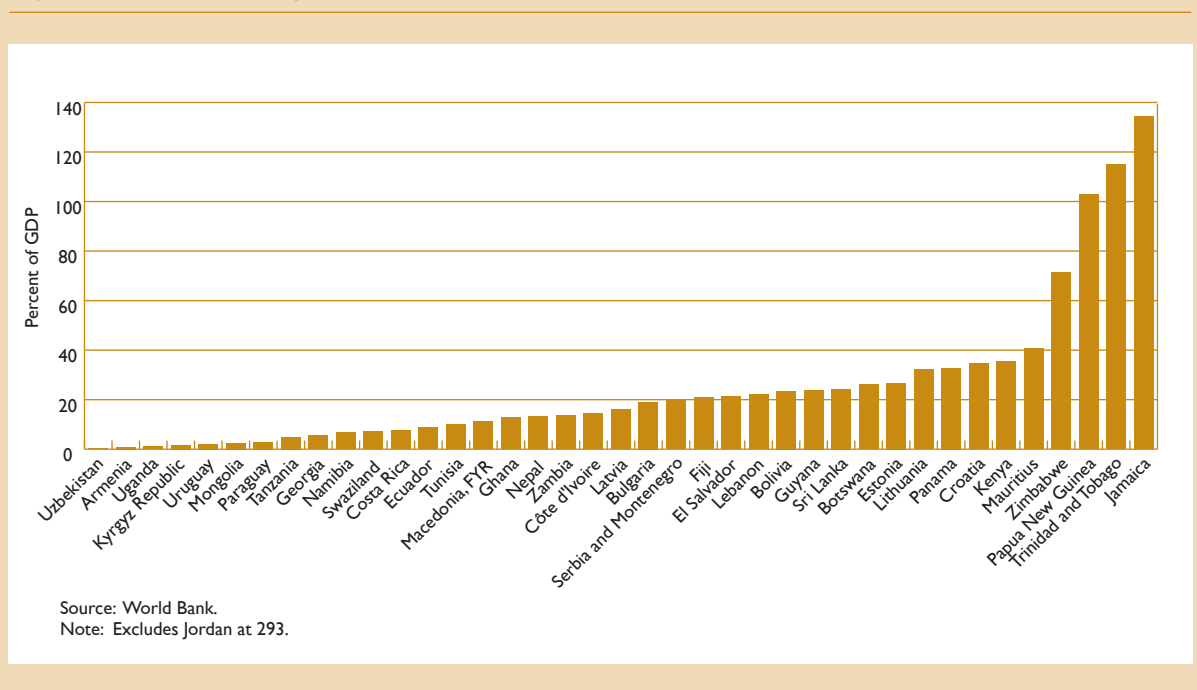
|                                       | Listed Domestic Companies, Total | Market Capitalization of Listed Companies (In percent of GDP) | Market Capitalization of Listed Companies (In billions of current U.S. dollars) | Stocks Traded, Total Value (In percent of GDP) | Stocks Traded, Total Value (In billions of current U.S. dollars) | Stocks Traded, Turnover Ratio (In percent) |
|---------------------------------------|----------------------------------|---|---|--|--|--|
| <b>Smaller economies (43)</b>         |                                  |   |   |  |  |  |
| Total                                 | 3,691                            |   | 163.0   |  | 35.0   |  |
| Median                                | 38                               | 17.6  | 2.4   | 0.5  | 0.1  | 4.6  |
| Average                               | 92                               | 31.6  | 4.1   | 6.4  | 0.9  | 15.0                                       |
| <b>Emerging market countries (37)</b> |                                  |   |   |  |  |  |
| Total                                 | 17,848                           |   | 5,398.0   |  | 3,563.0  |  |
| Median                                | 214                              | 39.2  | 40.2  | 8.5  | 16.4   | 26.9                                       |
| Average                               | 482                              | 61.5  | 145.9   | 30.2   | 96.3   | 50.6                                       |
| <b>Advanced countries (28)</b>        |                                  |   |   |  |  |  |
| Total                                 | 27,506                           |   | 37,374.0  |  | 42,978.0   |  |
| Median                                | 269                              | 97.3  | 365.5   | 75.8   | 366.8  | 80.3                                       |
| Average                               | 982                              | 119.5   | 1,334.8   | 95.2   | 1,534.9  | 88.3                                       |

Source: World Bank. *World Development Indicators*.  
 Note: Number of countries in parentheses.

(Table A3.3). Only 17 smaller economy companies are listed on the New York Stock Exchange (NYSE) and London Stock Exchange (LSE), and only a small number of smaller economy companies are listed on regional

stock markets, such as those in Singapore and South Africa. Most of the home countries of the listed companies are relatively large and advanced compared with the other smaller economies. Of course, the international

**Figure A3.I. Market Capitalization, 2005**



**Table A3.2. Smaller Economy Equity Markets: Trading Volume, 2005**

| Trading Volume                | Number of Countries |
|-------------------------------|---------------------|
| Less than \$10 million        | 10                  |
| \$10 million to \$20 million  | 6                   |
| \$20 million to \$100 million | 9                   |
| \$100 million to \$1 billion  | 12                  |
| Greater than \$1 billion      | 4                   |
| Total                         | 41                  |

Source: World Bank, *World Development Indicators*.

capitalization of these companies is likely quite large compared with the size of their local equity markets.

Anecdotal evidence suggests that many companies listed in smaller economy stock markets have a relatively small share “free float,” or traded shares as a proportion of total shares. For example, the three largest companies on the Botswana Stock Exchange have an average free float of only 27 percent, and the average float of the top 10 companies in Fiji is 33 percent, and is much lower for the top three. There is no minimum issuance or minimum float requirement in most of Central America, and the only country to require a minimum issuance amount for equity is Costa Rica (the equivalent of about \$2 million). There is very limited float in the Central America stock exchanges, including with respect to some of the largest listed companies.

Further, smaller economy secondary markets seem not to serve as a means of financing. Although cross-country data are not available for initial public offerings (IPOs) in smaller economy secondary stock markets,

**Table A3.3. Number of Listed Companies on New York and London Stock Exchanges, 2006**

|                                      | NYSE | LSE |
|--------------------------------------|------|-----|
| Advanced economies (26) <sup>1</sup> | 323  | 180 |
| Large emerging market countries (28) | 134  | 92  |
| Smaller economies (11)               | 3    | 14  |

Sources: New York Stock Exchange (NYSE) and London Stock Exchange (LSE) websites.

Note: All three companies on the NYSE are from Panama, and the LSE-listed companies are from Croatia, Estonia, Jordan, Kenya, Lebanon (two companies), Lithuania, Malawi, Panama, Tunisia, Zambia, and Zimbabwe (three).

<sup>1</sup>Number of countries that list at the NYSE or LSE.

reported information for Croatia, Guyana, and Mauritius indicate that IPOs are limited or nonexistent.

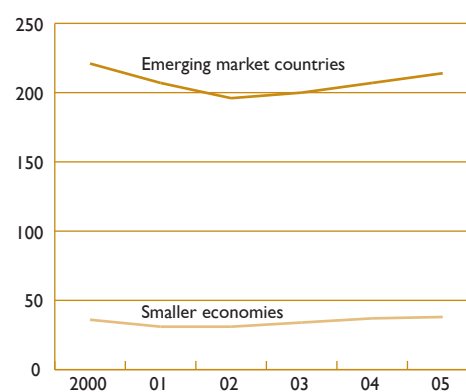
Importantly, stock market trading, whether measured as a share of GDP or with respect to market capitalization, is also much lower in smaller economies. Smaller economy and emerging market country secondary market prices also are more volatile (El-Erian and Kumar, 1995). This suggests that in smaller economies it is harder for investors to use secondary markets to exit, and the discipline exerted by secondary markets is relatively limited.

The trends over time of key stock exchange indicators for smaller economies suggest that they are not catching up with emerging market countries. The median number of listed companies across smaller economies rose by two from 36 in 2000 to 38 in 2005, while the median number of listed companies in emerging market stock exchanges actually dropped slightly to 214 (Figure A3.2). Meanwhile, the median across smaller economies of market capitalization rose from 10 percent of GDP in 2000 to 17½ percent in 2005 (Figure A3.3). However, the capitalization of emerging market country stock exchanges nearly doubled to 40 percent of GDP during the same period.

The median turnover-to-GDP ratio across smaller economies is stagnant and rapidly falling behind that of emerging market countries (Figure A3.4). The ratio is seen as a key indicator of the impact of the secondary market on the economy at large. This indicator is not only much smaller for smaller economies relative to emerging market countries, but it is stagnant, a trend

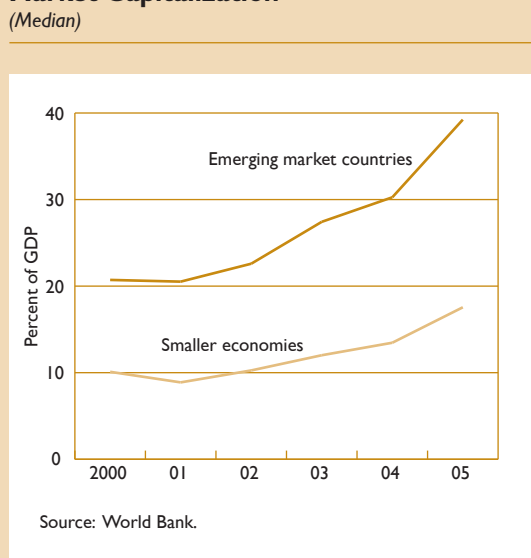
**Figure A3.2. Smaller Economies and Emerging Market Countries: Number of Listed Companies**

(Median)



Source: World Bank.

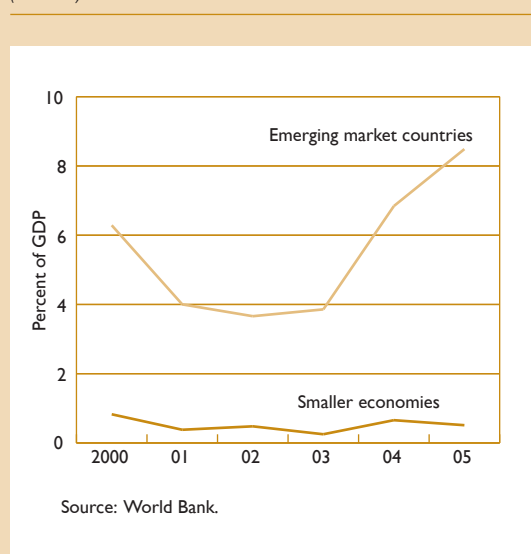
**Figure A3.3. Smaller Economies and Emerging Market Countries: Market Capitalization**  
(Median)



that is at odds with the worldwide deepening of domestic and international markets.

The presence of a market in smaller economies is related to the size and level of development of the economy. Less than a quarter of countries with a GDP

**Figure A3.4. Smaller Economies and Emerging Market Countries: Turnover**  
(Median)



**Table A3.4. Percent Share of Smaller Economies with Equity Market by GDP and GDP Per Capita**

|                                 | Share with Markets |
|---------------------------------|--------------------|
| GDP by quintiles                |                    |
| Less than \$800 million         | 13.6               |
| \$800 million to \$3.6 billion  | 23.8               |
| \$3.6 billion to \$6.8 billion  | 38.1               |
| \$6.8 billion to \$13.7 billion | 52.4               |
| Greater than \$13.7 billion     | 54.5               |
| GDP per capita by quintiles     |                    |
| Less than \$375                 | 13.6               |
| \$375 to \$625                  | 38.1               |
| \$625 to \$1,350                | 33.3               |
| \$1,350 to \$3,100              | 42.9               |
| Greater than \$3,100            | 54.5               |

Sources: IMF, World Economic Outlook database; and World Bank, World Development Indicators database.

of under \$3.6 billion have a secondary market, and less than a third of countries with per capita income of under \$3,100 have a stock exchange (Table A3.4).

## Case Studies

This annex provides case studies of the stock exchanges of 10 smaller economies.<sup>57</sup> They are mostly success stories and thus offer some positive policy lessons, and also serve to demonstrate some of the inherent constraints to market development in smaller economies.

### Botswana

Botswana's equity market has benefited from extensive government support but it remains relatively undeveloped (Table A3.5). The government's initiatives include reduction of government loans, establishment of the Botswana Stock Exchange (BSE), public pension reforms, and tax incentives (Bank of Botswana, 2006). However, the value of trades has declined in recent years, and the impact of the equity market on the overall economy is likely to be limited.

### Description of the Equity Market

Activity in capital markets in Botswana has picked up over the past decade. Commercial banks dominate

<sup>57</sup>These case studies are based on, in addition to specified references, various sources including annual reports of central banks and stock exchanges, other information on their websites, and IMF Staff Reports.



**Table A3.5. Botswana: Stock Market Indicators, 1995–2005**

|  | 1995  | 2000  | 2001    | 2002    | 2003    | 2004    | 2005    |
|--|-------|-------|---------|---------|---------|---------|---------|
| Market capitalization (millions of U.S. dollars) | 398.0 | 977.6 | 1,268.7 | 1,722.8 | 2,130.7 | 2,548.3 | 2,436.7 |
| Market capitalization (percent of GDP)           | 8.3   | 18.6  | 24.5    | 31.8    | 27.5    | 28.4    | 26.1    |
| Listed domestic companies                        | 12    | 16    | 16      | 18      | 19      | 18      | 19      |
| Trades, total value (millions of U.S. dollars)   | 38.0  | 47.3  | 65.0    | 55.3    | 86.8    | 50.2    | 45.1    |
| Trades, total value (percent of GDP)             | 0.8   | 0.9   | 1.3     | 1.0     | 1.1     | 0.6     | 0.5     |
| Turnover ratio (percent)                         | ...   | 4.8   | 5.6     | 5.0     | 4.4     | 2.3     | 1.8     |

Sources: World Bank; Botswana Stock Exchange.

Botswana's financial sector.<sup>58</sup> The rapid growth of pension funds and other government initiatives has broadened domestic capital markets. At the same time, the limited investment opportunities in domestic markets have compelled private fund managers to move a large part of their funds abroad, contributing to a sizable capital account deficit.

The BSE was established in 1989 with only five listed companies. The number of listed companies increased to 28 by end-2005, nine of which are foreign companies. The listed companies represent a wide range of economic sectors, including manufacturing, wholesale/retail, banking, medical services, property, security services, mining, tourism, and information technology. The BSE established the Venture Capital Board in 2001, a separate bourse for newer businesses with a short track record, and it now comprises six companies.

Capitalization has trended upward from the inception of the BSE. The Domestic Companies Index (DCI), the most widely watched price index, gained 74 percent during 2006. Accordingly, market capitalization rose by 77 percent to P 23.7 billion, constituting approximately 50 percent of GDP, which is high relative to other African stock exchanges.

However, the BSE remains illiquid. Even in the most active years there has been an average of only slightly more than 10 trades per working day, and turnover has actually declined in U.S. dollar terms over the past several years. This is partly due to limited free-float shares; the three largest companies on the BSE have an average free float of only 27 percent. On an aggregate basis, the free-float portion was just

under P 5 billion, of which pension funds held about half, at end-2005 when the total capitalization was P 13.4 billion. High brokerage fees are also cited as obstacles to greater liquidity.

Large institutional shareholdings are dominant, because the pension reforms (see below) have led to a large injection of funds in capital markets. For example, 90 percent of Sechaba, a brewery company with a relatively large free float of 58 percent, was controlled by only 25 shareholders. This suggests that the general public holds only a small percent of shares.

### Market Development Over Time

The Botswana government has employed various initiatives to develop capital markets. The strategy for financial sector reforms was first outlined in the Seventh National Development Plan (1991–97). This and subsequent initiatives have provided good support for development of the capital markets, although further efforts are needed for the markets to become deeper and more liquid (Kim, 2004).

### Reduction of Government Financial Arrangements

Botswana started its financial reform program by cutting back government financing. The government began to divest its interests in companies and require parastatals to rely on nongovernment financing. The establishment of the BSE in 1989 (originally as the Botswana Share Market) provided a secondary market for these privatized companies.

### Public Pension Reform

The introduction of the defined-contribution pension scheme for public officers in 2001 boosted capital market development (see Poddar, 2002). Pension claims equivalent to 27 percent of GDP were transferred to private fund managers. By 2006, their assets grew to

<sup>58</sup>The government has partly made up for shortfalls in bank lending in some areas, ranging from small enterprises to parastatal corporations. The Citizens Entrepreneurial Development Agency (CEDA) implements such programs aimed at supporting small and medium-sized enterprises by providing subsidized loans. Lending by the CEDA through August 2004 amounted to P 674 million (1½ percent of GDP) for use in more than 1,000 projects.

equal those of commercial banks. The funds have been partly invested in the domestic stock market, which boosted the BSE's DCI. However, with few investment opportunities in the local capital markets, investment abroad has significantly increased. As of end-2006, the pension fund's investment in Botswana's equity markets, Botswana's bonds (including the central bank's certificates), and offshore investments were P 5.4 billion, P 3.2 billion, and P 18.8 billion, respectively, out of total assets of P 29 billion. Offshore investment has therefore risen to 64.8 percent, approaching the 70 percent prudential ceiling.

### Tax Incentives

The authorities provide favorable tax treatment for companies listing on the BSE. These include an exemption from capital gains tax and lower income tax for listed companies. The double-tax burden on dividends was also abolished.

### Government Securities Market Reforms

The government has also taken steps to develop domestic bond markets, which in effect benefit capital markets as a whole. In 2003, the government issued two-year, five-year, and 12-year bonds with a total value of P 2.5 billion aimed at developing the domestic capital market, as opposed to fiscal financing. These bonds created a quasi-representative sovereign yield curve as a benchmark for private and parastatal issuers, and they were listed on the BSE in 2005.<sup>59</sup> The two-year bond was not rolled over and the five-year bond will be rolled over into securities of different maturities. Meanwhile, Botswana acquired investment-grade sovereign ratings by Moody's Investors Service and Standard & Poor's, which also provided a positive signal to potential investors both domestic and abroad.

### Infrastructure

Efforts are under way to upgrade market infrastructure. Establishment of a central securities depository is being considered by the BSE. In addition, new securities legislation, which is planned to replace the outdated BSE Act, will be aimed at facilitating the trading of all types of bonds on the BSE, introducing electronic trading, and streamlining requirements for BSE members. It will also strengthen provisions to deter market manipulation as well as insider trading. Further, a nonbank financial institutions regulatory authority came into

<sup>59</sup>In addition, new bonds were issued in 2004 by Debt Participation Capital Funding, a vehicle to securitize the government's loan book, and they are now listed on the BSE. This is also consistent with the strategy of developing capital markets, as well as of reducing government financial arrangements.

effect in late 2007 and was expected to become fully operational in 2008.

### Offshore Financial Center

The International Financial Service Center (IFSC) could also help attract more internationally oriented financial business. The IFSC was established in 1999 with a view to making Botswana the financial service hub for sub-Saharan Africa. IFSC-registered companies can operate a wide variety of financial services, such as foreign currency banking, securities trading, and investment advice, with a preferential tax regime. However, its development has been slow; only 31 companies had been accredited to the IFSC as of 2005, representing a total investment of about P 74 million. This is partly due to the high cost of infrastructure such as telecommunications.

### Privatization

In Botswana, privatization has not yet played a large role in increasing the supply of tradable corporate shares. The government unveiled the Privatization Master Plan in 2005, and this is expected to stimulate the growth of capital markets by making ownership of public institutions available to private investors.

### Policy Lessons

- The government financial sector development strategy has played a positive role.
- But at the same time, government initiatives alone cannot lead to successful development of markets.
- More diversified issuers and investors are necessary to realize active equity markets.

### Croatia

Croatia's equity markets boomed since 2005 but they are still underdeveloped compared with other central and eastern European emerging countries (Table A3.6). Market capitalization and trading surged significantly in a past few years partly owing to recent large IPOs. However, both market capitalization and trading are dominated by a small number of companies. The investor base is limited because only pension funds play a significant role in the recent surge in stock prices. In March 2007, two stock exchanges were merged into one aimed at greater liquidity in equity markets.

### Description of the Equity Markets

The Zagreb Stock Exchange (ZSE), established in 1991, has 145 listed companies, of which market capitalization amounted to 68 percent of GDP in 2006. The ZSE merged with the smaller Varazdin Stock Exchange

**Table A3.6. Croatia: Stock Market Indicators, 1995–2005**

|  | 1995  | 2000    | 2001    | 2002    | 2003    | 2004     | 2005     |
|--|-------|---------|---------|---------|---------|----------|----------|
| Market capitalization (millions of U.S. dollars) | 581.0 | 2,742.4 | 3,318.6 | 3,975.6 | 6,125.6 | 10,958.6 | 12,918.0 |
| Market capitalization (percent of GDP)           | 3.1   | 14.9    | 16.7    | 17.4    | 21.3    | 31.9     | 34.5     |
| Listed domestic companies                        | 61    | 64      | 62      | 66      | 66      | 145      | 145      |
| Trades, total value (millions of U.S. dollars)   | 47.0  | 188.2   | 117.5   | 146.5   | 237.4   | 494.1    | 798.2    |
| Trades, total value (percent of GDP)             | 0.2   | 1.0     | 0.6     | 0.6     | 0.8     | 1.4      | 2.1      |
| Turnover ratio (percent)                         | 8.2   | 7.4     | 4.0     | 3.8     | 4.8     | 5.9      | 6.7      |

Source: World Bank.

(VSE) in March 2007. The largest two companies account for more than 20 percent of total capitalization. Liquidity has greatly improved as trading value to GDP increased to 2.1 percent in 2005. However, this is substantially lower than in neighboring stock exchanges, such as Warsaw (trading value to GDP of 106 percent), Budapest (31 percent), and Prague (26 percent). Furthermore, market turnover is also dominated by a few companies, with the largest five companies representing 56 percent of total stock turnover.

Corporate financing through capital markets is quite limited. Despite a recent increase in IPOs and new bond listing, the capital market continues to play a lesser role in corporate finance than banks. In 2005 the ZSE saw four equity public offerings with a value of HRK 231 million, while there have been a total of only 19 equity public offerings since 1998. The bond market at the ZSE is also very thin and dominated by government securities.

### Market Development Over Time

Although the ZSE has an advanced trading infrastructure, developments have been limited owing to the small investor base.

### Trading Infrastructure

Trading at the ZSE is conducted through an electronic trading system. The brokerages and members of the exchange are connected by special telecommunication links with the exchange headquarters through which they enter their sell or buy orders directly from their offices. There is no single physical place, a traditional trading floor, where trading is conducted.

### Investment by Pension Funds

The tight limits on overseas investment by pension funds have led them to invest in domestic markets. Pension assets grew by HRK 3.9 billion in 2005, of which HRK 2.5 billion was invested into domestic

equity and bond markets. This contributed to the recent sharp increase in local stock prices. The authorities have started to relax the limits on foreign investment by pension funds.

### Merger of Exchanges

As stated above, Croatian equity markets were finally unified in March 2007. The VSE closed its doors and was merged with the ZSE. Because stocks are traded at the single and central marketplace, market participants are able to observe a single trading price for each stock, which will enhance price transparency. It is also expected that the joining of the two order books will promote greater liquidity in the long run.

### Policy Lessons

- Pension funds with a regulatory focus on domestic investment have had a large impact on local stock prices. Though recent events such as large IPOs and the relaxation of investment rules for pension funds are encouraging, a broader investor base is required to sustain expansion of the markets with deeper economic impact.
- Markets can benefit from an advanced trading infrastructure, which has yet to be fully materialized.

### Estonia

Estonia provides an instructive case for regional integration of capital markets. The integration has been achieved with neighboring Baltic countries with similar market development (Table A3.7). Also, this is a part of the larger regional integration among Nordic and Baltic stock exchanges owned by the OMX group.<sup>60</sup> While both markets are currently operated separately owing to

<sup>60</sup>OMX is a private firm that is expert in the exchange industry, operating the exchanges in the Nordic and Baltic region. It develops and provides technology and services to companies in the securities industry around the world.

**Table A3.7. Estonia: Stock Market Indicators, 1997–2005**

|  | 1997    | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    |
|--|---------|---------|---------|---------|---------|---------|---------|
| Market capitalization (millions of U.S. dollars) | 1,101.0 | 1,846.0 | 1,482.6 | 2,429.9 | 3,790.4 | 6,202.6 | 3,495.1 |
| Market capitalization (percent of GDP)           | 22.3    | 33.7    | 24.8    | 34.5    | 41.2    | 55.2    | 26.7    |
| Listed domestic companies                        | 27      | 23      | 17      | 14      | 14      | 13      | 15      |
| Trades, total value (millions of U.S. dollars)   | 1,484.0 | 326.3   | 219.7   | 241.3   | 564.2   | 827.7   | 2,478.2 |
| Trades, total value (percent of GDP)             | 30.0    | 6.0     | 3.7     | 3.4     | 6.1     | 7.4     | 18.9    |
| Turnover ratio (percent)                         | ...     | 18.9    | 13.6    | 14.9    | 18.3    | 17.5    | 51.1    |

Source: World Bank.

a significant difference in development, the long-term goal of the Baltic Market is to merge with the Nordic Market, consisting of exchanges in Denmark, Finland, Sweden, and Iceland.

### Description of the Equity Markets

Estonia's equity market has recently expanded robustly. The rapid rise of the stock index OMXT in the Tallinn Stock Exchange slowed in 2006, reflecting global corrections, but the market still maintains its strong momentum owing to the growth potential in the Baltic region. The average daily turnover of transactions on the stock exchange has also continued to be high, reaching EEK 39 million in 2006. However, turnover has been dominated by the shares of a limited number of companies, such as Tallink, a shipping company, and AS Eesti Telekom.

The stock capitalization amounted to 26 percent of GDP, as of the end of 2005. Nonresident investors, mainly European and some U.S. participants, account for a large part of the capitalization; the share of nonresident holding dropped in 2005<sup>61</sup> after peaking at 87 percent in 2004, but still remained at about 60 percent in 2006. Among domestic investors, financial and nonfinancial sector companies play a primary role, representing 34 percent of the capitalization, but retail investors account for only 4 percent of the total value.

### Market Development Over Time

Estonia's stock exchange, established in 1996, took an important step with Latvia's and Lithuania's markets to provide regional integrated stock markets. In 2004, the Tallinn Stock Exchange (Estonia), the Riga Stock Exchange (Latvia), and the Vilnius Stock Exchange (Lithuania), all of which are owned by OMX group, jointly established the Baltic Market. This promotes

greater interest and opportunity for investment in the region as a whole by enabling investors to transact and settle financial products seamlessly between the three countries. It also helps companies raise capital across the region.<sup>62</sup> Further, the Baltic Market provides investors with access to more than 80 percent of trades in other larger OMX exchanges in Denmark, Finland, Sweden, and Iceland.

The integrated Baltic Market has continued to take measures to upgrade capital markets in the region. In 2006, a Baltic Fund Center started to provide investment fund performance information in all Baltic countries. This has enabled investors to compare investment funds and fund-management companies. In order to increase the presence and credibility of the Baltic Market, the Baltic Market Awards were introduced in 2006, highlighting best practices among listed companies and member brokers. Looking forward, the Baltic Market plans, among other things, to implement an Alternative Securities Market targeting small and medium-sized companies with lower entry requirements.

### Policy Lessons

- Regional integration can work to develop smaller economies' equity markets, although its success would depend on history in the region, the degree of development of each member's market, and a comprehensive strategy.
- Initiatives and motivations by an owner of exchanges are key for market-led developments.

### Fiji

Fiji's equity market is quite small and illiquid, and has a high degree of market concentration (see Mala and White, 2006) (Table A3.8). The number of listed compa-

<sup>61</sup>This was due to the buyback of Hansabank shares, one of the largest listed companies in the Tallinn Stock Exchange.

<sup>62</sup>In 2006, the Olympic Entertainment Group's stocks began to be traded simultaneously in Estonia, Latvia, and Lithuania. This is the first case in the Baltic Market.

**Table A3.8. Fiji: Stock Market Indicators, 1996–2005**

|  | 1996 | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  |
|--|------|-------|-------|-------|-------|-------|-------|
| Market capitalization (millions of U.S. dollars) | 82.0 | 243.9 | 121.4 | 372.7 | 433.0 | 538.7 | 586.7 |
| Market capitalization (percent of GDP)           | 3.9  | 14.8  | 7.5   | 20.6  | 19.3  | 20.6  | 20.9  |
| Listed domestic companies                        | 4    | 10    | 14    | 15    | 15    | 16    | 16    |
| Trades, total value (millions of U.S. dollars)   | 0.3  | 8.1   | 1.9   | 3.4   | 2.5   | 7.8   | 4.5   |
| Trades, total value (percent of GDP)             | 0.0  | 0.3   | 0.1   | 0.2   | 0.1   | 0.4   | 0.2   |
| Turnover ratio (percent)                         | 0.4  | 3.3   | 1.6   | 0.9   | 0.6   | 1.4   | 0.8   |

Sources: World Bank; Mala and White (2006).

Note: The increase in market capitalization in 2002 resulted from the listing of a large telecom company.

nies remains small and liquidity is fairly low. Fiji faces formidable challenges to develop its equity markets.

### Description of the Equity Markets

The Suva Stock Exchange (SSE) was established in 1996. The establishment of the Capital Market Development Authority (CMDA), the market regulator, in 1997, helped development of the equity market through licensing intermediaries and enhancing disclosure requirements. In 2000, the SSE was renamed the South Pacific Stock Exchange (SPSE) to foster listing and investing opportunities elsewhere in the South Pacific. Currently, there are 16 companies listed at the SPSE with a market capitalization of \$586 million, or approximately 20 percent of GDP. The number of trading sessions has increased from three (Mondays, Tuesdays, and Thursdays) to five per week since 2003.

Market liquidity at the SPSE is quite low. This may be attributed to the limited flotation of listed shares. For example, Amalgamated Telecom Holdings (ATH), the largest company at the SPSE, has only 0.3 percent of its total shares available for trading on the exchange. Also, the SPSE is a highly concentrated market with most of its activities centered on a few listed companies. Only five companies account for nearly 70 percent of market capitalization of the SPSE. In addition, many investors employ a buy and hold strategy.

Low SPSE liquidity also reflects the dominance of family-owned companies and easy availability of bank finance. The majority of businesses in Fiji are family-owned companies that are reluctant to dilute ownership and hesitant to disclose information to the public. It is also fairly easy for companies to obtain bank loans owing to excess liquidity. Even start-up companies can finance themselves through their own savings and borrowing from parent companies.

### Market Development Over Time

The government has formulated various strategies, recognizing the development of the stock market as the engine for economic growth, but many challenges still remain.

### Trading infrastructure

The number of sessions was increased from three to five weekly in 2003 in response to an increase in trading. But further upgrades of the trading system, such as introduction of an electronic automated system, may not be justified at this moment given the small number of listed companies. In addition, the location of the SPSE could be changed to a more suitable place for ensuring easy access by financial institutions.

### Tax Incentives

Listed companies are exempted from paying taxes on dividends. There are no other tax incentives to encourage equity investment.

### Privatization

The privatization of ATH in 2002 more than doubled SPSE capitalization. Nevertheless, market liquidity remains low, reflecting ATH's very limited free float. The privatization has also caused market concentration to accelerate.

### Public Awareness and Education

A lack of public awareness regarding the role of the stock exchange and the benefits of equity investment has likely inhibited market development. Unlisted companies cite a lack of knowledge among potential investors as a key impediment to listing at the SPSE. The CMDA and the SPSE have been initiating some con-

certed efforts through public seminars, but they appear to be insufficient to date in light of the challenges posed by Fiji's diversity and geographical dispersion.

### Policy Lessons

- Limited flotation of shares and market concentration constrain market development.
- Privatization of large state companies can boost market capitalization but not raise market liquidity.
- The dominance of family-owned companies and the availability of bank finance have impeded market development.

### Guyana

The Guyana Stock Exchange (GSE) is quite underdeveloped (Table A3.9). Although the market has grown considerably in its first three years of existence, it remains quite small with limited economic impact.

### Description of the Equity Markets

Only over-the-counter transactions are conducted on the GSE and volume is quite low, thus the economic impact is quite limited. The Guyana Association of Securities Companies and Intermediaries (GASCI) is a "self-regulatory organization" that runs the GSE. Only the four brokers who are both registered with the GSC and are members of GASCI are permitted to trade directly on the stock market, but anyone may place an order with a broker to buy or sell stocks and shares. There do not appear to have been any IPOs conducted via the GSE. As of May 2007, the GASCI Official List included one company and the Secondary List included 13 companies. The number of registered companies and trading volume are very low.

### Market Development Over Time

Trading on the Guyana Stock Exchange started in 2003. In the late 1990s the government hired the Adam Smith Institute (ASI) as part of a project funded by the United Kingdom's Department for International Development (DFID) to formulate the basic components of a stock market. The Securities Industry Act of 1998 provides for the registration of securities brokers and dealers, self-regulatory organizations, and certain issuers of securities, and for the regulation of securities issuances. It was not brought into operation until July 2002 upon the completion of supporting regulations. During 2000–02 the Guyana Securities Council and GASCI were created and provided with ASI technical assistance and budgetary support from DFID.

**Table A3.9. Guyana: Stock Market Indicators, 2003–05**

|  | 2003 | 2004 | 2005 |
|--|------|------|------|
| Market capitalization (millions of U.S. dollars) | 94   | 127  | 187  |
| Market capitalization (percent of GDP)           | 12.7 | 16.2 | 23.9 |
| Listed domestic companies                        | 13   | 9    | 11   |
| Trades, total value (millions of U.S. dollars)   | 0.4  | 1    | 4    |
| Trades, total value (percent of GDP)             | 0.0  | 0.2  | 0.5  |
| Turnover ratio (percent)                         | ...  | ...  | 2.6  |

Source: World Bank.

### Market Infrastructure and Trading Systems

Infrastructure and trading systems are quite simple. Trading takes place on Mondays. Brokers execute orders by matching them against outstanding orders on the electronic order book, or, if there is no matching order, they leave their new order exposed on the book to await a matching incoming order when it arrives. Brokers settle with each other on a T+5 "Settlement Date." GASCI is responsible for drafting the rule book, advising on procedures, devising the trading system, assisting in the development of the software, and in training, testing, and launching.

### Regulation

The GSC is an independent autonomous body whose members are appointed by the Minister of Finance. ASI mandates that the GSC register persons engaged in trading or advising on securities and supervise their activities. GASCI is registered with the GSC to carry on a business as a stock exchange and an association of securities companies and intermediaries. Most of the costs of the GSC and GASCI are paid for by DFID.

### Corporate Governance

Corporate reporting and governance is weak. Corporate reporting requirements are not rigidly enforced and company information can be difficult to obtain. A commercial court was only recently established, and the accounting and auditing infrastructure is limited.

### Policy Lessons

- A decision needs to be made on the long-term development potential of the market.

**Table A3.10. Jamaica: Stock Market Indicators, 1995–2005**

|  | 1995    | 2000    | 2001    | 2002    | 2003    | 2004     | 2005     |
|--|---------|---------|---------|---------|---------|----------|----------|
| Market capitalization (millions of U.S. dollars) | 1,270.0 | 3,582.2 | 4,702.7 | 5,838.0 | 8,500.2 | 14,414.7 | 13,028.0 |
| Market capitalization (percent of GDP)           | 21.8    | 44.6    | 57.2    | 67.9    | 103.2   | 162.6    | 134.4    |
| Listed domestic companies                        | 51      | 46      | 42      | 42      | 39      | 38       | 39       |
| Trades, total value (millions of U.S. dollars)   | 341.0   | 75.6    | 75.1    | 142.8   | 249.2   | 477.7    | 430.3    |
| Trades, total value (percent of GDP)             | 5.9     | 0.9     | 0.9     | 1.7     | 3.0     | 5.4      | 4.4      |
| Turnover ratio (percent)                         | 21.3    | 2.5     | 1.8     | 1.6     | 3.5     | 4.2      | 3.1      |

Source: World Bank.

- Possible links with a larger regional stock market could be considered.

### Jamaica

Initiatives by the stock exchange and securities industry have helped the development of equity markets in Jamaica (Table A3.10). In addition, the authorities intend to initiate the integration of regional capital markets among Caribbean countries, although this has yet to be fulfilled.

### Description of the Equity Markets

Jamaica has a well-developed automated stock exchange with high market capitalization. The Jamaica Stock Exchange (JSE), established in 1969 as a center venue of equity markets, currently has 39 listed companies. Recently, trading volume increased significantly, and market capitalization has amounted to about 1.5 times the GDP. However, the financial sector accounts for about 75 percent of market capitalization, followed by the manufacturing sector with 10 percent.

The stock market has benefited from the Jamaica Central Securities Depository (JCSD). The JCSD provides a book entry service for investors, with the number of accounts increasing by 31 percent in 2005 to 79,000. The JCSD has also facilitated an increase in trading and transfer of shares between Jamaica and central securities depositories in Trinidad and Tobago and Barbados. This allows investors to take advantage of market opportunity across borders and prompts regional integration of stock markets.

### Market Development Over Time

Not only the JSE's initiatives but also the recent emergence of the securities industry have contributed to development of Jamaica's capital markets.

The JSE has taken a number of initiatives aimed at developing capital markets, with an emphasis on

promoting the confidence of stakeholders. The JSE, together with the Trinidad and Tobago Stock Exchange, held a trade show in New York to attract international investors to Caribbean markets. This has given further impetus to the integration of regional markets. To facilitate diversification of investment, the JSE and JCSD have proceeded with the implementation of the Fixed-Income Depository System. The JSE also continues to provide market education and training. Further, the Best Practice Awards, launched in 2005, stimulate greater interest by brokers and listed companies to achieve best practices and a high level of compliance.

### Emergence of Securities Industry

The emergence of securities dealers, though nascent as an industry with vulnerability, has helped the development of capital markets. The legislation in 2002 separated banking from nonbanking activities, which resulted in the large transfer of funds under management from merchant banks to securities dealers. At the end of 2005, funds under management by securities dealers amounted to J\$395 billion, representing 62 percent of GDP, and they now surpass the level of deposits with commercial banks. Dealers have initiated intermediation of these funds into capital markets, and have also encouraged the participation of retail investors. This is expected to stimulate capital markets if the industry addresses its vulnerability and establishes resilience to shocks.

### Demutualization

The demutualization of the JSE is under consideration. This would enhance the flexibility and effectiveness of running the exchange. The JSE is assessing the relevant market conditions with a view to final implementation and devoting attention to ensure its independent regulatory position.

**Table A3.11. Jordan: Stock Market Indicators, 1995–2005**

|  | 1995    | 2000    | 2001    | 2002    | 2003     | 2004     | 2005     |
|--|---------|---------|---------|---------|----------|----------|----------|
| Market capitalization (millions of U.S. dollars) | 4,670.0 | 4,943.2 | 6,315.9 | 7,087.0 | 10,963.0 | 18,383.4 | 37,638.8 |
| Market capitalization (percent of GDP)           | 69.4    | 58.4    | 70.4    | 74.1    | 107.9    | 159.6    | 292.7    |
| Listed domestic companies                        | 97      | 163     | 161     | 158     | 161      | 192      | 201      |
| Trades, total value (millions of U.S. dollars)   | 626.0   | 415.6   | 933.1   | 1,338.1 | 2,607.0  | 5,327.9  | 23,806.6 |
| Trades, total value (percent of GDP)             | 7.7     | 4.9     | 10.4    | 14.0    | 25.7     | 46.3     | 185.1    |
| Turnover ratio (percent)                         | 11.1    | 7.7     | 16.6    | 14.8    | 28.9     | 36.3     | 85.0     |

Source: World Bank.

### Policy Lessons

- The ambition of the stock exchange to make an integrated market in the region can lead to faster development of equity markets.
- The securities industry, an intermediary of funds, can add impetus to market development, provided that sound development of the industry is ensured.

### Jordan

The Amman Stock Exchange (ASE), established in 1978, is an active equity market among smaller economies (Table A3.11). The ASE has shown strong performance in both primary and secondary markets with the participation of many foreign investors. This success reflects Jordan's long-standing market reforms and privatization programs.

### Description of the Equity Markets

The ASE has recently revealed strong performance in terms of both price and trading volume (see Saaqdi-Sedik and Petri, 2006). The number of listed companies increased steadily from 163 in 2000 to 201 in 2005. The market is dominated by the banking sector, which represented 62 percent of market capitalization as of end-2005, followed by the service sector (20 percent), industry (16 percent), and insurance (2 percent). The banking sector is itself dominated by Arab Bank, which accounts for 41 percent of the total market capitalization. The top 10 companies represent about 70 percent of the ASE market capitalization. The ASE share price index peaked at a historical high in November 2005, and maintained relatively strong momentum throughout 2006, given increased liquidity and improved economic fundamentals in the region owing to high oil prices. The trading volume also increased substantially, reaching \$23.8 billion and 185 percent of GDP in 2005. Accordingly, the ASE market capitalization jumped to

\$37.6 billion at the end of 2005, constituting 292 percent of GDP.<sup>63</sup>

The recent large volume of non-Jordanian net purchases has led to a rapid increase in non-Jordanian ownership in the ASE's stocks. During 2005, the net investment of non-Jordanians in the ASE soared seven times that of the previous year to \$293 million, and the net purchases continued during 2006 albeit at a slower pace. As a result, non-Jordanian ownership in the ASE increased to 46 percent at end-2006 from 41 percent at end-2004, more than three-quarters of which may be attributed to investors from neighboring Arab countries. As for Jordanian ownership, individual and corporate investors represent 39 percent, the Social Security Corporation accounts for 11 percent, and the remainder belongs to the government.

The primary markets are benefiting from an active secondary market. In 2005, 64 public shareholding companies issued new shares to raise their capital through private subscription by the existing shareholders and certain investors, at a value of \$489 million, compared with 31 companies with a capital of \$125 million in 2004. Also, seven new public shareholding companies were registered with total capital of \$39 million, while no new shareholding companies were established in 2004.

### Market Development Over Time

Equity markets are starting to serve as an alternative source of funding in Jordan. Jordanian corporate sector investment and working capital is traditionally funded mainly from bank credit and retained earnings. Domestic nongovernment bank credit stands at more than 70 percent of GDP, representing a relatively high level among similar-sized countries. In addition, banks likely provide active advisory services to corporates through holding firms' shares. However, the equity markets are

<sup>63</sup>In 2005, the average market capitalization for emerging Asia was 39.8 percent of GDP, emerging Europe was 54.7 percent, and Latin America was 49.5 percent.



beginning to play a larger role as suggested in vigorous primary markets and increased market capitalization.

### **Market Reforms**

In 1997, the Amman Financial Market, established in 1978, was replaced by three new institutions. The Jordan Securities Commission (JSC), the Amman Stock Exchange (ASE), and the Securities Depository Commission (SDC) were newly established. This restructuring, aimed at separating the supervisory and legislative role, entrusted to the JSC, from the executive role of the capital market, assigned to ASE and SDC. Under the new framework, the ASE enhanced transparency of the markets by requiring publication of quarterly data, as well as its oversight function. The ASE also prompted foreign investors' participation by allowing them to hold majority stakes in all sectors except construction, mining, and commercial service companies.

### **Privatization**

The government's privatization program has transformed many public enterprises into listed companies. These include Jordan Telecoms, Jordan Cement Factories, and the Jordan Investment Corporation Portfolio, which have deepened the markets through an increase in the supply of equities. The most prominent case was privatization of Jordan Telecoms, now the fourth-largest listed company by market capitalization.

### **Investor Base**

The Social Security Corporation (SCC) plays a large role in the equity markets. The SCC, a scheme to protect workers under the social security umbrella, has assets of more than 25 percent of GDP. Recently, the SCC has increasingly moved its assets from bank deposits and fixed-income instruments to equity products in order to increase its return potential. Its equity investment reached JD 1.2 billion (\$851 million) in 2004 (46 percent of its total assets), representing 11 percent of the ownership in the ASE.

### **Policy Lessons**

- The government's privatization program provides opportunities for investing in good-standing companies such as telecoms.
- Expansion of the investor base and diversification of the profile of listing companies are required for further sustainable development of equity markets.

### **Kenya**

Trading performance at the Nairobi Stock Exchange (NSE) is relatively strong compared with those of other

smaller economies (Table A3.12). A number of initiatives by the NSE, in addition to Kenya's strong economic growth, supported development of equity markets. The NSE reinforces its activities through a three-year strategic marketing plan, with a view to integrating regional markets in cooperation with neighboring east African countries.

### **Description of the Equity Markets**

The NSE consists of two equity markets and a fixed-income securities market. The equity markets are divided into the Main Investment Market Segment (MIMS), the main bourse of the NSE, and the Alternative Investment Market Segment (AIMS), aimed at facilitating new and smaller companies' access to finance. On the fixed-income securities market, treasury bonds and corporate bonds are traded. There are 47 listed companies at the MIMS, with the number largely unchanged over the past decade. The equity market capitalization and turnover represent 35.5 percent and 2.8 percent of GDP respectively, but they are dominated by the two largest sectors, the "finance and investment sector" and the "industrial and allied sector."

A cross-listing service with Uganda and Tanzania is provided at the NSE. This facilitates regional capital flows by enabling local firms to list their shares on all three securities exchanges simultaneously. Cross-listed companies, although just a few at the moment, can enjoy a wider capital base as well as the prestige of a regional presence.

### **Market Development Over Time**

The development of Kenya's equity markets, with its origins dating back 80 years, has accelerated in this decade. After starting stock trading with a gentleman's agreement in the 1920s, when the country was still a British colony, the NSE was officially constituted as a voluntary association of stockbrokers in 1954. Since the 1990s, the NSE has undertaken extensive modernization efforts along with government-led market reforms. Most recently, the NSE presented a three-year corporate plan for 2006–08 with two clear strategic objectives: (1) to increase trading activity and the size of the market, and (2) to demutualize the organization by the end of 2007.

### **Facilitation of Foreign Ownership**

The government has encouraged foreign ownership thorough repeated deregulations. The limit of foreign ownership was relaxed from 20 percent as of 1995 to 75 percent in 2002. Also, a restriction on the amount to be held by a single foreign investor was abolished (the previous ceiling was 2.5 percent of total shares). In addition, most exchange controls were abolished in 1995.

**Table A3.12. Kenya: Stock Market Indicators, 1995–2005**

|  | 1995    | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    |
|--|---------|---------|---------|---------|---------|---------|---------|
| Market capitalization (millions of U.S. dollars) | 1,886.0 | 1,283.1 | 1,049.8 | 1,423.1 | 4,178.2 | 3,891.0 | 6,384.0 |
| Market capitalization (percent of GDP)           | ...     | 10.1    | 8.0     | 10.8    | 27.8    | 24.2    | 35.5    |
| Listed domestic companies                        | 56      | 57      | 57      | 57      | 51      | 47      | 47      |
| Trades, total value (millions of U.S. dollars)   | 65.0    | 47.5    | 39.8    | 36.4    | 208.8   | 344.7   | 504.8   |
| Trades, total value (percent of GDP)             | ...     | 0.4     | 0.3     | 0.3     | 1.4     | 2.1     | 2.8     |
| Turnover ratio (percent)                         | ...     | 3.6     | 3.4     | 3.8     | 7.4     | 8.1     | 9.8     |

Source: World Bank.

### Trading Infrastructure

Trading infrastructures have been modernized. The NSE implemented a new trading cycle, T+5, in 2000. After the Central Depository System Act was passed, the Central Depository and Settlement Corporation (CDSC) became the legal entity that owns and runs the clearing, settlement, depository, and registry system for securities traded in Kenya. In order to boost liquidity in the capital markets and to enhance the price discovery function, the NSE implemented the Automated Trading System (ATS) in 2006, which is fully compatible with the CDSC.<sup>64</sup>

### Cross-Listing

The NSE, the Uganda Securities Exchange (USE), and the Dar es Salaam Stock Exchange, Tanzania, have established cross-listing across the three exchanges. This aims to attract regional flows of capital to enhance economic developments in the area. Currently, two companies' primary listing on the NSE is cross-listed on all the three exchanges: Kenya Airways and East African Breweries. The cross-listing initiative was reinforced through the memorandum of understanding (MOU) between the NSE and USE, which was signed in 2006.

### Marketing Activities

The NSE has promoted improvements in corporate governance and investor education. The NSE is committed to the continuous development of corporate governance through initiatives including the "FiRe Award," which is given to a company with excellent governance and financial reporting. This is designed to enhance the

<sup>64</sup>The ATS is sourced from Millennium Information Technologies (MIT) of Colombo, Sri Lanka. MIT has also supplied similar solutions to the Colombo Stock Exchange and the Stock Exchange of Mauritius.

Corporate Governance Guideline issued by the Capital Market Authority. The NSE is also committed to the Youth Investment Education Program, which recognizes that youth under 30 years of age constitute more than 70 percent of Kenya's population and that they have the potential to make a significant contribution to the economic development of the nation.

### Demutualization

Demutualization may be a key milestone for the NSE. The purpose of the demutualization is to promote the strategic activities of the NSE by identifying and separating ownership and management rights from the execution of daily trading on the exchange. Shares of the NSE itself could even be listed if the ownership wishes.

### Policy Lessons

- A medium-term strategy for the exchange can clarify objectives and identify useful measures for developing markets. An organizational change such as demutualization may reinforce the exchange's efforts to promote market reforms.
- A move toward regional market integration, although a small step, may supplement market development through continuous cooperation with neighboring countries.

### Mauritius

The Stock Exchange of Mauritius Ltd. (SEM) seems not to have realized its full potential (Table A3.13). The technical infrastructure of the SEM is modern and efficient and many supporting laws have been passed. However, the market is characterized by low volume, shallowness, and poor liquidity, and the number of companies listing on the SEM appears to have plateaued (Kim and Yao, 2005). The slow growth of the

**Table A3.13. Mauritius: Stock Market Indicators, 1994–2004**

|  | 1994  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|
| Market capitalization (millions of U.S. dollars) | 1,510 | 1,642 | 1,331 | 1,063 | 1,328 | 1,955 | 2,379 | 2,617 |
| Market capitalization (percent of GDP)           | 44.8  | 38.6  | 29.8  | 23.4  | 29.2  | 37.3  | 39.4  | 40.6  |
| Listed domestic companies                        | 35    | 41    | 40    | 40    | 40    | 40    | 41    | 42    |
| Trades, total value (millions of U.S. dollars)   | 85    | 76    | 75    | 112   | 57    | 99    | 95    | 151   |
| Trades, total value (percent of GDP)             | 2.5   | 1.8   | 1.7   | 2.5   | 1.3   | 1.9   | 1.6   | 2.3   |
| Turnover ratio (percent)                         | ...   | 2.7   | 5.0   | 9.3   | 11.5  | 6.2   | 4.5   | 6.1   |

Source: World Bank.

SEM, notwithstanding the solid laws and strong market infrastructure, can be attributed to the relatively small size of Mauritius, family ownership, and the slow pace of policy implementation.

### Description of the Equity Markets

The SEM operates two markets: the Official Market and the Development & Enterprise Market (DEM). Currently, there are 40 companies listed on the Official Market, representing a market capitalization of nearly \$3.9 billion as of March 2007, with financial companies accounting for about 40 percent. There are 80 licensed capital market operators, including stockbrokers, fund managers, and investment schemes. Treasury bill trading on the market began in December 2003 with a view to developing an active secondary market for government instruments. The Stock Exchange is marginally profitable, generating MUR 12.3 million (\$396,620) in net profit after tax for 2005/2006, of which 40 percent was distributed in dividends. Net foreign portfolio flows during 2005–06 increased to \$42 million, the highest on record.

The broad economic impact of the SEM is likely to be limited. Less than 10 percent of the 450 large companies (defined as those with a turnover of more than MUR 80 million) list on the stock exchange and the market turnover ratio is not high. There has been only one IPO in the past several years, and that company has now delisted. Many of the companies listed on the exchange are controlled by a dominant shareholder, often a family-owned conglomerate, and free floats appear to be relatively low.

### Market Development Over Time

The SEM was incorporated in Mauritius in March 1989 as a private limited company and opened to foreign investors in 1994. When the Official Market started its operations in 1989, there were five listed companies with a market capitalization of nearly \$92 million.

### Infrastructure and Trading Systems

Infrastructure and trading systems are advanced. The CDS was initiated in January 1997 with the Bank of Mauritius as the clearing bank. It provides delivery versus payment on a T+3 rolling basis and a Guarantee Fund Mechanism to guarantee settlement failures of participants. The automated trading system began operation in June 2001 and conducts trading through dedicated workstations located at intermediary dealers and linked by communication lines to the SEM. Capital gains and dividends are not taxed.

### Market Reforms

The DEM aimed at SMEs was established in August 2006. As of May 2007, there were 50 companies listed on the DEM with a market capitalization of \$1.5 billion. DEM listed companies must have a minimum market capitalization of MUR 20 million (about \$600,000 as of May 2007), at least 100 shareholders, a minimum free float of 10 percent, and published accounts for at least one year prepared in accordance with International Financial Reporting Standards and audited without qualification.

The SEM joined the internationally recognized World Federation of Exchanges (WFE) in 2005. The exchange is only the second bourse in sub-Saharan Africa after Johannesburg to join the group. The WFE examined the SEM to verify its conformity with 20 criteria, including technological capability and organizational, regulatory, and supervisory infrastructure. The SEM joined the WFE with a view to attracting more foreign investors (the SEM opened to foreign investors in 1994).

### Corporate Governance

Corporate governance is improving for private sector companies. The Companies Act 2001, new listing rules, and the consolidation of financial regulation within the Financial Services Commission (FSC) have enhanced shareholder protection and contributed significantly to

corporate governance improvements. A Code of Corporate Governance, based on OECD Principles, was adopted in 2003 in the context of the publication of a “Corporate Governance Report on the Observance of Standards and Codes” (ROSC; World Bank). All designated companies (private and public) must either comply with the code or explain why they have not complied. The code has been seen as a success with respect to many private companies, but appears not to have led to improved governance of family and state-owned enterprises.

### Regulation

The SEM operates under the control and supervision of the FSC. The FSC has ultimate oversight of the regulatory function of the SEM but delegates many regulatory functions to the SEM as “frontline” regulator of its listed companies and market intermediaries. The FSC has increased staff and training, and now conducts regular on- and off-site surveillance of market intermediaries. However, the allocation of regulatory authority for securities market activities among the Bank of Mauritius (BOM), the FSC, and the SEM is still unclear, including with respect to the interests of SEM shareholders and listed companies.

### Policy Implementation

In many areas, implementation of policy reforms that could be expected to deepen the equity market has been slow. Inadequate staffing of the Financial Reporting Council has slowed implementation of the Financial Reporting Act. Key positions on important committees (the National Pensions Fund, the Financial Services Consultative Committee) have not been filled. The MOU between the BOM and the FSC was signed in December 2002 but has yet to be implemented. Implementation of the insurance and securities acts of 2005 has been delayed.

### Policy Lessons

- Important reforms have been enacted on a “top-down” basis often with foreign assistance, and actual implementation of the reforms has been quite slow, reflecting capacity constraints.
- The high concentration of family ownership and large conglomerates has slowed the pace of improvement in corporate governance.

### Sri Lanka

The 110-year-old Colombo Stock Exchange (CSE) has greatly contributed to development of equity markets (Table A3.14). Despite increased political and security concerns, the CSE has recently exhibited one of the best performances in the region. This is largely

led by domestic investors, particularly retail investors, who have been influenced by the CSE’s initiatives.

### Description of the Equity Markets

The CSE, with more than 230 companies listed, has grown rapidly and significantly both in price and liquidity. In 2006, the All Share Price Index (ASPI) surged by more than 40 percent to a historically high level, owing to improved economic conditions and strong corporate earnings. The liquidity indicator also shows a strong performance because a high average daily turnover has been maintained. The market capitalization increased to \$5.7 billion as of end-2005, representing 24 percent of GDP, which was close to the amount of domestic credit to the private sector.

Domestic investors have been the main contributors to market turnover, followed by the increasing involvement of foreign investors. The former account for more than 75 percent of purchases. In particular, retail investor participation remains high compared to corporate and institutional investors. Meanwhile, the strong domestic market influences foreign investors, who account for about 20 percent of market turnover with net purchases amounting to \$62 million in 2005. A significant event was the California Public Employees’ Retirement System (CALPERS), the largest public pension fund in the United States, including Sri Lanka in its emerging markets investment eligibility list in 2005.

Primary market activities have also trended upward in tandem with an active secondary market. In 2005, \$138 million was raised in the primary market, the largest mobilization of funds through the stock market. This was largely due to the listing of Dialog Telekom Ltd., which accounted for \$85 million of the funds raised. The CSE continues to take several measures to make listing attractive, such as a clinical approach to potential companies. The CSE also plans to relaunch the Second Board as the “DiriSavi” Board, meaning “assisting effort,” in order to encourage smaller and medium-sized companies to list.<sup>65</sup>

### Market Development Over Time

The CSE’s extensive initiatives have led to the high performance of the markets. The CSE, with its origins dating back to 1896, was incorporated in 1982, and became a formal stock exchange in 1995. Since then, the CSE has initiated a number of measures to improve the stock market.

<sup>65</sup>Separately, the government has made efforts to enhance access to finance for micro, small, and medium-sized companies. A new specialized bank, “Lankaputhra,” was established in 2005 to cater to the SME sector in the country. The Central Bank of Sri Lanka has continued to assist these programs.

**Table A3.14. Sri Lanka: Stock Market Indicators, 1995–2005**

|  | 1995    | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    |
|--|---------|---------|---------|---------|---------|---------|---------|
| Market capitalization (millions of U.S. dollars) | 1,998.0 | 1,074.1 | 1,331.5 | 1,681.1 | 2,711.1 | 3,657.0 | 5,720.0 |
| Market capitalization (percent of GDP)           | 15.3    | 6.6     | 8.5     | 10.2    | 14.9    | 18.2    | 24.4    |
| Listed domestic companies                        | 226     | 239     | 238     | 238     | 244     | 245     | 239     |
| Trades, total value (millions of U.S. dollars)   | 221.0   | 144.2   | 153.4   | 318.0   | 769.2   | 582.2   | 1,138.0 |
| Trades, total value (percent of GDP)             | 1.7     | 0.9     | 1.0     | 1.9     | 4.2     | 2.9     | 4.8     |
| Turnover ratio (percent)                         | 9.0     | 11.0    | 13.2    | 11.5    | 34.7    | 18.4    | 24.3    |

Source: World Bank.

### Marketing

The CSE's various marketing activities attract issuers and investors. The Issuer Relationship Division of the CSE establishes close relationships with companies and assists them throughout the listing process in cooperation with professionals such as accountants and auditors. On the investor side, the CSE conducts trade shows abroad to attract nonresident investors, mainly Sri Lankan expatriates. In 2005, the events were held in the United Arab Emirates, Australia, and New Zealand, which helped to increase investment inflows substantially. Further, the CSE hosted 243 seminars and workshops in 2005, reaching 10,500 participants, to enhance equity market awareness among current and potential investors.

### Branch Network

The CSE has an effective branch network to facilitate local investor participation. The CSE established its first branch in 1999 and opened the third one in 2005. Approximately 10,000 new investment accounts were opened through branches in 2005, which represented more than 20 percent of new domestic retail accounts in the year. Also, the CSE's branch network and its trading floor have accounted for about 10 percent of total turnover, helping geographical diversification of capital markets.

### Investment Instruments

The CSE provides numerous investment instruments with different risk return profiles. This is initiated by the idea that different types of instruments complement and benefit each other if they are traded in a single market place. The first such measure was the introduction of the Debt Trading System, which provides an automated trading system for both government and corporate debt securities. The CSE also plans to imple-

ment a Securities Borrowing and Lending System to improve liquidity and the price discovery function. Further, the CSE conducts several derivative training programs for market participants with a view to expanding the derivatives markets.

### Settlement System and IT Infrastructure

The CSE has enhanced its settlement system and information technology (IT) infrastructures to meet international standards. The CSE reduced the settlement cycle twice in 2005 by two days, thereby making the cycle T+3 (buyer) and T+4 (seller and participants). A further reduction has been proposed but is yet to be implemented. The interparticipant fund settlement of equity transactions directly through the real-time gross settlement system (RTGS) of the Central Bank of Sri Lanka is under consideration, and the introduction of a delivery versus payment settlement system for equities is also planned. To improve system reliability, the CSE continues to invest in IT infrastructures, recording an uptime of 99.6 percent in 2005, which satisfies international standards.

### Demutualization

The CSE is planning to demutualize the organization to enhance adaptability to the changing environment. This will require amendments to be made to the Securities Act and Company Act. Further, member firms should decide the model for the distribution of shares in the demutualized exchange.

### Policy Lessons

- Market initiatives mainly taken by the stock exchange may be a driving force for developing equity markets.
- Domestic individual investors, in addition to foreign investors, can form an important part of the investor base.

## Annex IV. Case Studies: Regional Integration

### Market Integration in Europe

In Europe, cross-country market access is based on the “single passport” concept. Products and financial intermediaries authorized in one European Union (EU) country have free access to the other EU member countries, based on the authorization given by the home country. For that purpose the European Directives establish minimum common authorization requirements, as well as a certain minimum common approach toward the authorization process by all EU members. Supervision relies mainly on the home country, although under certain circumstances the host country can also exercise supervisory powers.

The Lamfalussy Committee in 2001 proposed a new structure to streamline the preparation of regulations and to foster supervisory convergence between national securities supervisors. This structure has three levels: (1) the Ecofin Council and European Parliament decide on the broad framework principles in Directives and Regulations, (2) regulatory committees (composed of high-level representatives from the ministries of finance) vote on the proposals of the European Commission for implementing technical measures, and (3) supervisory committees (composed of high-level representatives from the relevant supervisory authorities) advise the European Commission on promoting a consistent implementation of EU directives and convergence of supervisory practices.

These institutional and legal arrangements have provided the framework for private-company-led efforts that have deepened securities market integration. Euronext is a cross-border exchange that integrates trading and clearing operations on regulated and non-regulated markets for cash products and derivatives. It was formed in 2000 in response to the globalization of capital markets and, to create a pan-European exchange offering, its participants increased liquidity and lowered transaction costs. Euronext countries’ trading rules have been largely harmonized, under the responsibility of the exchange, but each local market remains subject to its domestic regulation (public law rules), under the supervision of the local authorities. The trading of most securities is done on a unified order-driven platform. Clearing involves a central counterparty—the LCH Clearnet Group—for all exchange-executed trades. In

contrast, settlement is partially decentralized, and can be done on the books of several entities.

The Eurolist market operated by the Euronext group brought together the cash markets of France, Belgium, Portugal, and the Netherlands. Up until 2005, the markets used a common trading platform, but listing requirements were different. Since 2005, the four markets have shared the same listing requirements, thus facilitating the cross-listing of issuers. Clearance, settlement, and the depository are not fully centralized; rather, each market has its own arrangements. This example of business integration has forced the regulators to take additional steps to ensure proper coordination of their efforts through the signing of memorandums of understanding (MOUs) on the supervision of Euronext and Euroclear.

Notwithstanding all the progress already achieved, there are still concerns regarding the costs of cross-border transactions. On July 11, 2006, the Head of Internal Markets at the European Commission set out a voluntary code of conduct aimed at achieving interoperability between Europe’s many stock exchanges, clearing houses, and settlement firms, as well as a timetable for its implementation. Customers of Europe’s stock exchanges have been critical of the “vertical silo” model, in which a single owner-operator operates one country’s stocks and derivatives markets along with its post-trading services, which in the opinion of many is making trading in Europe more expensive than in the United States. The first phase will include measures aimed at achieving price transparency by the end of the year. Interoperability will come in the second phase; and it will require all stock exchanges, clearing houses, central counterparties, and central securities depositories to be able to send instructions to and from one another. This will allow any customer to choose its own provider of post-trading services. The third phase would encompass complete unbundling of all services and separate accounting for each service provided.

### Integration of the Baltic Markets with Nordic Area Markets

The Baltic financial markets have achieved a significant but apparently slowing degree of integration with

those of the Nordic area.<sup>66</sup> Individually, each of the Baltic equity markets may be too small to be viable—at end-2005, the combined market capitalization of equity markets in the Nordic-Baltic countries was \$1.2 trillion. Until the mid- and late 1990s, market integration of these countries was affected by restrictions on selected cross-border equity transactions and by limited foreign ownership of individual companies. After most barriers to cross-border equity transactions were removed in the context of EU integration, foreign ownership of listed companies rose sharply. For example, nonresident investors held 60 percent of market capitalization of the Tallinn Stock Exchange in 2006.

Market integration was initiated by Norex, the strategic alliance, originally agreed to between Nordic stock exchanges. The alliance encompasses harmonized membership requirements and trading rules and the removal of cross-country entry fees. The Saxess trading platform, which serves as a single point of entry for the Nordic markets, supports trading in a wide range of cash and derivatives instruments, different trading models, and both order-driven and price-driven market structures.

Integration has been facilitated by the purchase of all but one of the regional stock exchanges by the OMX Group of Sweden.<sup>67</sup> Integration has been furthered by harmonization of share indices, a common “Nordic List” organized by market capitalization and industry, new corporate governance codes for issuers, and harmonized listing requirements among the OMX Nordic exchanges.

Regional market intermediaries and remote membership are also enhancing integration. In 2002, banking groups from Denmark, Sweden, Norway, and Finland agreed to offer clearing, settlement, and custody to international and domestic customers. Ten brokers account for about 42 percent of global equity turnover in the region, with six belonging to global investment banking groups.

In 2004, the three Baltic stock exchanges jointly established the Baltic Market by integrating trading and settlement systems. This is part of the larger OMX group of exchanges, and it offers ease of access to more than 80 percent of the exchange trading in the Nordic and Baltic countries. However, the Baltic Market and the Nordic Market adopted separate operation frameworks for the moment, because they are at different stages of development. The Baltic Market offers for the three exchanges the advantages of easy cross-membership, a common trading system, harmonized market practices and rules, efficient cross-border trading and settlement services, one market information source such as a common securities list, harmonized corporate information,

<sup>66</sup>The Baltic Markets refer to stock exchanges in Estonia, Latvia, and Lithuania. The reference to the Nordic area means exchanges in Denmark, Sweden, Norway, Finland, and Iceland.

<sup>67</sup>The Norex alliance remains valid even after the OMX group of exchanges was established.

a common index, and a common data website. A Baltic Fund Center, which was established in 2006, allows investors to more easily compare investment funds and fund-management companies. Further, the Baltic Market introduced an Alternative Securities Market targeting small and medium-sized companies (First North Baltic) in 2007.

Further integration of the Nordic and Baltic markets as one entity is envisaged. The plans call for investors to have full access to all trading both in the Nordic and Baltic exchanges. This would be made possible by full integration of membership applications, trading systems, practices and rules, and information sources.

Supervision is taking the form of arrangements among regulators rather than institutional consolidation. Several Nordic market regulators have concluded an MOU on cooperation in the supervision of the OMX group, and Nordic central banks have signed cross-border MOUs on the oversight of stock exchanges and payment and settlement systems. Further, MOUs are being signed covering cross-border central securities depositories (CSD) groups.

Trading is well integrated for the Nordic-Baltic exchanges, but integration has slowed for clearing and settlement. Clearing and settlement systems use different technologies and are tailored for domestic markets. Upgrading and integrating these systems will be costly. Further, banks are in many cases shareholders of the CSDs and members of the exchange, and also provide other services to investors. Because integration of post-trading infrastructures can alter the profitability of various services, these different products can create conflicts and make it in their interest to slow integration.

The Baltic markets seem to be evolving as an integrated entity unto themselves rather than as part of the Nordic Market. For example, the Baltic exchanges are not part of a CSD created in 2004 by the Nordic exchanges. The divergence of the Baltic exchanges may reflect their smaller economic sizes, different corporate structures, and less-developed country markets.<sup>68</sup> The separate path suggests that the Baltics are not fully integrated with their more developed Nordic neighbors, and that it is likely to take time for the Baltics to benefit from the full-fledged regional integration enough to attract global investors’ interests.

### Central America<sup>69</sup>

The setting for market integration in Central America is mixed. On the plus side, financial groups own subsid-

<sup>68</sup>The Baltic exchanges have much lower capitalization-to-GDP ratios compared to those of the Nordic countries, and they are dominated by equity issues, whereas bonds make up a significant share of the Nordic exchange capitalization.

<sup>69</sup>This section draws on Shah and others (2007).

aries in almost every country in Central America, and the key shareholders of the most important financial groups are from the region. However, capital market integration is impeded by different currencies, restrictions on domestic institutional investors, the presence of as many as eight exchanges and custodians, the mutual structure of most exchanges, the presence of competing exchanges and custodians, and regulatory conflicts.

Steps toward regional integration have been mainly with respect to the regulators and stock exchanges of Costa Rica, El Salvador, and Panama. In 2003, El Salvador and Panama signed an MOU committing to a fast-track registration of primary issues and mutual funds, Panama granted El Salvador the status of recognized jurisdiction, and El Salvador and Costa Rica signed another MOU agreeing to streamline the registration process, but the impact of this cooperation has been limited. The stock exchanges of Costa Rica, El Salvador, and Panama signed an MOU in September of 2006 for the development of a common trading platform, but progress in implementation has been slow. Further, the exchanges agreed to seek the technical support from OMX.

The slow pace of integration reflects perceived differences in regulation and the challenge of passing new legislation in support of harmonization. There is a perception that the quality of supervision is uneven across countries, and countries that believe they have higher standards of regulation and supervision are not willing to compromise those standards. Other efforts to achieve broader harmonization in Central America have yet to bear fruit because the differences in the regulatory requirements are perceived as significant, and therefore efforts to harmonize them would require legislative

amendments, for which it would be difficult to gain political support.

Policy measures are available to help set the stage for integration. Indeed, market participants seem to be positioning themselves through partnerships with regional counterparts to take advantage of regionalization. A decisive signal by the authorities to harmonize varying regulations could provide an effective signal to align issuers, investors, and intermediaries toward such a goal. Equity market integration could piggyback off of the already fairly liquid government securities markets by government efforts to foster listing and trading in a shared or linked marketplace.

### Other Examples of Smaller Economy Regional Equity Market Integration

The first steps toward equity market integration are under way in several groups of smaller economies, in addition to the Baltics and Central America. The stock exchanges of Kenya, Uganda, and Tanzania offer a cross-listing service that enables firms to list their shares on all three exchanges simultaneously. Jamaica has also facilitated trading and transferring shares with Trinidad and Tobago and Barbados through a network of CSDs. These are examples of regional integration among countries at a similar stage of market development, rather than a merger of smaller markets with a larger neighbor. In Maghreb countries, measures fostering information and technology sharing, cross-listing, and cross-border investment would boost equity markets and ultimately lead to broad financial integration.



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