

## LOCAL SECURITIES AND DERIVATIVES MARKETS IN EMERGING MARKETS: SELECTED POLICY ISSUES

The development of local securities and derivatives markets is just one response of many emerging markets to global volatility since the mid-1990s, particularly the sudden losses of access to international capital markets and periods of high global asset price volatility. While previous issues of the *Global Financial Stability Report* (GFSR) have examined the recent development of local equities, bonds, and derivatives markets in emerging markets, this chapter examines key policy issues related to the role of these markets as an alternative source of funding for sovereign and corporate entities and a means of attracting foreign capital inflows.

The capital flows and asset price volatility that has characterized the global financial system since the mid-1990s has raised the issue of how emerging market economic and financial systems can be made more resilient to such volatility. Clearly, the loss of access to international markets associated with unsustainable macroeconomic and exchange rate policies can best be addressed by adopting stronger domestic policies. However, coping with a loss of market access associated with contagion from a crisis in other emerging markets and/or volatility in capital flows and asset prices associated with developments in mature markets is a more complex issue. Many emerging markets have adopted a variety of measures to self-insure against such volatility. While these measures have differed across regions, they have typically included changing sovereign external asset and liability management practices; adapting exchange rate arrangements to the degree of capital account openness; strengthening domestic financial institutions and enhancing prudential supervision and regulation in order to increase resilience to volatility; and

developing local securities and derivatives markets.

The development of local securities and derivatives markets is seen as a means of creating a more stable source of local currency funding for both the public and corporate sectors, thereby mitigating the funding difficulties created by “sudden stops” in cross-border capital flows and reducing dependence on bank credit as a source of funding. In addition, the development of these markets is seen as a vehicle for improving the efficiency and stability of financial intermediation, reducing the currency and maturity mismatches associated with cross-border lending, and creating new opportunities and instruments for hedging various financial and exchange rate risks.

The measures adopted to further the development of local securities and derivatives markets have typically encompassed efforts to strengthen market infrastructure and create benchmark issues, expand the set of institutional investors, and improve corporate governance and transparency. However, there are several key policy areas where no consensus has emerged regarding either the factors that will influence the likely outcomes or the most appropriate policies. Issues remain regarding:

- the use of instruments indexed to changes in such variables as the price level and exchange rates;
- the government’s role in promoting the development of local equity markets;
- the role of foreign investors in local securities and derivatives markets;
- the degree of development of local derivatives markets; and
- the sequencing of reforms in local securities and derivatives markets.

This chapter first examines how the recent interest in local securities and derivatives markets is part of a response to the volatile inter-

national capital flows and asset prices and systemic banking crisis. It then reviews the extent to which local securities markets have become an important source of funding for the corporate and public sectors, and considers the most common measures used to develop local securities and derivatives markets. The chapter concludes with a discussion of “gray areas” concerning policies related to developing local securities and derivatives markets.

### Local Markets as Self-Insurance Against Volatile Capital Flows

Much of the recent interest in developing local securities and derivatives markets reflects the experience of many emerging markets with volatile international capital flows and asset prices and systemic banking system crises. While the scale of gross and net private capital flows rose steadily during the first half of the 1990s, the remainder of the 1990s witnessed greater volatility of capital flows, as well as a decline in the overall level of flows (especially after 1997).<sup>1</sup> Moreover, “sudden stops” (or even reversals) of capital flows were often key features of many of the most severe balance of payments and systemic banking crises of the period (particularly in the Mexican crisis of 1995 and the Asian crisis of 1997).<sup>2</sup> To an important degree, the banking system problems in turn reflected the debt servicing difficulties of domestic corporates (especially those with large foreign currency debts).

While sudden stops in capital flows often reflected increased investor concerns about weaknesses in domestic economic and political fundamentals and domestic financial systems in emerging markets, empirical studies<sup>3</sup> suggest that developments in mature markets

(such as greater mature market asset price volatility that reduces investors appetite for “risky assets” in general) have played a key role in reducing emerging markets’ access to international capital markets.<sup>4</sup>

The volatility of capital flows since the mid-1990s has raised the issues of both how emerging markets can achieve more stable access to international capital markets and how these economies can cope with whatever volatility does occur. While establishing sound and sustainable macroeconomic policies has been one obvious element in strengthening domestic economic fundamentals and perceived creditworthiness, many emerging markets have taken additional measures designed to “self-insure” against volatile capital flows and asset prices. These measures can be grouped into four general areas:

- changes in external asset and liability management practices;
- adapting exchange rate arrangements to the degree of capital account openness;
- strengthening domestic financial institutions and enhancing prudential supervision and regulation in order to increase resilience to volatility; and
- developing local securities and derivatives markets to provide an alternative source of funding for the public and corporate sectors and to facilitate the management of the financial risks associated with periods of high asset price volatility.

### External Asset and Liability Management

In the period following the Asian crisis of 1997, some commentators suggested that emerging markets increase their holdings of international reserves to provide a degree of

<sup>1</sup>The next GFSR will examine in greater detail the experience with private capital flows to emerging markets since 1990. For a discussion of the experience with volatility on income and consumption, see Prasad and Wei (forthcoming).

<sup>2</sup>See the Appendix to Chapter III for an analysis of the experience with market closures since the mid-1990s. For analyses of sudden stops in capital flows, see Calvo (1998) and Calvo and Reinhart (2000).

<sup>3</sup>See Calvo (1999) and Annex III in IMF (2001).

<sup>4</sup>See Chapter II for an examination of the experience with volatility in mature markets.

**Table 4.1. Reserves: Level and Ratio to GDP**  
(In percent)

	1990–1994 Average		1995–1999 Average		2000		2001	
	Level (In billions of U.S. dollars)	Ratio to GDP (In percent)	Level (In billions of U.S. dollars)	Ratio to GDP (In percent)	Level (In billions of U.S. dollars)	Ratio to GDP (In percent)	Level (In billions of U.S. dollars)	Ratio to GDP (In percent)
<b>Emerging markets</b>	<b>490.2</b>	<b>9.3</b>	<b>943.3</b>	<b>13.9</b>	<b>1,206.4</b>	<b>16.6</b>	<b>1,321.7</b>	<b>18.2</b>
<b>Asia</b>	<b>298.8</b>	<b>15.3</b>	<b>553.3</b>	<b>19.2</b>	<b>728.3</b>	<b>22.8</b>	<b>807.6</b>	<b>25.3</b>
<i>of which:</i>								
China	34.5	7.4	127.0	14.4	168.9	15.6	216.3	18.7
Taiwan Province of China	83.3	41.3	92.3	33.3	107.4	34.7	122.8	43.5
Korea	18.3	5.6	42.6	10.4	96.2	20.8	102.8	24.3
Philippines	4.0	7.4	9.5	12.5	13.4	17.9	13.8	19.3
Thailand	21.1	18.7	32.7	22.7	32.1	26.3	32.5	28.3
Malaysia	18.2	29.9	25.6	29.8	29.6	32.8	30.5	34.7
Indonesia	10.3	7.2	19.7	13.1	28.6	18.8	27.4	18.8
<b>Latin America</b>	<b>84.0</b>	<b>6.3</b>	<b>154.7</b>	<b>8.3</b>	<b>155.6</b>	<b>8.0</b>	<b>158.2</b>	<b>8.3</b>
<i>of which:</i>								
Argentina	10.0	4.6	21.2	7.4	25.1	8.8	14.6	5.4
Brazil	21.3	4.7	47.4	6.6	31.5	5.3	35.8	7.1
Mexico	15.6	4.5	25.7	6.6	35.5	6.1	44.8	7.2
Venezuela	9.7	17.5	11.9	13.7	13.6	11.2	9.7	7.7
Chile	9.1	20.1	15.3	20.0	14.7	19.7	14.2	21.4
Colombia	7.0	13.4	8.9	9.4	8.9	11.5	10.2	12.3
Peru	3.4	9.1	9.7	17.5	8.4	15.9	8.7	16.5
<b>Europe</b>	<b>31.2</b>	<b>3.8</b>	<b>101.2</b>	<b>10.0</b>	<b>132.8</b>	<b>13.8</b>	<b>145.4</b>	<b>14.5</b>
<i>of which:</i>								
Poland	4.5	5.6	21.4	14.5	26.7	16.9	25.8	14.6
Czech Republic	5.1	13.2	12.3	22.4	13.0	25.4	14.4	25.3
Hungary	4.6	12.0	10.1	21.9	11.2	24.0	10.7	20.7
Turkey	6.4	4.1	18.3	9.6	22.7	11.2	19.0	12.8
<b>Africa</b>	<b>20.4</b>	<b>5.2</b>	<b>36.8</b>	<b>8.6</b>	<b>53.1</b>	<b>12.3</b>	<b>64.7</b>	<b>15.4</b>
<i>of which:</i>								
South Africa	1.4	1.1	4.1	2.9	6.4	5.0	6.3	5.6

Source: IMF, *World Economic Outlook*.

“self-insurance” against a sudden reversal of capital flows.<sup>5</sup> Indeed, holdings of foreign exchange reserves by emerging markets nearly doubled between the end of 1995 and the end of 2001 (see Table 4.1).<sup>6</sup> Reserve accumulation was particularly notable for some countries that experienced “sudden stops” (or

reversals) of capital flows (such as Korea, Taiwan Province of China, and Mexico).

Emerging market borrowers have also shown deftness in adapting to the volatile nature of market access.<sup>7</sup> In part, this has involved turning to the syndicated loan market when access to bond markets has been

<sup>5</sup>Feldstein (1999) encouraged emerging markets to accumulate reserves as insurance against the disruptive financial effects of an abrupt reversal of capital flows. According to Greenspan (1999), the Deputy Finance Minister of Argentina, Pablo Guidotti, proposed that the level of usable reserves should exceed the one-year scheduled amount of foreign currency debt amortization (assuming no rollovers). Greenspan (1999) extended Guidotti’s proposal by arguing for a “liquidity-at-risk” standard that would require a country to hold liquid reserves sufficient to ensure that they could avoid new borrowing for one year with a certain ex ante probability, such as 95 percent.

<sup>6</sup>Moreover, the ratio of emerging markets’ foreign exchange reserves to nominal GDP at the end of 2002 was at the highest level since 1990. Similar results hold for the ratios of reserves to imports and reserves to broad money (M2).

<sup>7</sup>The response of emerging market borrowers is analyzed more extensively in Chapter III of IMF (2001).

restricted. In addition, emerging market borrowers have attempted to develop access to the retail and institutional bond markets denominated in euros and yen when the U.S. dollar bond market has been closed. Moreover, they have employed staff in debt management agencies with extensive investment banking and trading experience, and exploited “windows of opportunity” to pre-fund their yearly financing requirement. They have also engaged in debt exchanges to extend the maturity of their external debt and avoid a bunching of maturities, established benchmark external bond issues both to improve secondary market liquidity and to facilitate the pricing of external corporate debt issues, and made greater use of local debt markets.

While changes in public sector external asset and liability practices have been key elements of the self-insurance response to the volatility of capital flows, the authorities in many countries have continued to use capital controls in part to affect the private sector’s external asset and liability position. Indeed, the evidence for the period 1998–2000 shows that there has also been a slowdown in the removal of capital controls by countries that have had restricted capital accounts.<sup>8</sup> Moreover, data for 2001 do not suggest any significant change in the use of capital controls. Indeed, controls on foreign direct investment and on institutional investors rose slightly. These *de jure* capital controls do not

necessarily provide a measure of possible changes in the *de facto* level of capital market integration. But they do provide a measure of the relative unwillingness of the authorities to undertake further capital account liberalization in an environment of volatile capital flows and global asset prices.

Although external asset and liability management techniques can provide a buffer against volatile capital flows and asset prices, emerging markets have also been adapting policies and the strength of their financial institutions to the degree of openness of their capital account. These adaptations have been most noticeable in the nature of exchange rate arrangements and in efforts to strengthen the ability of banking systems to withstand volatile capital flows and asset prices.

### Exchange Rate Policies

While the accumulation of larger foreign exchange reserves could create more scope for the authorities to fix the exchange rate, countries have generally moved away from pegged but adjustable exchange rate arrangements since the mid-1990s, especially those with access to international capital markets.<sup>9</sup> For countries with access to international capital markets, the move to either a flexible exchange rate or a hard peg represents alternative solutions to the well-known problem of trying to maintain a fixed exchange rate and an independent monetary policy with a high

<sup>8</sup>Habermeier and Ishii (forthcoming) reported, for example, that during 1998–2000, the number of countries maintaining controls on both current and capital account transactions remained relatively unchanged (falling from 74 percent to 70 percent of all IMF members). Moreover, although the overall use of capital controls did not change, a growing number of countries began to regulate selected transactions. In particular, the number of countries maintaining controls on institutional investors rose sharply. While many of these controls were prudential in nature (such as limits on purchase of foreign assets), some specified the channels’ markets, and/or institutions for permitted cross-border transactions.

<sup>9</sup>For example, Bubula and Ötker-Robe (2002) found that between 1995 and 2001 the proportion of emerging markets with *de facto* floating exchange rates rose from 9 percent to 50 percent. At the same time, the proportion of countries with a hard peg also rose from 9 percent to 16 percent. This evidence is consistent with what Fischer (2001) described as the “hollowing out” of exchange rate arrangements. However, Reinhart and Rogoff (2002) argue that the shift in exchange rate arrangements has been much more complex than indicated by official classifications. Their analysis suggests that many official pegs were *de facto* much more flexible and conversely that many floating exchange rates showed considerable rigidity.

degree of capital mobility. Moreover, it reflects the difficulties that a number of emerging markets experienced in attempting to defend a fixed exchange rate during periods of sudden stops or reversals of capital flows.

### Financial Policies

While the changes in exchange rate arrangements removed some of the incentives for banks to borrow abroad—a major cause of the emerging market crises in the second half of the 1990s—the authorities still faced the difficulties of restructuring and recapitalizing the banks (and heavily indebted corporates), as well as ensuring that banks improve their risk management techniques amid volatile capital flows and asset prices (see Chapter III). In short, since 1997, the results have been mixed. Asia, for example, has shown a slow but steady improvement in its soundness indicators. In contrast, Latin America witnessed an overall worsening of banking soundness, although the results vary, with countries such as Mexico and Chile continuing to improve but Argentina and Uruguay deteriorating. Central Europe has achieved the sharpest improvement in bank soundness. (For a complete discussion of soundness indicators, see the section on banking sector performance in Chapter III.)

### Development of Local Securities and Derivatives Markets

The efforts to develop local securities and derivatives markets have been motivated by a number of considerations, especially the desire to provide an alternative source of funding in order to self-insure against capital flow reversals. Another motivation has been a desire to stimulate domestic savings by offering savers new financial instruments that

broaden the set of investment opportunities and allow for better portfolio diversification. In many emerging markets, for example, domestic residents have traditionally had access to only two types of domestic instruments—bank deposits and domestic equities—and little access to international markets. Still another consideration has been to improve the intermediation of domestic savings and to attract foreign investors. This has become particularly important as a greater number of emerging markets have privatized their pension systems. In some countries, such as Chile, the private pension funds and insurance companies have been key sources of demand for high-quality corporate bonds, reflecting a desire to achieve a rate of return higher than can be obtained on bank deposits and also to obtain longer duration assets (which better match their long duration obligations). In Central Europe, foreign investors have provided a steady source of demand for sovereign bonds. Moreover, as already noted, emerging markets have also sought to develop alternative sources of funding for both the public and corporate sectors to either domestic bank lending or international capital markets.<sup>10</sup> In addition, local derivatives markets have been seen as providing a vehicle for managing financial risks, especially those related to exchange rates and interest rates.

### Extent of Securities Market Development as an Alternative Source of Funding

Given the efforts to develop local securities markets, to what extent have these markets begun to provide an alternative source of funding to either domestic bank lending or international capital flows for both the private sector and the public sector? As will be discussed, a number of key conclusions emerge

<sup>10</sup>Drawing on lessons from recent emerging markets crises, Greenspan (1999) noted that well-developed bond markets can act like a “spare tire” and substitute for bank lending as a source of corporate funding when bank lending dries up.

**Table 4.2. Private Sector**  
(In billions of U.S. dollars)

	1997	1998	1999	2000	2001	1997–2001
<b>Emerging markets<sup>1</sup></b>	<b>319.80</b>	<b>250.04</b>	<b>191.94</b>	<b>417.39</b>	<b>296.71</b>	<b>1,475.87</b>
<b>Domestic</b>	<b>217.48</b>	<b>203.01</b>	<b>131.64</b>	<b>324.07</b>	<b>229.35</b>	<b>1,105.55</b>
Equities	37.28	32.70	43.42	25.50	19.02	157.91
Bonds	11.15	11.70	10.47	98.01	114.47	245.79
Bank loans	169.06	158.61	77.75	200.57	95.86	701.85
<b>International</b>	<b>102.32</b>	<b>47.03</b>	<b>60.30</b>	<b>93.32</b>	<b>67.35</b>	<b>370.32</b>
Equities	18.42	5.59	15.76	31.90	8.81	80.47
Bonds	41.63	19.86	22.15	21.84	30.90	136.37
Bank loans	42.27	21.59	22.39	39.59	27.64	153.47
<b>Asia</b>	<b>207.30</b>	<b>156.80</b>	<b>220.46</b>	<b>300.84</b>	<b>241.99</b>	<b>1,127.38</b>
<b>Domestic</b>	<b>154.87</b>	<b>144.69</b>	<b>193.59</b>	<b>245.59</b>	<b>198.66</b>	<b>937.39</b>
Equities	28.11	16.69	35.52	20.65	10.76	111.73
Bonds	0.00	0.00	0.83	42.66	53.57	97.06
Bank loans	126.75	128.00	157.24	182.28	134.33	728.60
<b>International</b>	<b>52.43</b>	<b>12.11</b>	<b>26.87</b>	<b>55.25</b>	<b>43.34</b>	<b>189.99</b>
Equities	10.50	4.05	13.92	26.45	7.65	62.56
Bonds	19.60	3.41	8.24	12.45	21.50	65.20
Bank loans	22.34	4.65	4.71	16.35	14.18	62.23
<b>Central Europe</b>	<b>11.00</b>	<b>23.72</b>	<b>4.07</b>	<b>7.59</b>	<b>16.38</b>	<b>62.76</b>
<b>Domestic</b>	<b>5.36</b>	<b>18.67</b>	<b>-0.14</b>	<b>2.60</b>	<b>13.29</b>	<b>39.79</b>
Equities	1.31	6.60	3.35	1.29	0.95	13.49
Bonds	0.50	0.28	0.33	0.17	0.32	1.61
Bank loans	3.55	11.80	-3.82	1.14	12.02	24.69
<b>International</b>	<b>5.64</b>	<b>5.05</b>	<b>4.20</b>	<b>4.99</b>	<b>3.09</b>	<b>22.97</b>
Equities	2.60	1.47	1.17	0.38	0.00	5.61
Bonds	1.26	2.14	1.78	0.83	1.86	7.88
Bank loans	1.78	1.44	1.26	3.78	1.22	9.49
<b>Latin America</b>	<b>101.50</b>	<b>69.52</b>	<b>-32.58</b>	<b>108.96</b>	<b>38.33</b>	<b>285.73</b>
<b>Domestic</b>	<b>57.26</b>	<b>39.64</b>	<b>-61.81</b>	<b>75.88</b>	<b>17.40</b>	<b>128.38</b>
Equities	7.86	9.41	4.55	3.56	7.31	32.69
Bonds	10.64	11.42	9.32	55.17	60.58	147.13
Bank loans	38.76	18.81	-75.67	17.15	-50.49	-51.44
<b>International</b>	<b>44.25</b>	<b>29.87</b>	<b>29.23</b>	<b>33.08</b>	<b>20.93</b>	<b>157.36</b>
Equities	5.33	0.07	0.67	5.07	1.16	12.30
Bonds	20.77	14.31	12.13	8.55	7.54	63.30
Bank loans	18.14	15.49	16.43	19.46	12.23	81.75

Sources: Capital Data; IMF, *International Financial Statistics*; S&P EMDB; and Hong Kong Monetary Authorities.

<sup>1</sup>Emerging markets: China, Hong Kong SAR, Korea, Malaysia, Singapore, Thailand, Argentina, Brazil, Chile, Mexico, Czech Republic, Hungary, and Poland.

from the data on local and international issuance during the period 1997–2001. First, there has been a surge of local corporate bond issuance, particularly in Asia and Latin America. Indeed, local corporate bond issues grew by a factor of 10 between 1997–99 and 2000–01. Second, local bond markets have been the dominant source of funding for the public sector in all regions. Third, while emerging markets have traditionally been viewed as bank dominated financial systems,

local bond markets have become the largest single source of domestic and international funding. As already noted, this primarily reflects the heavy reliance of the public sector on bond issuance. Nonetheless, domestic corporate bond issuance rose from 5 percent of total corporate domestic and international funding in 1997–99 to 31 percent in 2000–01; whereas domestic bank credit fell from 52 percent of total corporate funding in 1997–99 to 40 percent in 2000–01.

For the private sector, Table 4.2 compares the domestic issuance of corporate bonds, equities, and bank lending with the issuance of international corporate bonds, equities, and syndicated loans for selected emerging markets across different regions from 1997 until 2001.<sup>11</sup> During this period, domestic bank lending was the dominant source of corporate funding, accounting for 48 percent of total domestic and international funding. Nonetheless, domestic corporate bond issuance rose from an annual average of \$11 billion in 1997–99 to \$106 billion in 2000–01; and, for the period as a whole, domestic corporate bond issues represented just under 17 percent of total funding. Domestic equity issues accounted for only about 11 percent of total funding.

International issues of bonds, equities, and syndicated loans by the corporate sector accounted for just over 25 percent of total funding between 1997 and 2001 (see Table 4.2). However, international corporate bond issues amounted to only roughly half of such bonds issued domestically. Indeed, while the annual average value of domestic corporate bond issuance rose between 1997–99 and 2000–01, the annual average value of international corporate bond issuance declined from \$28 billion to \$26 billion. Moreover, international equity issuance amounted to about half of domestic equity issuance; while syndicated lending was equivalent to around 20 percent of the extension of domestic credit.

Thus, while domestic bank credit has been the primary corporate source of funding for this group of emerging markets, domestic bond markets have been an increasingly important source of funding. Indeed, domestic corporate bond issues rose from 5 percent

of total corporate domestic and international funding in 1997–99 to 31 percent in 2000–01. During the same period, domestic bank credit fell from 52 percent of total corporate funding in 1997–99 to 40 percent in 2000–01.

Between 1997 and 2001, the pattern of corporate funding revealed sharp regional differences. In Asia, domestic bank lending accounted for 65 percent of total domestic and international financing. Moreover, domestic equity issuance was the second largest source of corporate funding (\$112 billion) and slightly exceeded corporate bond issuance (\$97 billion). Nonetheless, domestic corporate bond issuance rose from an annual average of \$276 million in 1997–99 to \$48 billion in 2000–01. International issues of equity, bonds, and syndicated loans represented about 17 percent of total corporate domestic and international funding in 1997–2001.

In Central Europe, domestic bank lending was also the largest source of corporate finance during 1997–2001; but privatization helped make domestic equity issuance (\$13 billion) the second largest source of funding. Domestic bond issuance remained limited.

In contrast to other regions, domestic bond issues (\$147 billion) became the dominant source of corporate funding in Latin America between 1997 and 2001. Indeed, local bond issues nearly equaled the total of international issues of bonds, equities, and syndicated lending (\$157 billion). Moreover, domestic bank lending contracted (by \$51 billion).

While local securities markets have played an increasingly important role as an alternative source of funding for the domestic corporate sector, they were an even more important source of funding for the public sector (see Table 4.3).<sup>12</sup> Domestic government bond

<sup>11</sup>The economies include China, Hong Kong SAR, Korea, Malaysia, Singapore, Thailand, Argentina, Brazil, Chile, Mexico, the Czech Republic, Hungary, and Poland. The countries were selected on the basis of the availability of data on corporate bond issuance. The data on local bond issuance cover various types of instruments, including fixed interest rate bonds, floating interest rate bonds, and bonds indexed to such items as the price level or the exchange rate. In general, it is not feasible to segment the data by type of instrument.

<sup>12</sup>The public sector is defined as the central government, government-owned financial institutions, and public sector enterprises.

**Table 4.3. Public Sector<sup>1</sup>**  
(In billions of U.S. dollars)

	1997	1998	1999	2000	2001	1997–2001
<b>Emerging markets<sup>2</sup></b>	<b>514.12</b>	<b>705.49</b>	<b>454.89</b>	<b>462.19</b>	<b>417.01</b>	<b>2,553.70</b>
<b>Domestic</b>	<b>452.41</b>	<b>662.15</b>	<b>413.91</b>	<b>417.34</b>	<b>380.48</b>	<b>2,326.30</b>
Equities						
Bonds	387.87	626.82	397.87	388.39	319.95	2,120.91
Bank loans	64.54	35.29	16.00	28.91	60.50	205.25
<b>International</b>	<b>61.71</b>	<b>43.33</b>	<b>40.98</b>	<b>44.85</b>	<b>36.53</b>	<b>227.40</b>
Equities						
Bonds	41.63	28.52	34.82	32.66	29.32	166.95
Bank loans	20.08	14.82	6.16	12.19	7.20	60.46
<b>Asia</b>	<b>31.58</b>	<b>112.07</b>	<b>88.31</b>	<b>95.21</b>	<b>153.78</b>	<b>480.95</b>
<b>Domestic</b>	<b>5.23</b>	<b>98.80</b>	<b>74.61</b>	<b>79.96</b>	<b>140.72</b>	<b>399.34</b>
Equities						
Bonds	6.85	42.70	45.88	55.75	94.18	245.37
Bank loans	-1.62	56.11	28.73	24.21	46.54	153.97
<b>International</b>	<b>26.35</b>	<b>13.26</b>	<b>13.69</b>	<b>15.25</b>	<b>13.06</b>	<b>81.61</b>
Equities						
Bonds	14.07	6.00	9.86	7.78	10.15	47.86
Bank loans	12.28	7.26	3.83	7.47	2.91	33.75
<b>Central Europe</b>	<b>39.68</b>	<b>55.49</b>	<b>59.10</b>	<b>54.13</b>	<b>78.48</b>	<b>286.89</b>
<b>Domestic</b>	<b>37.15</b>	<b>51.66</b>	<b>55.52</b>	<b>52.43</b>	<b>74.80</b>	<b>271.57</b>
Equities						
Bonds	42.93	47.31	59.45	56.77	64.76	271.22
Bank loans	-5.77	4.35	-3.93	-4.34	10.04	0.35
<b>International</b>	<b>2.53</b>	<b>3.83</b>	<b>3.59</b>	<b>1.70</b>	<b>3.68</b>	<b>15.32</b>
Equities						
Bonds	1.26	2.52	2.70	1.27	2.21	9.96
Bank loans	1.26	1.31	0.89	0.43	1.47	5.37
<b>Latin America</b>	<b>442.85</b>	<b>537.93</b>	<b>307.48</b>	<b>312.85</b>	<b>184.75</b>	<b>1,785.86</b>
<b>Domestic</b>	<b>410.02</b>	<b>511.69</b>	<b>283.78</b>	<b>284.94</b>	<b>164.96</b>	<b>1,655.40</b>
Equities						
Bonds	338.09	536.85	292.57	275.91	161.04	1,604.47
Bank loans	71.93	-25.16	-8.79	9.04	3.92	50.93
<b>International</b>	<b>32.83</b>	<b>26.24</b>	<b>23.70</b>	<b>27.90</b>	<b>19.79</b>	<b>130.46</b>
Equities						
Bonds	26.29	20.00	22.26	23.61	16.97	109.13
Bank loans	6.54	6.24	1.44	4.29	2.82	21.33

Sources: Capital Data; IMF, *International Financial Statistics*; S&P EMD; and Hong Kong monetary authorities.

<sup>1</sup>Incorporates both public sector and sovereign issuance data.

<sup>2</sup>Emerging markets: China, Hong Kong SAR, Korea, Malaysia, Singapore, Thailand, Argentina, Brazil, Chile, Mexico, Czech Republic, Hungary, and Poland.

issues have clearly been the dominant source of funding for the public sector throughout 1997–2001. Indeed, public sector domestic bond issuance was nearly 13 times larger than international foreign currency bond issues. This primarily reflects the heavy reliance on domestic bond issuance in Latin America and, to a lesser extent, in Central Europe. Nonetheless, even in Asia, domestic bond issuance is the largest single source of public sector funding.

Despite the dominant role of domestic bond markets in all regions, the financing mix for the public sector has differed sharply across the three regions. In Asia, the public sector has relied more on credit from the banking system than in other regions. Moreover, the public sector in Asia met a great proportion of their financing from international sources (17 percent) than in other regions. In contrast, the public sectors in Latin America and Central Europe



**Table 4.4. Total of All Sectors<sup>1</sup>**  
(In billions of U.S. dollars)

	1997	1998	1999	2000	2001	1997–2001
<b>Emerging markets<sup>2</sup></b>	<b>833.92</b>	<b>955.52</b>	<b>646.83</b>	<b>879.58</b>	<b>713.71</b>	<b>4,029.57</b>
<b>Domestic</b>	<b>669.89</b>	<b>865.16</b>	<b>545.55</b>	<b>741.41</b>	<b>609.84</b>	<b>3,431.85</b>
Equities	37.28	32.70	43.42	25.50	19.02	157.91
Bonds	399.02	638.51	408.34	486.40	434.42	2,366.70
Bank loans	233.59	193.90	93.75	229.48	156.36	907.10
<b>International</b>	<b>164.03</b>	<b>90.36</b>	<b>101.28</b>	<b>138.17</b>	<b>103.88</b>	<b>597.72</b>
Equities	18.42	5.59	15.76	31.90	8.81	80.47
Bonds	83.25	48.37	56.97	54.50	60.23	303.32
Bank loans	62.35	36.41	28.55	51.78	34.84	213.93
<b>Asia</b>	<b>238.88</b>	<b>268.86</b>	<b>308.76</b>	<b>396.05</b>	<b>395.77</b>	<b>1,608.33</b>
<b>Domestic</b>	<b>160.10</b>	<b>243.49</b>	<b>268.20</b>	<b>325.55</b>	<b>339.38</b>	<b>1,336.73</b>
Equities	28.11	16.69	35.52	20.65	10.76	111.73
Bonds	6.85	42.70	46.71	98.41	147.75	342.42
Bank loans	125.13	184.11	185.97	206.49	180.87	882.57
<b>International</b>	<b>78.78</b>	<b>25.37</b>	<b>40.56</b>	<b>70.50</b>	<b>56.40</b>	<b>271.61</b>
Equities	10.50	4.05	13.92	26.45	7.65	62.56
Bonds	33.67	9.40	18.10	20.24	31.65	113.06
Bank loans	34.61	11.92	8.54	23.82	17.10	95.98
<b>Central Europe</b>	<b>50.68</b>	<b>79.21</b>	<b>63.17</b>	<b>61.72</b>	<b>94.86</b>	<b>349.65</b>
<b>Domestic</b>	<b>42.51</b>	<b>70.34</b>	<b>55.38</b>	<b>55.03</b>	<b>88.09</b>	<b>311.35</b>
Equities	1.31	6.60	3.35	1.29	0.95	13.49
Bonds	43.43	47.59	59.78	56.94	65.08	272.83
Bank loans	-2.23	16.15	-7.75	-3.20	22.07	25.04
<b>International</b>	<b>8.17</b>	<b>8.88</b>	<b>7.79</b>	<b>6.69</b>	<b>6.77</b>	<b>38.29</b>
Equities	2.60	1.47	1.17	0.38	0.00	5.61
Bonds	2.53	4.65	4.48	2.09	4.07	17.83
Bank loans	3.05	2.76	2.14	4.22	2.69	14.86
<b>Latin America</b>	<b>544.35</b>	<b>607.45</b>	<b>274.90</b>	<b>421.81</b>	<b>223.08</b>	<b>2,071.59</b>
<b>Domestic</b>	<b>467.28</b>	<b>551.33</b>	<b>221.97</b>	<b>360.83</b>	<b>182.37</b>	<b>1,783.77</b>
Equities	7.86	9.41	4.55	3.56	7.31	32.69
Bonds	348.74	548.27	301.89	331.08	221.63	1,751.60
Bank loans	110.69	-6.35	-84.47	26.19	-46.57	-0.51
<b>International</b>	<b>77.08</b>	<b>56.12</b>	<b>52.93</b>	<b>60.98</b>	<b>40.72</b>	<b>287.82</b>
Equities	5.33	0.07	0.67	5.07	1.16	12.30
Bonds	47.06	34.31	34.39	32.16	24.51	172.43
Bank loans	24.69	21.73	17.87	23.75	15.05	103.09

Sources: Capital Data; IMF, *International Financial Statistics*; S&P EMDB; and Hong Kong Monetary Authorities.

<sup>1</sup>Incorporates sovereign issuance data.

<sup>2</sup>Emerging markets: China, Hong Kong SAR, Korea, Malaysia, Singapore, Thailand, Argentina, Brazil, Chile, Mexico, Czech Republic, Hungary, and Poland.

obtained most of their funding through domestic bond issuance (93 percent and 95 percent, respectively). Indeed, Latin American authorities issued nearly 15 times as many domestic bonds as international foreign currency bonds.

Despite the rapid expansion of local bond markets (see Table 4.4),<sup>13</sup> it remains unclear whether local securities markets have developed to the point that they will be able to offset banking system weaknesses that curtail bank lending or a loss of access to interna-

<sup>13</sup>The role of local derivatives markets in supporting both local market activities and capital flows was discussed in the December 2002 *Global Financial Stability Report*, Chapter IV.

tional markets.<sup>14</sup> Moreover, emerging markets will need ongoing access to global capital markets if they are to receive the transfers of technology and capital needed for sustained growth and development. Nonetheless, the continued development of local securities and derivatives markets could eventually provide an additional “cushion” to help mitigate the most adverse effects of banking crises and/or loss of access to international capital markets by creating a longer duration domestic source of funding that may not immediately dry up when a crisis occurs, and by providing some vehicles for hedging risks prior to a crisis.

### Common Practices in Emerging Local Securities Markets

Given the growing importance of local securities markets as a source of funding for both the corporate and public sectors, the question arises of what policies have proven most effective in stimulating the development of these markets. Some of these common practices are briefly reviewed in this section. There is broad agreement that improvements in market infrastructure and transparency, combined with better corporate governance and the development of benchmarks and domestic institutional investors, all contribute to the development of local securities markets.

While the development of market infrastructure, institutional investors, and transparency are uncontroversial steps, countries’ experience and the arguments behind some other aspects of the development of local securities markets (the “gray areas”) are less clear-cut. These include the use of indexed bonds, credit risk pricing, government policies toward the development of local stock

markets, the role of foreign investors, the development of local derivatives markets, and the sequencing of local securities markets reforms. Nonetheless, despite the ambiguities concerning policies in these areas, some conclusions seem warranted. For instance, the existence of indexed instruments and derivatives can contribute to lengthen and deepen fixed-income markets, but they may require careful monitoring to prevent undesirable mismatches and excessive leveraged positions. Moreover, stock market reforms that improve the conditions under which corporations issue and trade shares should be welcomed, but they should not involve the protection of local exchanges or the domestic brokerage industry from domestic or foreign competition. Similarly, foreign investors can contribute to the deepening of local markets, even if they may add to volatility during crises episodes.

In this section, some of these common practices are briefly reviewed.<sup>15</sup> In the following section other selected policy issues related to the development of local securities markets (the “gray areas”) are discussed.

### Market Infrastructure and Benchmarks

A large number of emerging markets have improved the market infrastructure for local securities and have established relevant benchmark yield curves (see IMF, 2002b). Although the provision of a robust financial infrastructure for trading, clearing, and settlement of transactions is generally considered to be a public good, many authorities have felt that the establishment of a liquid government security benchmark yield curve in order to facilitate the pricing of corporate securities is also a desirable policy objective (see, for

<sup>14</sup>Indeed, a strong banking system is likely to play a key role in facilitating the development of local securities and derivatives since banks in emerging markets often are key underwriters of securities, investors in bonds, providers of credit to securities houses, and suppliers of over-the-counter derivative products.

<sup>15</sup>Surveys on some of these issues, mostly for local bond markets, include World Bank and IMF (2001); BIS (2002); and OECD (2001).

instance, Yam, 2001). In principle, benchmarks could be provided by other instruments issued by quasi-public entities (such as the mortgage agencies in the United States) or even private instruments (including swaps), but it is unlikely that they would reach the level of issuance and liquidity needed to perform benchmark functions.<sup>16</sup> In Malaysia, for instance, mortgage (Cagamas) and asset management (Khazanah) agency bonds had been used as benchmarks, but their role has recently diminished in favor of government securities. Similarly, in the Czech Republic, some corporate bonds and the swap markets have traditionally acted as benchmarks, but the small size of corporate instruments and reduced foreign participation has reduced liquidity and paved the way for the introduction of government benchmark issues.

### Institutional Investors

Many emerging markets have realized the importance of developing a local institutional investor base to support local securities markets. The growth of such an investor base has usually been slow, however, and tight regulations on asset allocations have constrained the potentially beneficial role that they could bring to local securities markets.

Local pension funds have made a particularly important contribution to the development of local securities markets in Latin America and Central Europe, and their role is beginning to be felt in some of the Asian local markets. Following the lead of Chile in the 1980s, most Latin American countries have established private pension funds that have become an important source of demand for local securities, as well as for the development of market infrastructure and improved corporate governance and transparency. Similar

trends are emerging in Central Europe, where mandatory private pension funds were introduced somewhat later. The provident funds systems in many Asian countries are largely under public administration and to date have not played a very active role in local market development, but some countries are gradually outsourcing funds to private asset managers.

Most countries maintain tight regulation over pension funds' asset allocations to prevent excessive risk taking and to develop local markets, but this may be a double-edged sword. Some countries restrict funds' purchases of local equities, as they are perceived as a risky investment: an extreme case is Mexico, which until recently allowed no allocation to equities. The legislation was changed last year but the regulatory agency has not yet approved the implementation of the new portfolio allocations.<sup>17</sup> Other countries restrict the allocation to offshore instruments, seeking to develop local securities markets and to provide cheaper funds to local corporates. The recent experience in Argentina suggests, however, that local pension funds could be used as captive demand for government debt that could ultimately yield dismal returns. Indeed, in the second half of 2001, domestic holders of Argentine government bonds (primarily local pension funds and banks) were approached by the authorities to participate in a debt swap, and they were pressured into accepting new claims with lower interest rates and longer maturities.

### Corporate Governance and Transparency

A number of countries have adopted measures to improve transparency and corporate governance, as they see these as critical for local capital market development. Studies have shown that countries with less protection

<sup>16</sup>Even in the mature markets, the low credit risk and high liquidity features of government securities have made them natural providers of benchmark interest rates (see IMF, 2001).

<sup>17</sup>The Mexican Congress has also approved the use of derivatives, but the pension funds still have to comply with some prudential rules and operating requirements (see Cervera and Quedry, 2003).

for minority shareholders have less developed equity markets, that firms in these countries use less outside finance and have higher debt-equity ratios, making them more vulnerable to shocks.<sup>18</sup> In response to this evidence, as well as to high-profile shareholder conflicts, some countries have recently changed the laws governing capital markets (including Brazil, Chile, the Czech Republic, and Mexico) while others (including Korea, Malaysia, Hong Kong SAR, Poland, and Singapore) have approved codes of best practice designed to improve disclosure, protect minority shareholders' rights, and maximize shareholder value.

Better corporate governance can be implemented through several mechanisms, such as improved laws, enhanced regulation and supervision, and stronger enforcement of private contracts; and, whenever changing the law has proven difficult, other mechanisms have proven to be good substitutes to some extent. A number of studies have argued that investor protection and the judicial enforcement of contracts are stronger in common-law countries than in civil law countries.<sup>19</sup> However, the recent experiences of Brazil and Chile, among others, show how difficult it could be to change securities laws, which generally results in substantial changes in cash flow and control rights of existing shareholders. It took the Brazilian Congress about four years to approve a new corporate law that strengthened several aspects of corporate gov-

ernance in 2001, and the final legislation was watered down after protracted debates and negotiations. In particular, the law introduces a limit on the issuance of nonvoting shares (of 50 percent of total equity) only for new and nonlisted companies, but existing corporations may keep their two-thirds share of nonvoting stock even for future share issuance.<sup>20</sup> At the same time, the São Paulo Stock Exchange (BOVESPA) created the Novo Mercado, a new segment of the market where companies agree to the one-share-one-vote principle, allow for full tag-along rights, and enhanced corporate governance principles.

Similarly, the new capital market law in Chile establishes that any transaction between a buyer and a controlling group that would change control of the target company must be extended to remaining investors on a pro rata basis, but it leaves an opt-out option for three years.<sup>21</sup> Among countries perceived by market participants and academics as having relatively weak legal systems, Poland is usually cited as an example of a country where a strong stock market regulation has to a large degree acted as an effective substitute for judicial enforcement of contracts (Johnson and Shleifer, forthcoming).

While recent changes have improved the protection given to minority shareholders, some analysts see a risk of severely restricting the development of the market if overregulation imposes large costs on potential issuers. Minority shareholder rights in Brazil were

<sup>18</sup>See La Porta and others (2000). Corporate governance and the development of local capital markets have been associated with macroeconomic outcomes such as output growth and the severity of exchange rate crises and output volatility (see Johnson and Shleifer, forthcoming, and references therein).

<sup>19</sup>See, for instance, La Porta and others (2000) and references therein. The authors provide measures of investor protection for 49 countries and classify them by legal origin. Besides the provision of adequate (clear and regular) information about firm performance and external audits, investor protection is usually measured by the voting rights of minorities, their ability to exercise their vote by mail and call extraordinary shareholder meetings, to participate in executive boards and have mechanisms to sue or get relief from board decisions, as well as preemptive rights to new issues and tag-along rights in the case of changes in control—to protect them from dilution by controlling shareholders.

<sup>20</sup>The system was devised with the aim of providing family-owned companies an incentive to list while retaining control—indeed, ownership of 17 percent of a company would ensure control. See Barham (2001).

<sup>21</sup>Market participants, however, doubt that many corporates will take advantage of this provision as the large pension funds may have reduced incentives to invest in an opted-out company.

reduced in 1997 for macroeconomic reasons, namely to speed up and maximize the revenues from the privatization process. In a number of cases, foreign multinationals paid a premium price to obtain a controlling interest and then bought out the minorities at lower prices, but several shareholder conflicts led to the current reforms. However, some analysts worry that the government might now go too far in favoring minorities and scare away foreign investors. Similarly, a recent string of high-profile shareholder conflicts involving foreign investors in Poland has left fund managers worried that they may be seen as a threat to foreign strategic investors.<sup>22</sup>

### Selected Policy Issues

While the development of market infrastructure, institutional investors, and transparency are uncontroversial steps, countries' experience and the arguments behind some other aspects of the development of local securities markets are less clear-cut. This section considers other selected policy issues related to the development of local securities markets, in particular those issues that could affect macroeconomic policies and/or financial stability and capital flows.

#### Indexed Bonds

There is broad agreement that the introduction of inflation-indexed or inflation-linked bonds provides risk-sharing opportunities for issuers and investors, and that they contribute to complete and deepen local bond markets. The issuance of inflation-linked bonds by the government is generally seen as reducing the cost to private issuers of educating investors about the benefits of these instruments as well as reducing coordination problems in the adoption of alternative units of account. However, indexation may be diffi-

cult to reverse and foreign investors tend to shun indexed instruments. Moreover, indexation to foreign currencies—in particular, dollarization of local debt—could lead to financial instability and defeat the purpose of local debt as a self-insurance against lost access to international capital markets.

The important role of inflation-linked bonds in the development of a long-dated corporate bond market is best exemplified by the experience of Chile (see IMF, 2002b, Chapter IV). Most corporate bonds in Chile are indexed to the *Unidad de Fomento* (UF, a unit of account linked to the Chilean consumer price index), and analysts argue that the development of a government bond market in UF, together with the adoption of a legal framework that favors (and sometimes requires) the use of such unit of account, has been central to the development of a long-term market in corporate bonds (see, for instance, Walker, 2002). To satisfy the growing demand of local institutional investors, local corporates have issued bonds with up to 30-year maturities. Although the market for indexed bonds has been in existence for more than 20 years, it has tripled in size since 2000—when the worsening of external conditions pushed corporates to issue in the local market (see Figure 4.1). Maturities have also been extended, from an average of 10–15 years in the first half of the 1990s, to 15–20 years more recently.

The introduction of financial indexation could complicate the achievement of monetary policy objectives and could have temporary, undesirable effects in the development of local fixed income and derivatives markets. Analysts have argued that the provision of a hedge against inflation may remove the incentives for price stability, and that financial indexation could spill over to labor contracts and increase the costs of disinflation. In the case of Chile, the authorities have been trying

<sup>22</sup>While most of the issues discussed in this section refer to equity markets, weak transparency and corporate governance are also a significant constraint for the development of corporate bond markets (see Sharma, 2000).

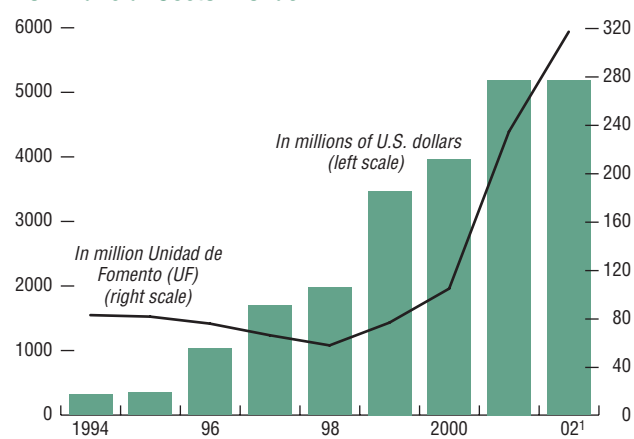
to nominalize the short end of the curve to improve the conduct of monetary policy, but the change initially disrupted the interest rate swap market and the pricing of long-term UF instruments with maturities of less than one year.<sup>23</sup>

Another drawback of indexation is that foreign investors seem to dislike the complication of calculating the performance of their investments in a generally unknown unit of account. International investors, in particular pension funds and even large asset managers, seem to prefer plain vanilla bonds, where they can take a clean exposure to the currency and the underlying credit.

A large number of countries, particularly in Latin America, have managed to develop their local bond markets mostly by issuing U.S. dollar-denominated or dollar-linked debt. Analysts have offered a number of reasons for the dollarization of local bonds, some of which are of a purely macroeconomic nature and others that are related to the development of local financial markets, or even to features of the international financial system.

The standard argument against governments issuing nonindexed bonds denominated in domestic currency is that, since they also control monetary policy, they have an incentive to inflate away their debts. However, as Calvo (2000) points out, this type argument would not apply to private debt—unless the monetary authority gives more weight to the welfare of debtors compared to that of creditors. Jeanne (2002) argues that a higher share of dollarized corporate debt may be the result of a firm's optimal financial choices, when the lack of a credible monetary policy leads to high domestic interest rates. Finally, if companies expect to be bailed out by governments—especially when a pegged exchange rate is abandoned—they will tend to issue mostly dol-

**Figure 4.1. Chile: Amount Outstanding of Private Nonfinancial Sector Bonds**



Source: Superintendencia de Valores y Seguros, Banco Central de Chile.  
<sup>1</sup>Estimate.

<sup>23</sup>The nominalization of the short end of the curve has deprived the fixed-for-floating UF interest rates swap market of the reference rate for the floating leg of the transaction.

lar-denominated debt (Dooley, 2000; and Burnside, Eichenbaum, and Rebelo, 2001).<sup>24</sup>

The limited development of local financial markets could also be a significant factor behind the large share of dollar-denominated debt in some emerging markets. For domestic firms choosing an optimal financing mix in an uncertain operating environment, domestic currency-denominated debt could insure against low-return scenarios, especially when low returns are associated with lost or restricted access to international capital markets. However, Caballero and Krishnamurthy (forthcoming) demonstrate that when local markets are underdeveloped and firms face credit constraints, corporates tend to underestimate the value of that insurance and issue excessive amounts of dollar-denominated debt. Firms that have good projects and could maintain access to international capital markets cannot channel resources to firms facing refinancing needs, because the latter are unable to pledge enough income to make their securities attractive to the former. More specifically, Caballero (2002) argues that the fact that large corporates moved inward to borrow in local markets during recent crises, rather than passing on their international access to smaller firms, suggests that local emerging markets remain underdeveloped and that this underdevelopment could amplify the effects of lost access to international markets.<sup>25</sup>

Some analysts have argued that the large share of foreign-currency-denominated emerging market debt is not just a result of weak national policies and institutions, but

also a consequence of the limited incentives for currency diversification by global investors.<sup>26</sup> Between 1993 and 1998, four countries (the United States, the United Kingdom, Japan, and Switzerland) issued only one-third of global debt, but more than two-thirds of global debt was denominated in their own currencies. Meanwhile, developing countries issued 10 percent of global debt but had only 1 percent denominated in their own currencies. Countries belonging to the euro area show a more balanced relationship, especially after the introduction of the euro. Among the emerging markets, the share of dollar-denominated debt is smaller in the EU accession countries and highest in Latin America. Eichengreen, Hausmann, and Panizza (2002) demonstrate that standard measures of weak policies—such as high inflation—do a relatively poor job of explaining the share of dollar-denominated bonds in emerging markets, and that the only robust determinant of what the authors call “original sin” is country size. As a result, the authors claim that the solution to this problem lies not just in strengthening domestic policies and institutions but also in overcoming the difficulties created by the structure and operation of international financial markets (see Box 4.1).

While dollar-linked debt provides a foreign currency hedge for investors, it can lead to financial instability if the excessive use of this instrument results in sizable currency mismatches that create solvency concerns about the issuers—like the sovereign and/or nonexporters whose tax revenues or receipts are mostly denominated in local currency.<sup>27</sup> The

<sup>24</sup>A credible monetary policy framework and a credible commitment not to bailout debtors are obvious policy implications of these analyses.

<sup>25</sup>The argument applies equally to bank lending as to local bonds. Caballero and Krishnamurthy (forthcoming) show that the limited development of local financial markets also reduces the incentives for foreign specialists—who would be willing to bring foreign capital to lend against domestic currency collateral—to enter the local market, reinforcing the underinsurance problem.

<sup>26</sup>Eichengreen, Hausmann, and Panizza (2002) note that transaction costs in a world of heterogeneous countries and network externalities may give a small number of vehicle currencies a special attractiveness.

<sup>27</sup>Similar issues arise in economies with dollarized deposits; see IMF (2003) for a discussion of prudential and crisis management aspects of dollarized banking systems.

#### Box 4.1. An International Solution for the Original Sin

Most emerging markets cannot issue international bonds denominated in their own currencies, a fact that Eichengreen, Hausmann, and Panizza (2002) refer to as the “original sin.” These economists recently proposed that the World Bank and other regional development banks sponsor a mechanism that would allow emerging markets to issue more debt denominated in their own currencies. The proposal is inspired by the fact that international financial institutions (IFIs) have issued almost half of all internationally placed bonds in exotic currencies during 1992–98. In most cases, the debt-service obligations were swapped back into U.S. dollars, providing additional support to foreign currency swap markets. The proposal involves a number of steps.

The first step would involve the development of a currency basket index that would include a well-diversified set of emerging market currencies and would contribute to overcome the relative small size of some issuers. The index would be calculated as the end-of-period exchange rate (divided by the CPI in the same month) and the weights in the index would be the countries’ relative GDPs adjusted at purchasing power parity. As an illustration, the authors constructed two indices and showed that their volatility is in line with that of some major currencies and that they display a negative correlation with real private consumption growth in seven mature economies. They conclude that these characteristics of the indices would make them an attractive form of diversification for institutional and retail investors.

The next steps would have the World Bank and other IFIs issue debt denominated in the index, eventually followed by similar efforts by the Group of Ten (G-10) countries. The World Bank could also convert the U.S. dollar loans made to the countries in the index into local currency CPI-indexed loans and elimi-

nate the currency mismatch generated by the issuance of the proposed bonds. Similarly, the authors argue that the G-10 countries could undertake currency swaps with each individual country in the index, allowing the former to eliminate the currency mismatch and providing the latter with a useful hedge against their original sin.

Finally, once a liquid market in that type of indexed-debt develops, investors may want to add credit risk to the index. They could do so by buying local currency debt of the countries in the index, which will facilitate the development of these local markets.

The proposal is innovative, but analysts are skeptical about its implementation and acceptance by investors, as well as its remaining risks for the IFIs. In particular, market participants, IFI representatives, and academics are concerned that the proposal may reduce incentives to address the more fundamental issues preventing a number of emerging markets from issuing in their own currency, namely weak macroeconomic policies and related poorly developed local financial markets. In addition, potential borrowers may prefer to use their access to IFI loans in terms of foreign exchange at favorable interest rates than local currency loans. Analysts are further worried about international investors’ lack of appetite for emerging markets inflation-linked bonds. They also suggest that, despite the adjustment of the index to each of the countries’ CPI, emerging markets could have an incentive to depreciate their currencies in the days before the coupons are fixed in order to lower their debt obligations. Moreover, they are concerned that the index would provide incentives to do this in a concerted fashion, creating another channel for contagion in foreign exchange markets. As a result, it may also be the case that the stronger emerging market players would not find it advantageous to participate in the index.



higher volatility of the exchange rate vis-à-vis the price level, especially during capital flow reversals, causes a deterioration in these issuers' balance sheet positions that is likely to magnify the initial problem of lost access to international capital markets and capital outflows.<sup>28</sup> This kind of vicious circle has meant that countries with a high degree of dollarization are likely to have more volatile output and capital flows. Indeed, Eichengreen, Hausmann, and Panizza (2002) estimate that the large share of dollar-denominated debt in emerging markets accounts for one-fourth of the difference in volatility (in GDP and capital flows) relative to mature markets.

### Credit Risk Pricing

Market participants regard the lack of sophistication in pricing credit risk as a major constraint to the growth of emerging corporate bond markets. But the development of a credit culture takes time, and it is unclear how much the authorities can do to speed up this process. A few aspects of the institutional structure that could be improved include the standardization of securities contracts, the requirement of ratings, and appropriate incentives for independent securities' research.

The standardization of bond contracts could contribute to a more accurate assessment of credit risk but it could also constrain the issuer's financial flexibility. In several emerging markets, bond contracts have a variety of features—coupons linked to different reference rates, embedded options and other enhancements, different types of collateral, covenants and priority rules—that make it difficult to price the credit risk associated with the bond. Some degree of standardization and homogeneity in bond contracts would facilitate the pricing of credit risk, and securi-

ties' regulators could ensure a minimum set of guidelines for such contracts. In Brazil, for instance, the authorities are discussing with market participants the optimal degree of standardization, as some issuers fear that too much standardization could restrict company-specific financing needs.

Rating agencies appear to be useful in credit markets, but it is unclear to what extent regulations have to force the use of their services or whether market participants themselves would find their credit assessments useful in their pricing or allocation decisions. The requirement that local pension funds invest only in rated instruments has contributed to the development of a rather sophisticated credit risk culture in Chilean local markets. Several other emerging markets are also requiring that issuers obtain one or two ratings for their corporate bond issues. The recent Brazilian experience shows, however, that regulations do not have to be the only driving force: even though local regulations require only one rating per issue, several issuers provide two in order to reassure investors.

Finally, independent research would contribute to better credit risk assessments and pricing, but there is little the regulatory authorities can do in this area. In many emerging markets, most research available is done by the underwriters, and this could create serious conflicts of interest. This is an issue also for equities, in particular in Asian local equity markets (see, for instance, Norton, 2002; and Davies, 2002).

### Local Equity Markets and the Role of Stock Exchanges

The sharp fall in domestic equity issuance in 2000–02, combined with structural developments in global equity markets, has raised

<sup>28</sup>Experience shows that the CPI is less volatile than the exchange rate, especially during crises; price indexation is also a superior alternative to indexation through floating interest rates, as the latter are also quite volatile in emerging markets.

doubts about the long-term prospects of initial public offerings (IPOs) in local markets as an alternative source of funding in emerging markets.<sup>29</sup> The bear market in equities has shrunk trading volumes literally everywhere, and the combination of a drop in IPOs associated with the reduction in privatization and a spate of delistings has called into question the viability of many stock exchanges in emerging markets. Moreover, the competitive pressures created by declining costs—associated with automated electronic trading systems and the migration of listings toward exchanges with greater liquidity and a lower cost of funding—have stimulated both changes in stock exchange governance and increased international integration of exchanges. These developments have in turn raised the question of the proper role of the public sector in either facilitating or promoting these structural changes.

While a well-functioning stock exchange can yield efficiency gains by providing a key source of funding for the corporate sector and of liquidity for investors, there has been considerable debate about the extent of public sector involvement in helping to develop stock exchanges. There is general agreement that the development of equity markets will be facilitated by a sound macroeconomic environment, open access to foreign investors, political stability, and enforceable property rights. Properly designed and executed privatization programs can also stimulate the development of equity markets, and improvements in corporate governance and the protection of minority shareholders' interests are generally moves in the right direction.<sup>30</sup>

Paradoxically, the stock exchanges that have followed the best practices and have successfully developed their local markets are also encountering the highest degree of outward migration in capital raising, listing, and trading activities. However, as Claessens, Klingebiel, and Schmukler (2002) also note, migration has been beneficial in many ways: corporates have been able to raise capital at lower costs by tapping wider investor bases and investors have been able to trade shares at more liquid exchanges.<sup>31</sup> The authors conclude that emerging markets should focus on creating the conditions—such as improving shareholder rights and the quality of local legal systems—that allow corporations to issue and trade shares abroad in an efficient way, rather than adopt measures designed to protect local exchanges. In addition, they follow Steil (2001) and suggest that countries, especially those with small markets, should work toward having their local trading systems tightly linked or merged with global markets.

There are, however, several “gray” areas where there is much less of a consensus about the appropriate degree of official intervention.<sup>32</sup> One such area is the extent of corporate disclosure and accounting standards that should be mandated by the official sector. For example, Hong Kong SAR's stock exchange recently backed away from a proposal to introduce quarterly financial reporting, on the basis that it would increase companies' costs and could lead investors and management to become too focused on short-term profits—an issue also debated in some mature markets. Also, while everyone agrees that appropriate

<sup>29</sup>These concerns are particularly serious in the case of small stock markets. See IMF (2002a) for further details on domestic equity markets as a source of funding and an investment alternative for international investors. Structural issues in global and emerging equity markets are dealt with in IMF (2001).

<sup>30</sup>Claessens, Klingebiel, and Schmukler (2002) show that countries that follow these types of policies tend to have larger and more liquid stock exchanges. However, they also show that as such fundamentals improve, the degree of migration to other exchanges also increases.

<sup>31</sup>Pagano and others (2001), also show that the need for greater liquidity appears to be one of the most important factors in the decision to cross list shares and issue American Depositary Receipts/Global Depositary Receipts.

<sup>32</sup>The focus here is on structural policies. The issue of official intervention in stock and bond markets in the context of speculative attacks is dealt with in Chapter V of IMF (1999).

accounting standards should be put in place, there is considerable debate about whether these should follow Generally Accepted Accounting Principles (GAAP) or International Accounting Standards (IAS). In the end, either standard would probably work well as long as it is generally applied and enforced.

Similarly, there is no general agreement about the degree to which consumer protection and more general supervision of the exchanges should be undertaken by self-regulatory organizations (SROs) or by the authorities. While consumer protection issues (especially those related to retail investors) are often overseen by official agencies, analysts suggest that the most appropriate mix is likely to depend on the mix of local retail and institutional investors (with greater reliance on SROs being relied upon more heavily when institutional investors dominate), the degree of sophistication of investors and other exchange participants, and the degree of market expertise in the official sector. Whatever mix is decided upon, it is generally agreed that regulation and supervision should not be designed to stifle competition.

Perhaps the most contentious issue in many emerging markets is the role of the authorities in promoting changes in the ownership structure of the stock exchanges, particularly from a mutual to a publicly owned corporate structure. A growing number of analysts are recommending that the authorities support the demutualization of their exchanges. In many instances, this intervention is justified on the basis of a collective action problem—namely, that under a mutual ownership structure some vested interests (particularly small brokers) may block the adoption of new computer and telecommunication technologies that allow for more efficient trading platforms because such platforms would allow for more direct access to the trading floor that could reduce brokerage revenues (see, for instance, Steil, 2001). These analysts also see a role for the official sector to help develop the telecommunication sector, especially when there are

large fixed costs associated with developing such systems. However, others argue that these decisions should be left up to the exchanges themselves and that competitive pressures (especially from abroad) will bring about the necessary changes.

### The Role of Foreign Investors in Local Markets

Foreign investors are an important source of demand for local securities, and several emerging markets have opened their local markets to foreign investors in an attempt to widen and diversify the investor base. Foreign participation in local equity markets appears to be larger than in local bond markets, but measurement of the latter is generally problematic and tends to underestimate foreign presence (see IMF, 2002b). Although there may be differences in investment strategies among different types of foreign investors, market participants perceive foreign investors as playing a supportive role in local markets. For instance, recent inflows to Central European countries motivated by the prospect of convergence with the European Union have been generally perceived as driven by “real money” institutional investors that have a positive long-term view on the region and contribute to the depth of local markets. Also, foreign investors usually impose positive pressure for developing robust market infrastructure and transparent market practices.

Some analysts are concerned, however, that foreign investors may be less informed than local ones and may contribute to market volatility and crises. The empirical evidence on this, however, is rather limited and inconclusive. Some argue that foreign investors seeking diversification benefits may not have an incentive to invest in the necessary information required to understand local markets and may be more prone to herding behavior; while others state that because foreign investors tend to be quite sensitive to risk and to manage actively their portfolios, they may make local markets more volatile and prone

to crises. These hypotheses are difficult to test empirically and only a couple of experiences may shed light on the issue.

Analysts have suggested that it was local rather than foreign investors that were the first to leave the Mexican local market in December 1994 (see IMF, 1995; and Frankel and Schmukler, 1996). Kim and Wei (2002) examine the transactions of different types of portfolio investors in Korea before and during the Asian crisis. They find that nonresident institutional investors were always positive feedback traders, while resident investors were contrarian traders before the crisis but became positive feedback traders during the crisis.<sup>33</sup> Choe, Kho, and Stulz (1999) also study transaction data from the Korean stock market during the crisis and find evidence for return-chasing and herding among foreign investors before the crisis period, but no evidence for a destabilizing effect of foreign investors over the entire sample period.

### Derivatives Markets

Local derivatives markets have grown in some of the large emerging markets, but notional amounts and trading volumes remain much smaller than in the mature markets.<sup>34</sup> The main reasons for the underdevelopment of local derivatives markets are the underdevelopment of the underlying securities markets themselves, as well as tight regulations that restrict their use by banks and investors.

Once the underlying securities markets reach a certain level of development, the efficiency gains of derivative products—in terms of unbundling and reallocating risks—become apparent and, barring regulatory obstacles, derivatives markets are likely to thrive. An example of how such gains can be achieved

was recently provided in Brazil, with the unbundling of U.S. dollar-linked debt instruments into a pure local fixed-income instrument and a foreign currency swap. Investment banks in Brazil were selling U.S.-dollar-linked debt to mutual funds while simultaneously entering into two swap contracts: one that involved transferring the currency exposure to the banks—as the funds were interested in a pure fixed-income exposure—and another one that involved the sale of a dollar hedge to corporate customers that held U.S. dollar debts. To reduce the steps (and the associated intermediation spreads) involved in providing foreign exchange protection to end users, the central bank moved to replace U.S.-dollar-linked debt with fixed-income instruments and a foreign currency swap. The changes lowered transaction costs and better accommodated the financial needs of different investors.<sup>35</sup>

Despite a growing acceptance that derivatives can contribute to the efficiency and stability of local financial markets, regulators in a number of emerging markets remain concerned about the potential risks involved in using instruments that have quite often been associated with financial crises. However, as noted in IMF (2002c), financial derivatives have at times magnified volatility and the effects of a financial crisis, but they were seldom the cause of the crises themselves. From the string of crises in the 1990s, it has become clear that the problem was not the use of derivatives per se, but the underlying weaknesses in domestic and global financial systems as well as shortcomings in macroeconomic policies (see also Khor, 2001). In the aftermath of crises, a large number of emerging markets have strengthened their regulatory and supervisory framework—

<sup>33</sup>Positive feedback traders are those that buy past winners and sell past losers; negative feedback traders (or contrarians) follow the opposite trading strategy.

<sup>34</sup>Chapter IV in IMF (2002c) presents estimates of the size of emerging derivatives markets.

<sup>35</sup>By end-December 2002, U.S.-dollar-linked debt had fallen to \$40 billion (from \$77 billion the previous year), while the level of swaps outstanding had reached \$26 billion.

including for the use of derivatives. Market participants note that in some markets the main constraint to the development of onshore derivatives markets is not the legislation, but the regulators' concern about the lack of knowledge and understanding of the products (see, for instance, Ransley, 2002).

Analysts also note that there are risks related to the nonexistence of hedging instruments, or to the fact that they may be developed offshore. For instance, the recent rapid expansion of local bond markets was supported by a low interest rate environment, and some market participants are concerned that investors may not have instruments available to hedge against the forthcoming reversal in the interest rate cycle. Derivatives bring together hedgers and speculators that normally tend to increase the liquidity and smooth price changes in the underlying securities. Problems arise when the market becomes one-sided, as in Brazil's foreign exchange market by mid-2002, when the only supplier of foreign exchange hedge was the sovereign itself.<sup>36</sup> Similarly, as the experience with equity markets demonstrates, if capital controls or other regulatory obstacles send markets offshore, it may be difficult to reverse the flow and develop the onshore markets.

The possibility that the rapid growth of derivatives may outstrip the risk management capabilities of end-users and the supervisory capabilities of regulatory authorities is nevertheless a legitimate concern. Regulators, therefore, have to strike a balance between the need to allow for better risk management and market development and the risk of increased exposure to potential vulnerabilities. The first line of defense against the latter are sound and credible macroeconomic policies. The second line of defense are policies geared toward enhanced risk management capabilities of financial institutions, com-

bined with up-to-date risk assessment capabilities of regulators. Both kinds of measures point to the need to foster transparency and prompt disclosure of relevant information. A number of emerging markets have strengthened financial regulation and adopted Basel-type guidelines for capital adequacy—including for derivatives instruments—and this would go a long way toward preventing and mitigating derivatives-related vulnerabilities. Frequent contact with market participants and the discussion and consultation of regulatory changes with the industry are also useful for the early detection of these vulnerabilities. Finally, investor protection arguments suggest that, even if retail investors exposures are not large, efforts should be made to clarify the nature of risks associated with different instruments, either through warnings in the contracts or other means of investor education.

### Sequencing

The development of local securities markets raises a number of interesting questions about the optimal sequencing vis-à-vis the development of other financial markets and institutions—such as money markets and banks—as well as other macroeconomic and regulatory policies. Broadly speaking, a comparison of different types of financial systems, and their evolution over time, is a complex issue and there are no simple answers to what would be an optimal development strategy (see Allen and Gale, 2000). Nevertheless, a gradual and complementary approach is beneficial as a general rule, though in some cases, a given sequencing may be preferable.

Some analysts suggest that it may be optimal to develop first a deep local debt market before opening up the capital account. An example of the former strategy is the path fol-

<sup>36</sup>The availability of derivative instruments and markets to trade them should not be confused with the availability of an abundant supply of "hedge"—the latter being related to the credibility of macroeconomic policies and the willingness to take one side of the market.

lowed by Australia (see Eichengreen and Hausmann, 1999), which has developed a deep local bond market and has some 44 percent of its external debt denominated in local currency.<sup>37</sup> This seems to be the path chosen by two large emerging markets—China and India—that have sizable local debt markets and have not yet fully opened up to foreign investors (see IMF, 2002b; and BIS, 2002). The potential benefits of developing local markets in isolation from international markets have to be weighed against traditional arguments against capital controls (such as misallocation of resources, increased costs of funding, and evasion; see Dooley, 1996), as well as to the fact that market participants argue that controls have in some instances reduced liquidity and hence hindered the development of local securities markets.<sup>38</sup>

Developing external debt markets may also have positive benefits for the development of local securities markets, as firms that access international markets learn issuance techniques that can be transferred later on to their local issuance programs. Countries such as Chile and Mexico have developed first an external bond market for the sovereign, which was then followed by the corporate sector, and afterwards used that experience to grow their local markets.<sup>39</sup>

The development of well-functioning money markets appears to be a critical first step in developing corporate bond markets (see Schinasi and Smith, 1998), as well as derivatives markets. Money markets provide an anchor to the short end of the yield curves and are critical for the pricing of fixed-income securities and derivatives. Korea and Thailand provide examples of the difficulties of developing a secondary bond market and the associated derivatives markets without the support

of a well-developed money market (see Cha, 2002; and IMF, 2002b).

Although local securities markets can provide an alternative source of funding to the banking sector, especially during banking crises (Greenspan's "spare tire"), a sound and well-regulated banking system can be a necessary complement to the development of local securities markets. Banks can play a number of supporting roles for securities markets: they can be large holders of securities, underwriters and market makers, issuers, guarantors, as well as arrangers of securitizations (see Hawkins, 2002). The large involvement of banks in the securities business requires appropriate regulations ("firewalls") to prevent the issuance of bonds to repay loans and subsequent sale of the bonds to an asset manager subsidiary at higher-than-market prices. Banking and bond markets could be developed in tandem, building appropriate regulatory and institutional framework to encompass both. However, in the absence of a large institutional investor base, domestic debt holdings may become too concentrated in the banking system. This could in turn constrain the resolution of debt crises, as haircuts on the debt could compromise the solvency of the banking system.

Finally, local securities markets remain highly segmented in most regions, and a number of measures would have to be undertaken to develop fully integrated, regional markets. Despite their recent growth and deepening, Asia's domestic currency bond markets, for instance, are largely insulated from each other. Domestic investors in several countries are not allowed to invest in international markets, and foreign investors are not attracted by the low yield and costly hedges. Analysts note that, besides the removal of controls and har-

<sup>37</sup>The authors caution, however, against attempts to follow this path—namely to reverse the opening of the capital account—for countries that have already followed alternative sequencing strategies.

<sup>38</sup>Chile is sometimes mentioned as an example; see Cifuentes, Desormeaux, and Gonzalez (2002).

<sup>39</sup>Yuan (2000) shows that issuance of sovereign bonds in international markets creates informational externalities that improve the liquidity of corporate bonds.

monization of taxes, several institutional aspects of bond markets—such as contracts, underwriting, and settlement conditions—would have to be standardized to some extent before a pan-Asian market could be created (see, for instance, Parsons, 2001). However, a series of overlapping proposals to develop a regional bond market in the region may focus the authorities' efforts on the removal of some of these barriers and contribute to speed up the process.<sup>40</sup>

### Concluding Remarks

Local securities and derivatives markets have grown substantially over the last five years. Despite the rapid expansion of local markets—in particular, local bond markets—they have not yet developed enough to provide full insurance against the closure of banking or international markets. Nonetheless, continued efforts to develop these markets could eventually provide a significant cushion against future closures. In particular, these efforts should focus on continuing to adopt measures geared toward strengthening market infrastructure, developing benchmarks and local institutional investors, and improving corporate governance and transparency. Moreover, despite the existence of ambiguities concerning some policies (the “gray areas”) related to the development of local securities and derivatives markets, several measures could still be undertaken, while monitoring and controlling their potentially negative side effects. For instance, well-developed derivatives markets provide efficient instruments for risk management, and experience shows that sound macroeconomic and regulatory policies can largely mitigate their potentially negative

effects on financial stability. Similarly, indexed instruments contribute to increase duration in fixed-income markets, but excessive indexation to foreign exchange could lead to balance sheet mismatches and unstable debt dynamics and, hence, should be discouraged.

### References

- Allen, Franklin, and Douglas Gale, 2000, *Comparing Financial Systems* (Cambridge, Mass.: MIT Press).
- Bank for International Settlements, 2002, *The Development of Bond Markets in Emerging Economies*, BIS Papers No. 11 (Basel: BIS).
- Barham, John, 2001, “A Compromise Solution,” *Latin Finance* (October), pp. 40–43.
- Bubula, Andrea, and Inci Ötker-Robe, 2002, “The Evolution of Exchange Rate Regimes Since 1990: Evidence from De Facto Policies,” IMF Working Paper No. 02/155 (Washington: International Monetary Fund).
- Burnside, Craig, Martin Eichenbaum, and Sergio Rebelo, 2001, “Hedging and Financial Fragility in Fixed Exchange Rate Regimes,” *European Economic Review*, Vol. 45 (June), pp. 1151–93.
- Caballero, Ricardo, 2002, “Coping with Chile’s External Vulnerability: A Financial Problem,” in *Economic Growth: Sources, Trends, and Cycles*, ed. by Norman Loayza and Raimundo Soto (Santiago: Central Bank of Chile).
- , and Arvind Krishnamurthy, forthcoming, “Excessive Dollar Debt: Financial Development and Underinsurance,” *Journal of Finance*.
- Calvo, Guillermo A., 1998, “Capital Flows and Capital Market Crises: The Simple Economics of Sudden Stops,” *Journal of Applied Economics*, Vol. 1 (November), pp. 35–54.
- , 1999, “Contagion in Emerging Markets: When Wall Street Is the Carrier.” Available on the Internet at <http://www.bsos.umd.edu/econ/ciecalvo.htm>.
- , 2000, “Capital Markets and the Exchange Rate: With Special Reference to the Dollarization Debate in Latin America” (unpublished; Center

<sup>40</sup>These include work aimed at developing local bond markets by APEC, the ASEAN+3 group, and a recent proposal by the Asian Cooperation Dialogue (ACD). The latter would involve a set of Asian governments launching a regional bond fund, financed by Asian central banks, that would “catalyze” larger investments from institutional investors and would invest initially in U.S. dollars, euro, and other nonregional currency bonds, later diversifying into local currency bonds from government and corporate issuers.

- for International Economics, University of Maryland).
- \_\_\_\_\_, and Carmen M. Reinhart, 2000, "When Capital Inflows Suddenly Stop: Consequences and Policy Options," in *Reforming the International Monetary and Financial System*, ed. by Peter B. Kenen and Alexander K. Swoboda (Washington: International Monetary Fund).
- Cervera, Alonso, and Audra Quedry, 2003, "Polling Mexico's Pension Funds," Credit Suisse First Boston (CSFB) Emerging Market Economics.
- Cha, Hyeon-Jin, 2002, "Analysis of the Sluggish Development of the Secondary Market for Korean Government Bonds, and Some Proposals" (unpublished; Seoul: The Bank of Korea, Financial Markets Department, May).
- Choe, Hyuk, Bong-Chan Kho, and René M. Stulz, 1999, "Do Foreign Investors Destabilize Stock Markets? The Korean Experience in 1997," *Journal of Financial Economics*, Vol. 54 (October), pp. 227–64.
- Cifuentes, Rodrigo, Jorge Desormeaux, and Claudio Gonzalez, 2002, "Capital Markets in Chile: from Financial Repression to Financial Deepening," in *The Development of Bond Markets in Emerging Economies*, BIS Paper No. 11 (Basel: Bank for International Settlements).
- Claessens, Stijn, Daniela Klingebiel, and Sergio L. Schmukler, 2002, "Explaining the Migration of Stocks from Exchanges in Emerging Economies to International Centers," World Institute for Development Economic Research (WIDER) Discussion Paper No. WOP 2002/94 (Helsinki: United Nations University—WIDER).
- Davies, Ben, 2002, "Equity Research—In Crisis?" *AsiaMoney* (November).
- Dooley, Michael, 1996, "A Survey of the Literature on Controls over International Capital Transactions," *IMF Staff Papers*, International Monetary Fund, Vol. 43 (December), pp. 639–87.
- \_\_\_\_\_, 2000, "A Model of Crises in Emerging Markets," *The Economic Journal*, Vol. 110 (January), pp. 256–72.
- Eichengreen, Barry, and Ricardo Hausmann, 1999, "Exchange Rates and Financial Fragility," NBER Working Paper No. 7418 (Cambridge, Mass.: National Bureau of Economic Research).
- \_\_\_\_\_, and Ugo Panizza, 2002, "Original Sin: The Pain, the Mystery, and the Road to Redemption," paper presented at the IDB Conference on Currency and Maturity Matchmaking: Redeeming Debt from Original Sin (November).
- Feldstein, Martin, 1999, "Self-Protection for Emerging Market Economies," NBER Working Paper No. 6907 (Cambridge, Mass.: National Bureau of Economic Research).
- Fischer, Stanley, 2001, "Exchange Rate Regimes: Is the Bipolar View Correct," *Journal of Economic Perspectives*, Vol. 15 (Spring), pp. 3–24.
- Frankel, Jeffrey, and Sergio Schmukler, 1996, "Country Fund Discounts and the Mexican Crisis of 1994: Did Local Residents Turn Pessimistic Before International Investors?" *Open Economies Review*, Vol. 7 (Supplement 1), pp. 511–34.
- Greenspan, Alan, 1999, "Lessons from the Global Crises," remarks before the World Bank Group and the International Monetary Fund, Annual Meetings Program of Seminars (Washington, September 27). Available on the Internet at <http://www.federalreserve.gov/Boarddocs/Speeches/1999/199909272.htm>.
- Habermeier, Karl, and Shogo Ishii, forthcoming, "Exchange Arrangements and Foreign Exchange Markets—Developments and Issues," World Economic and Financial Surveys (Washington: International Monetary Fund).
- Hawkins, John, 2002, "Bond Markets and Banks in Emerging Economies," in *The Development of Bond Markets in Emerging Economies*, BIS Paper No. 11 (Basel: Bank for International Settlements).
- International Monetary Fund, 1995, *International Capital Markets: Developments, Prospects, and Key Policy Issues*, World Economic and Financial Surveys (Washington).
- \_\_\_\_\_, 1999, *International Capital Markets: Developments, Prospects, and Key Policy Issues*, World Economic and Financial Surveys (Washington).
- \_\_\_\_\_, 2001, *International Capital Markets: Developments, Prospects, and Key Policy Issues*, World Economic and Financial Surveys (Washington).
- \_\_\_\_\_, 2002a, *Global Financial Stability Report*, World Economic and Financial Surveys (Washington, June).
- \_\_\_\_\_, 2002b, *Global Financial Stability Report*, World Economic and Financial Surveys (Washington, September).
- \_\_\_\_\_, 2002c, *Global Financial Stability Report*, World Economic and Financial Surveys (Washington, December).
- \_\_\_\_\_, 2003, "Financial Stability in Dollarized Economies," (unpublished; Washington:



- Monetary and Exchange Affairs Department, International Monetary Fund).
- Jeanne, Olivier, 2002, "Why Do Emerging Economies Borrow in Foreign Currency?" paper presented at an IMF Research Department Seminar (Washington, March 6).
- Johnson, Simon, and Andrei Shleifer, forthcoming, "Privatization and Corporate Governance," in *Governance, Regulation and Privatization, East Asia Seminar on Economics, Volume 12*, ed. by Takatoshi Ito and Anne O. Krueger (Chicago: The University of Chicago Press).
- Khor, Hoe E., 2001, "Derivatives and Macroeconomic Management in Post-Crisis Asia" (Monetary Authority of Singapore).
- Kim, Woonchan, and Shang-Jin Wei, 2002, "Foreign Portfolio Investors Before and During a Crises," *Journal of International Economics*, Vol. 56 (January), pp. 77–96.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 2000, "Investor Protection and Corporate Governance," *Journal of Financial Economics*, Vol. 58 (Issues 1–2), pp. 3–27.
- Norton, Guy, 2002, "The Fall and Rise of Rouble Bonds," *Euroweek* (October).
- Organization for Economic Cooperation and Development, 2001, "Bond Market Development in Asia" (Paris: OECD).
- Pagano, Marco, Otto Randl, Alisa Röell, and Josef Zechner, 2001, "What Makes Stock Exchanges Succeed? Evidence from Cross-Listing Decisions," CEPR Discussion Paper, No. 2683 (London: Centre for Economic Policy Research).
- Parsons, Nick, 2001, "The Bond Markets in Asia," *Euroweek* (June).
- Prasad, Eswar, and Shang-Jin Wei, forthcoming, "Effects of Financial Globalization on Developing Countries: Some Empirical Evidence," IMF Occasional Paper (Washington: International Monetary Fund).
- Ransley, Anuska, 2002, "Eastern Europe: Game On," FOW (May).
- Reinhart, Carmen M., and Kenneth S. Rogoff, 2002, "The Modern History of Exchange Rate Arrangements: A Reinterpretation," NBER Working Paper No. 8963 (Cambridge, Mass.: National Bureau of Economic Research).
- Schinasi, Garry, and R. Todd Smith, 1998, "Fixed Income Markets in the United States, Europe, and Japan: Some Lessons for Emerging Markets," IMF Working Paper No. 173/98 (Washington: International Monetary Fund).
- Sharma, Krishnan, 2000, "The Underlying Constraints on Corporate Bond Market Development in South East Asia," United Nations, DESA Discussion Paper No. 14 (September).
- Steil, Benn, 2001, "Borderless Trading and Developing Securities Markets," in *Open Doors: Foreign Participation in Financial Systems in Developing Countries*, ed. by Robert E. Litan, Paul Masson, and Michael Pomerleano (Washington: Brookings Institution Press).
- Walker, Eduardo, 2002, "The Chilean Experience with Completing Markets with Financial Indexation," in *Inflation and Monetary Policy*, ed. by Le-Fort and Schmidt-Hebbel (Santiago: Central Bank of Chile).
- World Bank and IMF, 2001, *Developing Government Bond Markets: A Handbook* (Washington: World Bank).
- Yam, Joseph, 2001, "Developing and Positioning Hong Kong's Bond Market," speech delivered at the Forum on China's Government Securities Market in the New Century (Hong Kong, November 19). Available on the Internet at <http://www.info.gov.hk/hkma/eng/speeches/index.htm>.
- Yuan, Kathy, 2000, "Information Externality of Sovereign Bonds on the Liquidity of Corporate Bonds: An Empirical Exploration" (unpublished; Cambridge, Mass.: MIT, April).