CHAPTER IV SELECTED TOPIC: EMERGING LOCAL BOND MARKETS

A key policy prescription to prevent or ameliorate financial crises in emerging markets has been the development of local bond markets, and this strategy has been embraced by a number of policymakers and international organizations (see World Bank and IMF, 2001). From a macroeconomic perspective, local bond markets could soften the impact of lost access to international capital markets or bank credit by providing an alternative source of funding.[1] From a microeconomic perspective, they could help create a wider menu of instruments to deal with inherent currency and maturity mismatches in emerging markets (see Eichengreen and Hausmann, 1999 and HKMA, 2001).

In part as a result of the implementation of this policy prescription, emerging local bond markets have grown considerably over the past five years, and they are gradually becoming an alternative source of funding for both sovereigns and corporates. Also, as it becomes easier to invest across borders, local instruments are also attracting the interest of global fixed-income investors. In this chapter, we assess recent trends in emerging local bond markets, with particular attention to how they relate to global bond markets and international capital flows.

Size and Structure of Global Bond Markets

The size of global bond markets reached $37 trillion by the end of 2001, and overall the issuance of international bonds has expanded relative to domestic issuance. Indeed, international bonds constitute 18 percent of the global market, compared to 11 percent in 1997. Moreover, cross-border trading of bonds has become a key component of international capital flows (see Merrill Lynch, 2001). While such cross-border trading has affected emerging as well as mature markets, foreign participation in local emerging bond markets remains limited. Nonetheless, global bond fund managers have recently shifted their global benchmarks away from pure government indices, and are increasingly looking at investment opportunities in emerging bond markets (see *Emerging Markets Investor*, 2001).

Emerging bond markets have been growing faster than other bond markets, but so far they are just 5.6 percent of the global market (Table 4.1). Although foreign investors have tended to focus on foreign currency external debt issued by emerging markets, the size of the local bond markets is four times as large (i.e., $1,645 billion versus $432 billion of external bonded debt; see Table 4.1).

The structure of emerging bond markets as a whole is similar to that of the mature markets, with around half of bonds issued by governments and the rest evenly distributed between corporate, financial, and international bonds (Table 4.1). There are, however, some notable regional differences. While Latin American markets are dominated by domestic government and international bonds (55 and 32 percent of the total, respectively), Asian bond markets have a larger share of corporate bonds (17 percent, even larger than the 14 percent in the United States) and a relatively smaller share of international bonds. The rest of the emerging market universe is also dominated by government bonds, with 73 percent of the total market—a

[1]See Greenspan, 1999. However, while bond markets and banks have served as backup forms of financial intermediation in the United States, empirical evidence for a broader set of countries shows a positive correlation between bank lending and bond issuance—see Hong Kong Monetary Authority (HKMA), 2001.

Table 4.1. Size and Structure of the Global Bond Market in 2001
(Nominal value in billions of U.S. dollars)

			Domestic							
		Percent of	Government		Financial institutions		Corporate		International[1]	
Country	Total Bonds Outstanding	Global Bond Market	Billions of U.S. dollars	Percent of total	Billions of U.S. dollars	Percent of Total	Billions of U.S. dollars	Percent of total	Billions of U.S. dollars	Percent of total
United States	17,598.2	47.3	8,557.1	48.6	4,367.4	24.8	2,452.5	13.9	2,221.2	12.6
Euro area[2]	7,861.5	21.1	3,210.4	40.8	1,751.7	22.3	355.4	4.5	2544	32.4
Japan	6,104.0	16.4	4,439.8	72.7	713.8	11.7	693.2	11.4	257.2	4.2
Other mature markets	3,537.2	9.5	1,123.0	31.7	775.6	21.9	403.5	11.4	1,235.4	34.9
Subtotal	35,100.9	94.4	17,330.3	49.4	7,608.5	21.7	3,904.6	11.1	6,257.8	17.8
Emerging Markets										
Asia	1,098.7	3.0	541.7	49.3	223.9	20.4	186.5	17.0	146.6	13.3
Latin America	694.3	1.9	384.4	55.4	67.4	9.7	23.4	3.4	219.1	31.6
Eastern Europe, Middle East, Africa	284.4	0.8	207.7	73.0	4.2	1.5	6.4	2.3	66.2	23.3
Subtotal	2,077.4	5.6	1,133.8	54.6	295.5	14.2	216.3	10.4	431.9	20.8
Total	37,178.3	100.0	18,464.1	49.7	7,904.0	21.3	4,120.9	11.1	6,689.7	18.0

Source: Bank for International Settlements.
[1]Includes bonds issued by governments, financial institutions, and corporates in international markets.
[2]Euro area includes a total of 11 members of the euro zone, excluding Luxembourg.

share comparable to that of the Japanese bond market.

Local Bond Markets as an Alternative Source of Funding

The rapid growth of emerging local bond markets over the last five years has been a natural outcome of financial crises. It also stems from the desire of governments, banks, and corporates to substitute domestic for external sources of finance to protect themselves against the on-off nature of access to international capital markets. It remains unclear, however, to what extent local markets will be able to substitute for international markets, especially in times of crisis.

Until the mid-1990s, emerging local bond markets were generally underdeveloped, with restricted demand for fixed income products, a limited supply of quality bond issues, and inadequate market infrastructure. However, particularly in the period after the Asian crisis, many governments have made determined efforts to overcome these limitations. Nonetheless, there are regional differences in how rapidly the markets have developed. In Asia, the growth of local bond issuance has been driven by the need to recapitalize banking systems and more recently to finance expansionary fiscal policies. The lack of bank credit has also contributed to some increase in corporate bond issuance, not just in Asia but also in Latin America. In the latter region, the rapid growth of local institutional investors has driven the growth of local bond markets, together with large refinancing needs of the corporate sector in a difficult external environment. Finally, the buildup of institutions—such as debt management agencies—and the harmonization of regulations in the process of accession to the EU, has contributed to the growth of these markets in the Czech Republic, Hungary, and Poland—the so-called CE-3 countries.

A number of countries have made substantial progress in the development of government bond markets, but progress has been slower in corporate bond markets.[2] While this has been

[2]As in previous reports, only a select sample of emerging markets is covered in this chapter. These countries are those that have been visited by the staff in the past two years, and where information on recent developments is most up-to-date. As a result, some markets, such as India and South Africa, have not been included.

the sequence of market development observed in many countries, there is nevertheless a risk that improved bond markets and debt management strategies could lead to excessive government debt issuance and crowding out of the corporate sector.

Government Bond Markets

While the increased issuance of government bonds has primarily reflected the financing of fiscal imbalances, there have been cases where governments have engaged in deliberate efforts to develop debt markets even without immediate fiscal needs. A large number of emerging markets have adopted debt management policies aimed at ensuring that "the government's financing needs and its payment obligations are met at the lowest cost over the medium to long run, consistent with a prudent degree of risk" (see World Bank and IMF, 2001). A secondary but sometimes equally prominent objective has been the development of the bond market through a number of policy initiatives. These initiatives have included increasing market depth and transparency through preannounced and regular issuance programs, establishing benchmark issues and yield curves, as well as improving market infrastructure and developing a local investor base. In addition, Chile, Hong Kong SAR, and Singapore have also made efforts to develop their bond markets even in the absence of explicit fiscal needs.

Increasing Market Depth and Establishing Benchmark Issues

Significant progress has been made in the development of local bond markets in Asia, with most progress concentrated in the government bond segment. In Thailand, for instance, the outstanding value of the total bond market has increased from 10 percent of GDP in 1996 to 34 percent of GDP by the end of 2001, with the largest increase in the government bond segment. The Ministry of Finance has established and announced a regular program for government bond and treasury bill issuance, with maturities ranging from 1 to 20 years. Similarly, the outstanding stock of government bonds increased by more than 10 percentage points of GDP in 1998 in both Korea and Malaysia (to 16.1 and 31.5 percent of GDP respectively; see Table 4.2), and have continued to grow. Both markets continue to be dominated by corporate bonds, but governments have also made recent efforts to develop benchmark yield curves. Before 1998, market participants used three-year guaranteed corporate bonds as benchmarks in Korea, but since then the authorities have increased issuance and unified several issues into standardized treasury bonds, which are currently issued for up to 10-year maturities. Despite government efforts to develop a benchmark curve, market participants note that establishment of the curve in Malaysia has been complicated by the plurality of contenders for the title of "government bond" (see Moody's, 2002).

China's government local bond market has grown in a remarkably short period of time to become the largest in the region (excluding Japan). The total outstanding of treasury bonds reached 20 percent of GDP in 2001, and analysts expect the stock of tradable bonds, currently at $145 billion (13 percent of GDP) to grow to around $200 billion by the end of 2002 (or 16 percent of GDP). In 2001, the treasury added 15-year and 20-year bonds to the existing stock. The government has a quarterly issuance calendar and around 50 institutions participate in the auctions. More recently, the authorities have announced that they may use the local bond market to finance the restructuring of the banking sector.

For governments that have consistently run fiscal surpluses, the development of the local bond market involves a series of costs, especially when there are few high-return uses for the funds raised. The Hong Kong SAR authorities nonetheless argue that public-good aspects of bond markets justify some degree of official

Table 4.2. Selected Emerging Local Bond Markets: Amounts Outstanding
(In percent of GDP)

		1993	1994	1995	1996	1997	1998	1999	2000	2001
Emerging markets	***Domestic bonds***	***19.4***	***22.9***	***24.3***	***25.8***	***24.2***	***32.1***	***33.5***	***33.2***	***35.6***
	Public sector	***12.2***	***13.3***	***13.8***	***15.3***	***15.9***	***20.0***	***21.8***	***22.0***	***23.7***
	Financial institutions	***4.5***	***6.8***	***7.3***	***7.0***	***5.8***	***8.0***	***7.0***	***6.5***	***6.9***
	Corporate sector	***2.6***	***2.9***	***3.2***	***3.5***	***2.6***	***4.1***	***4.7***	***4.7***	***5.0***
Asia	*Domestic bonds*	*22.3*	*24.6*	*25.2*	*25.9*	*21.4*	*33.2*	*35.5*	*36.0*	*37.9*
	Public sector	*11.5*	*12.1*	*11.8*	*12.3*	*11.5*	*17.3*	*19.8*	*20.6*	*21.5*
	Financial institutions	*6.5*	*7.6*	*8.1*	*8.0*	*6.1*	*9.1*	*8.6*	*8.4*	*8.9*
	Corporate sector	*4.2*	*4.9*	*5.3*	*5.7*	*3.9*	*6.8*	*7.1*	*7.0*	*7.4*
China	Domestic bonds	11.0	12.2	13.3	14.6	18.0	24.1	27.8	30.1	28.7
	Public sector	7.4	8.5	9.4	10.3	12.5	16.6	19.2	21.0	19.6
	Financial institutions	2.7	3.0	3.3	3.7	4.8	6.6	7.7	8.3	8.3
	Corporate sector	0.9	0.7	0.6	0.5	0.7	0.9	0.8	0.8	0.7
Hong Kong SAR	Domestic bonds	7.6	12.4	16.9	21.3	23.7	24.8	26.7	26.4	26.9
	Public sector	3.2	5.3	6.2	7.9	7.8	8.2	9.4	10.2	11.9
	Financial institutions	4.1	7.0	9.5	12.2	14.4	14.4	14.8	13.2	12.0
	Corporate sector	0.3	0.1	1.4	1.2	1.5	2.2	2.5	3.0	3.1
Malaysia	Domestic bonds	63.5	72.0	70.2	72.5	56.9	85.8	83.6	85.3	93.4
	Public sector	44.7	42.2	36.5	29.9	19.4	31.5	31.3	31.6	35.0
	Financial institutions	10.0	14.5	16.2	19.2	16.8	20.5	9.1	6.5	7.9
	Corporate sector	8.8	15.3	17.6	23.3	20.8	33.8	43.1	47.2	50.6
Singapore	Domestic bonds	20.3	19.3	18.8	18.8	16.3	22.6	29.9	31.6	37.4
	Public sector	16.7	15.8	15.8	16.1	13.9	20.9	25.7	27.0	32.9
	Financial institutions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Corporate sector	3.6	3.6	3.0	2.7	2.4	1.6	4.2	4.6	4.6
South Korea	Domestic bonds	45.2	46.0	46.4	45.9	27.3	75.7	65.4	58.4	69.3
	Public sector	9.6	8.9	8.4	8.4	5.3	16.1	17.9	15.9	18.3
	Financial institutions	21.3	22.0	21.8	20.1	10.9	27.4	21.6	19.4	23.2
	Corporate sector	14.3	15.1	16.2	17.4	11.2	32.1	25.9	23.0	27.8
Thailand	Domestic bonds	10.4	9.6	9.5	10.4	7.0	21.9	26.0	25.5	33.7
	Public sector	7.6	7.0	6.7	6.4	4.3	17.3	21.1	21.2	26.2
	Financial institutions	0.6	0.5	0.7	1.3	0.9	1.4	0.8	0.3	2.5
	Corporate sector	2.2	2.1	2.1	2.8	1.9	3.0	3.9	4.0	5.0
Latin America	*Domestic bonds*	*15.0*	*20.9*	*23.4*	*26.4*	*28.8*	*31.8*	*31.3*	*29.6*	*32.3*
	Public sector	*12.0*	*13.7*	*15.8*	*19.3*	*21.7*	*23.0*	*24.6*	*23.8*	*26.2*
	Financial institutions	*2.3*	*6.5*	*7.1*	*6.5*	*6.0*	*7.7*	*5.4*	*4.4*	*4.5*
	Corporate sector	*0.7*	*0.6*	*0.5*	*0.6*	*1.0*	*1.1*	*1.3*	*1.4*	*1.5*
Argentina	Domestic bonds	9.7	12.3	10.6	11.5	12.6	14.0	15.8	17.4	14.9
	Public sector	7.9	9.5	8.4	8.5	8.4	9.4	10.8	12.5	10.2
	Financial institutions	0.9	1.7	1.1	1.7	2.3	2.3	2.3	2.3	2.0
	Corporate sector	0.8	1.1	1.2	1.3	1.9	2.4	2.6	2.6	2.7
Brazil	Domestic bonds	17.7	31.7	32.9	38.2	42.6	49.6	55.5	50.0	61.4
	Public sector	13.3	18.6	21.3	28.0	32.7	36.4	45.1	41.9	51.8
	Financial institutions	4.4	13.1	11.5	10.1	9.4	13.0	10.0	7.8	9.3
	Corporate sector	0.0	0.0	0.0	0.1	0.6	0.3	0.4	0.4	0.3
Chile	Domestic bonds	37.2	43.9	39.7	42.6	44.2	42.6	45.2	46.6	48.3
	Public sector	26.0	30.0	26.2	27.8	29.1	26.6	27.9	28.3	28.4
	Financial institutions	6.9	9.4	10.0	11.7	12.8	13.1	13.7	13.3	13.8
	Corporate sector	4.3	4.4	3.3	3.0	2.3	2.9	3.6	4.8	6.0
Mexico	Domestic bonds	12.3	8.8	7.7	7.3	9.6	8.9	11.8	12.5	14.4
	Public sector	11.1	7.7	6.3	5.7	7.9	7.1	9.6	10.1	12.1
	Financial institutions	0.1	0.6	0.8	1.0	0.7	0.6	0.9	0.8	0.8
	Corporate sector	1.0	0.6	0.6	0.5	1.0	1.2	1.3	1.5	1.5

involvement in their development—in particular those related to market infrastructure (see Yam, 2001), and the Singapore authorities appear to have been willing to incur costs related to the development of a government yield curve under the belief that the benefits of becoming a

Table 4.2 *(concluded)*

		1993	1994	1995	1996	1997	1998	1999	2000	2001
Central Europe	*Domestic bonds*	*21.8*	*22.0*	*21.8*	*21.5*	*21.1*	*25.5*	*26.6*	*27.9*	*31.9*
	Public sector	*21.7*	*21.2*	*20.3*	*19.8*	*19.1*	*23.6*	*24.4*	*25.4*	*29.9*
	Financial institutions	*0.1*	*0.6*	*0.9*	*1.0*	*1.0*	*1.0*	*1.0*	*1.1*	*0.9*
	Corporate sector	*0.1*	*0.3*	*0.5*	*0.7*	*1.0*	*0.9*	*1.1*	*1.3*	*1.2*
Czech Republic	Domestic bonds	10.9	17.5	23.3	21.5	23.6	39.4	45.8	45.8	45.3
	Public sector	10.3	14.1	17.5	14.6	15.8	31.3	36.6	35.0	36.1
	Financial institutions	0.6	2.7	3.8	4.2	4.5	4.7	4.8	5.5	4.6
	Corporate sector	0.3	1.0	1.9	2.6	3.2	3.3	4.2	5.3	4.8
Hungary	Domestic bonds	25.4	28.6	26.4	33.2	30.0	33.2	33.7	33.4	41.2
	Public sector	25.2	28.4	25.7	32.8	28.4	32.1	32.4	32.0	39.9
	Financial institutions	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00
	Corporate sector	0.3	0.2	0.4	0.4	1.5	1.1	1.2	1.4	1.3
Poland	Domestic bonds	24.7	21.0	19.6	17.9	17.4	18.3	17.6	20.3	25.2
	Public sector	24.7	21.0	19.6	17.9	17.4	18.3	17.6	20.3	25.2
	Financial institutions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Corporate sector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Sources: Bank for International Settlements; and IMF staff estimates.

regional bond center dominate the implied costs.[3]

Both financial centers have undertaken explicit measures to help develop the market. The Hong Kong dollar bond market was one of the first domestic bond markets to develop in Asia, and it has grown from 3 percent of GDP in 1993 to 12 percent of GDP in 2001 (Table 4.2). The HKMA has established a government bond curve up to 10 years through the Exchange Fund Notes and Bills program, but issuance is limited by the currency board arrangement and ample fiscal reserves. Given the limited size of the outstanding issues, some market participants argue that the interest rate swap curve constitutes a more liquid benchmark. Singapore has taken a much more proactive approach to develop the bond market and accelerated the issuance of SGS: the outstanding amount has doubled from 14 percent of GDP in 1997 to 33 percent of GDP in 2001. In August 1998, the Monetary Authority of Singapore began issuing 10-year SGS and in September 2001 it extended the yield curve to 15 years. Meanwhile, issue size has been increased to around 2.5 billion Singapore dollars (US$1.5 billion) and the monetary authority has conducted bond purchase operations to rechannel liquidity from small-size, off-the-run SGS issues into larger benchmark bonds. As a result of these efforts, in April 2001, Singapore became the first Asian country outside Japan to be included in J.P. Morgan's Global Bond Index.

The growth and deepening of government bond markets in the CE-3 countries has been supported by strong institutional development, in particular by the early establishment of public debt management agencies. For example, the Government Debt Management Agency of Hungary (AKK) and the public debt department of Poland's Ministry of Finance have pursued issuance strategies aimed at minimizing their exposure to foreign exchange and rollover risks,[4] while developing local government bond markets. In the local market, Poland's issuance strategy has been designed to increase the liquidity and extend the maturity of the treasury securi-

[3]As yields in Singapore Government Securities (SGS) have generally been lower than those of G-7 securities, the costs of developing the market—including those of managing securities issuance and operating the SGS trading system—are likely to have been rather small.

[4]As a result of this strategy, foreign currency debt as a percent of total government securities has declined from 53 percent in 1997 to 42 percent in 2001 in Poland, and from 41 percent to less than 30 percent in Hungary in the same period.

ties market, but it has also been required to adjust to budgetary pressures. Issuance of existing series of securities has been increased at the expense of the introduction of new series, the number of auctions has been reduced, and reverse auctions have been recently introduced to increase the size of key benchmark issues. Despite plans to lengthen the maturity structure of government securities, budgetary pressures and successive reductions in short-term interest rates led to an increase in the issuance of treasury bills in the second half of 2001, and the share of such instruments in total debt increased to 18 percent by the end of 2001 from 16 percent in December 2000. However, this was countered by the sovereign's recent issuance of the first 20-year local bond from the region.

Hungary's AKK has been instrumental to the development of a liquid government debt market and has recently focused its issuance strategy on smoothing the transition from a forint-denominated debt market to a euro-denominated debt market. The agency realizes that the separation of the external and domestic debt markets will become redundant with the adoption of the euro. As a result, market practices have been brought in line with those of the euro zone—including price calculations, quotations, and the use of annual coupon payments. The agency has also continued to lengthen the maturity of government debt and this has been reflected in the recent issuance of a 15-year forint-denominated bond.

The Czech Republic also extended the government local yield curve to 15 years in January 2001. However, treasury bills with maturities of up to one year still form over one half of the government debt, which increase rollover risk at a time when the deficit is about 5 percent of GDP.

In Latin America, Brazil has the largest and fastest growing government bond market: domestic public debt has grown from 33 percent of GDP in 1997 to 52 percent in 2001 (Table 4.2). By the end of 2001, the total amount of public debt amounted to $325 billion (65 percent of GDP), of which $270 billion and $55 billion corresponded to domestic and external bonds, respectively. The authorities have undertaken a series of measures to improve the conduct of public debt management, but macroeconomic instability has hampered efforts to build up a benchmark yield curve. The main focus in terms of risk management has been the avoidance of refinancing risks. In this respect, the authorities have successfully extended the average maturity of the domestic debt—from around 10 months in 1999 to 35 months at the end of 2001—and have achieved a smoother redemption profile, with the share of debt maturing in 12 months falling to 26 percent of the total by the end of 2001, compared to 53 percent in 1999. However, the objective of lower refinancing risk was achieved at the expense of higher market and credit risk, as investors required indexation to overnight interest rates and exchange rates to extend maturities. The resulting increase in indexed debt (see Box 4.1), combined with money and foreign exchange market pressures, has led to a complicated debt dynamic that was associated with a recent shortening of maturities. Indeed, as concerns about political developments intensified in the April–June 2002 period, the average maturity of the sovereign's domestic debt fell from about 35.5 months in April to 32.9 months in June. The decline in June was particularly pronounced because exchanges involving debt whose return was linked to the short-term money market interest rate led average maturities on these instruments to fall from 34.7 months in May to 30.4 months in June.

In contrast to Brazil, Chile has experienced a long period of government surpluses and it has focused on building an external yield curve to serve as benchmark for private issuance. Following what the authorities saw as an inadequate assessment of the fundamentals underlying Chilean corporate debt in the aftermath of the Asian crisis, they came to the view that the existence of sovereign external debt instruments would increase foreign investors' research on the country's fundamentals and would contribute to a more accurate pricing of corporate instruments in international markets. Also, the

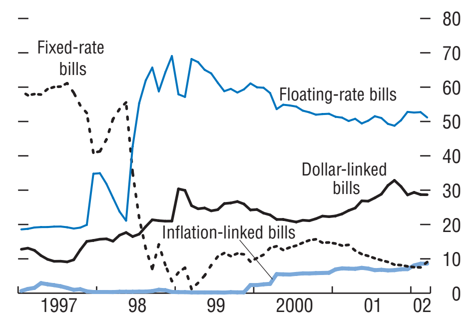
Box 4.1. Indexed Bonds

Indexed bonds are becoming more popular among investors and issuers in the mature markets, but they have a long history in inflation-prone emerging markets (see Merrill Lynch, 2002). The development of inflation indexed (or inflation linked, IL) bonds in the mature markets started with the introduction of IL Gilts in the United Kingdom in 1981, in response to highly volatile and negative real returns experienced by pension funds. A number of other mature markets developed in the 1980s and 1990s, with the United States and France the latest to join in 1997 and 1998, respectively. However, IL bonds became popular in high inflation emerging markets during the 1970s, prompting a debate of the costs and benefits of such instruments that still continues.

The discussion of the costs and benefits of IL bonds indexation is usually focused on the macroeconomic consequences of indexation, but the issue has important implications for financial markets. Proponents of IL bonds argue that they may lower the cost of funding the government and that they provide information on inflation expectations and incentives for governments to keep inflation down. Detractors of IL bonds make the case that indexation of financial assets may spill over to labor markets and contribute to make inflation more persistent and costly. However, there is almost a consensus that IL bonds provide risk-sharing opportunities to investors and issuers alike, and that they contribute to complete asset markets in an efficient way. There is less agreement though on what role the government should have in the provision of such contracts, but a case can be made for the government to publish and coordinate the use of an IL unit of account to be used in such contracts (see, for instance, Campbell and Shiller, 1996).

Recent experiences in Latin America provide some useful insights on the cost and benefits of IL bonds, as well as on other aspects of indexation. In particular, they show that indexation could help deepen and lengthen both private and public bond markets, but that they need to be complemented with stable macroeconomic policies and capital market reforms that favor the creation of a large institutional investor base.

Brazil Domestic Federal Debt Composition
(In percent of total)



Source: IMF staff estimates.

The creation of the *Unidad de Fomento* (UF), an indexed unit of account, together with the development of a strong institutional investor base, has played a central role in the development of the local Chilean bond markets. In particular, most corporate bonds in Chile are indexed to the UF, and this contributed to the recent growth of the corporate bond market, as well as to the long maturities achieved in local currency bonds. Local corporates generally issue bonds in two tranches, one of five to eight years, targeted to pension funds, and another of 20 years or more, targeted to insurance companies. Tight regulations on asset and liability management for insurance companies have generated demand for long-dated paper, and issuers have gone up to 30 years. Analysts argue that, had it not been for the fact that made the UF mandatory for many financial contracts, and for the development of a UF-denominated government bond market, the fixed income market would have developed toward shorter-term, dollar-denominated securities (see Walker, 2002).

In Brazil, efforts to deindex the stock of domestic debt during the successful Real Plan of 1994–98 led to a relatively large share of fixed-

rate debt (approximately 60 percent of the total, see the Figure) by mid-1997. However, increased instability in the wake of the 1998–99 financial crisis reduced drastically the share of fixed-rate bonds, and the authorities had to increase the supply of bonds indexed to the overnight interest rates and the U.S. dollar in order to reduce refinancing risk. Also, the authorities did not want to lock-in high real interest rates or undo the deindexation (to inflation) achieved during the Real Plan. As a result, IL bonds have regained importance only gradually, and most of the rest of the financial system is indexed to overnight interest rates.[1] Only recently a market for inflation-linked corporate bonds has reached volumes that are still a fraction (in terms of GDP) of those seen in Chile, in maturities of three to six years.

[1]IL bonds were around 10 percent of total government debt in early 2002, compared to 20 percent in the United Kingdom.

Chilean central bank has built a local yield curve in *Unidades de Fomento* (UFs, a unit of account linked to the evolution of the CPI), and is currently trying to increase the issuance of peso-denominated debt. This process of nominalization of the central bank debt, aimed at improving the conduct of monetary policy since August 2001, has generated a number of transitional issues as investors get used to the change in numeraire. In particular, the change has disrupted the swap market and the pricing of long-term UF instruments with remaining maturities of less than one year. The authorities have stopped the issuance of UF-denominated debt of less than 360 days, and have successfully issued peso-denominated bonds up to two-year maturities. They hope to gradually extend the peso curve up to five years, with the aim of having a coexistence of peso and UF instruments between two and five years, leaving the UF to continue to dominate the long end of the curve.

The main driver behind the growth of the local debt market in Mexico continues to be the federal government, which has financed moderate deficits exclusively in the domestic market since 1996. In the aftermath of the 1994–95 financial crisis, the authorities increased the average life of the stock of domestic debt from eight months in 1995 to 25 months in 2001, in part through the issuance of floating rate bonds and inflation-indexed bonds. More recently, sustained macroeconomic stability and a low level of government debt (at just over 12 percent of GDP in 2001; Table 4.2) has allowed the sovereign to increase substantially the issuance of fixed-rate peso-denominated debt. Issuance of three- and five-year instruments since the first half of 2000 and of 10-year instruments since July 2001 has allowed the sovereign to bring the share of fixed-rate debt to 15 percent of the total by the end of 2001. The authorities have also taken a number of steps to increase the liquidity of these benchmark instruments, by reopening existing issues and reducing the frequency of auctions.

Improving Market Infrastructure

A number of authorities have improved their trading and clearing and settlement systems. In particular, the HKMA has recently focused on bringing an international dimension to this aspect of the local bond market. Following the buildup of a paperless clearing, settlement, and custodian system by the Central Money Markets Unit (CMU), and the introduction of a Real Time Gross Settlement (RTGS) payment system and a delivery-versus-payment system for securities in the mid-1990s, the HKMA linked up with Euroclear and Clearstream, as well as with other local markets—including Korea in 1999 and China in 2002. And more recently, it replicated the Hong Kong dollar infrastructure for the U.S. dollar, though use of the facility has so far been moderate.

Many countries have also created a system of primary dealers, but some have not done it or do not even consider it necessary for the adequate functioning of the market. In Chile, for instance, bonds issued by the central bank are placed directly through a public auction in which banks and institutional investors can participate. As they have provided a stable source of demand for the securities, the authorities have not found it necessary to create a system of primary dealers (see Cifuentes, Desormeaux, and Gonzalez, 2002). However, the risks associated with the lack of primary dealers, in terms of undesirable pressures around key auction dates, were exemplified with Poland's experience in early February 2002. According to market participants, the announcement by the Monetary Policy Committee that it intended to stop reducing interest rates (rates had been cut by more than 900 basis points in the previous 12 months), combined with the prospect of a sharp increase in bond issuance (to settle indebtedness problems with the pensions funds) and a relative heavy amortization schedule, led a large number of foreign investors to close their positions in the five-year bonds; domestic investors then reportedly rapidly joined in the sale of five-year bonds. Traders in London argued that the lack of primary dealers made it difficult for the Polish authorities to gauge market sentiment in critical junctures. The authorities noted that they are working on a primary dealer system but were rather skeptical as to how much better channels of communication with market participants would help in the management of key auctions.

Developing a Local Investor Base

In Asia, banks continue to be large players in local bond markets. Banks typically hold a large share of short-term government debt to meet liquidity requirements and they dominate the short-end of the bond market. However, bond market issuance has recently outpaced the growth of banking sector liabilities in most Asian markets, reflecting an expansion and broadening of the investor base. Long-term institutional investors, such as life insurance companies, have attempted to increase the duration of their assets, and this has made them ready purchasers of longer maturity government securities. However, the asset needs of insurers are unlikely to be met only through government securities, as the yield on such instruments is insufficient to meet the guaranteed returns offered on life insurance products. Hence, in the current low rate environment, insurance companies have been forced to look for a yield pickup in corporate bonds or credit derivatives or to seek gains through more active trading.

The development of a local institutional investor base, as a result of pension system and capital market reforms, also contributes to the increasing depth and stability of local bond markets—especially in the CE-3 and Latin American bond markets. Pension funds hold around 10 percent of total government debt in Hungary, and a somewhat lower percentage in Poland; but they are a steadily growing and stable source of demand. In Latin America, where pension reform started even earlier than in central Europe, pension funds are major players in local bond markets. In Mexico, for instance, private pension funds hold one-fourth of local government bonds, and the percentage is even larger in Chile—where assets under management are 54 percent of GDP.

Several emerging market countries have also developed a thriving domestic mutual fund industry. For instance, the mutual fund industry in Brazil has more than $150 billion (30 percent of GDP) in assets under management and is the largest holder of government securities together with the banking industry. The number of local mutual funds and their total funds under management has also increased rapidly in Thailand, where they have become important investors in the government bond market. The authorities have made interest income and capital gains from local-bond mutual funds tax exempt, and this has led to the development of more than 80 fixed-income mutual funds with total net asset value of $1.8 billion.

Retail investor demand for bonds has also grown in Asia, through, among other ways, di-

rect sales of bonds through bank branches. In Thailand, retail investors have bought a large share of government bonds to take advantage of the yield pickup relative to bank deposits. Similarly the People's Bank of China has just approved new rules to allow commercial banks to offer sales of interbank-traded government bonds to meet an increased demand from retail investors. Generally, government bonds have paid slightly higher coupons than the one-year savings deposit rates mandated by the central bank.

Foreign participation in local government bond markets has declined markedly after the Russian crisis of 1998, and despite government efforts to develop bond markets, and the removal of capital and exchange controls, foreign participation seems to be meaningful only in the CE-3 countries. The foreign investor base for local bonds in Hungary and Poland is relatively large, as "convergence plays," which take advantage of the declining path of interest rates driven by the expected convergence of inflation rates to euro zone rates, continue to attract substantial foreign interest. Foreigners hold around 12 to 15 percent of total outstanding debt in both markets, but participants estimate that the percentage is closer to 30 to 40 percent when measured relative to total marketable debt or in terms of turnover. In Korea and Mexico, foreign holdings of local debt are around 2 to 3 percent of total outstanding stocks, but here also the figures appear to be an underestimate. Market participants attribute the even lower foreign participation in Brazilian and Chilean local securities markets to a number of factors. Despite the removal of most capital controls and the simplification of investment regulations, the existence of withholding taxes, and the possibility of discretionary increases in other taxes, such as the Financial Operations Tax, together with the use of indexation and non-standard pricing conventions, deter foreigners from buying Brazilian local securities. Foreign investors have had limited interest in local Chilean bonds because of historically low interest rates and the widespread use of UF-denominated instruments.

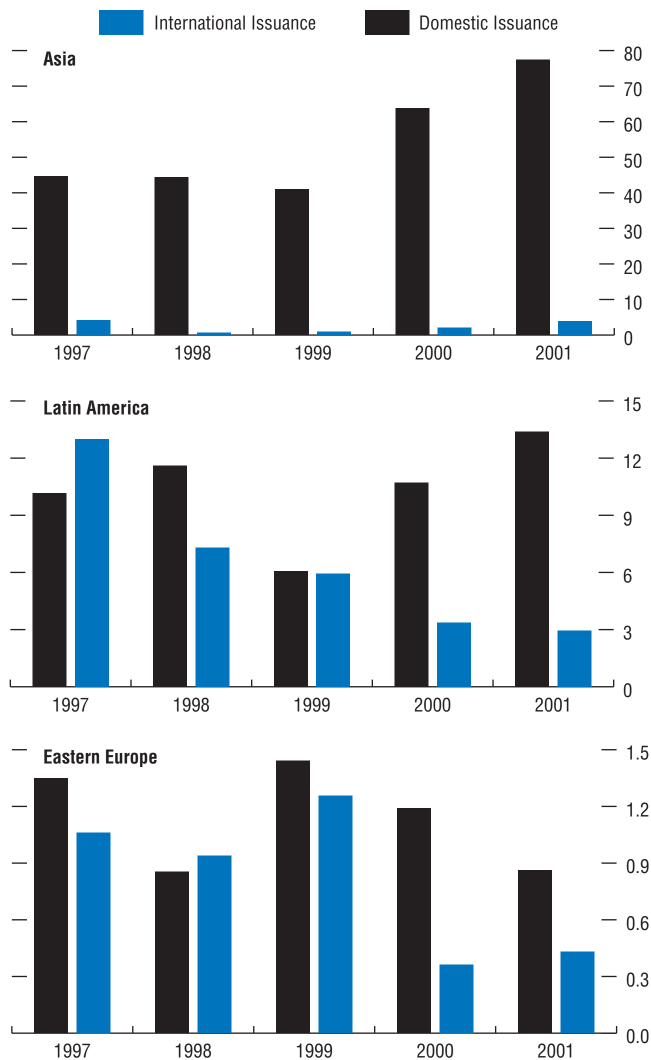
Corporate Bond Markets

The authorities' efforts to develop local bond markets, combined with the corporate sector efforts to diversify away from refinancing and foreign exchange risks, have contributed to an expansion also of local corporate bond markets in most emerging markets—with the exception perhaps of countries in central Europe. Despite this growth, access to local bond issuance has been restricted to top-tier corporates, and it is unclear whether the resilience and size of most of the markets are large enough to consider these markets a meaningful, alternative source of funding. Also, in most cases increased local bond issuance has been a result of a favorable interest rate environment, which may be reversed if interest rates rise again.

Since 1997, corporate issuance of local bonds has far exceeded issuance on international markets (see Figure 4.1). Both Korea and Malaysia already had large corporate bond markets before the crises (11 and 21 percent of GDP in 1997, respectively; Table 4.2).[5] The dearth of bank financing, as well as the need to restructure balance sheets, gave an additional impetus to these markets, and they more than doubled in size over the past five years. The Korean authorities supported the market through periods of rapid growth and instability after the 1997–98 crisis (see below), as the market struggled to develop a true corporate credit culture. Malaysia's Securities Commission introduced a series of measures to streamline the capital raising process, which, combined with the process of corporate restructuring, has supported further growth of an already deep corporate bond market. The cost of bond issuance has reportedly fallen below that of bank loans in Malaysia, and bond issuance has dominated bank lending as a

[5]As most Korean corporate bonds were guaranteed by banks, some analysts considered the bond market to be an extension of the banking system.

Figure 4.1. Corporate Bond Issuance in Selected Emerging Markets
(In billions of U.S. dollars)



Sources: IMF staff estimates based on data from local central banks and securities commissions, as well as Capital Net and Bondware.
Notes: Eastern Europe includes Czech Republic, Hungary, and Poland; Latin America includes Argentina, Brazil, Chile, and Mexico; Asia includes Korea, Malaysia, and Thailand.

source of funding since 1997 (see Moody's, 2002).

Hong Kong SAR and Singapore have encouraged statutory boards (quasi-government entities) and government-linked corporations to issue local currency bonds, but corporate bond issuance remains a small fraction of the market and is concentrated in high-quality issuers. Some foreign corporates have issued in Singapore after the country opened its market to foreign issuers in August 1998, and foreign banks regularly issue large amounts in the Hong Kong dollar market—usually swapping out the proceeds to foreign currency. However, the volume of issuance by local corporates is still under 10 percent of the total, maturities remain around the five-year mark, and issuers rated lower than single A are rare.

Local corporate bond issuance has also increased in most Latin American countries, and has dominated international bond issuance since 1998 (see Figure 4.1). Latin corporates have increasingly looked at local markets to refinance external debts and reduce the cost of foreign exchange volatility (see Box 4.2). However, while Figure 4.1 shows a clear and growing substitution between domestic and external funding, the total amounts are still rather small—especially when compared to the size of local bond markets in Asia. Domestic corporate bond issuance is less than 1.5 percent of GDP in the major Latin America countries, with the exception of Chile (where issuance reached 4.6 percent of GDP in 2001), compared to 10 to 15 percent of GDP in Korea and Malaysia.

The corporate bond markets in Poland and Hungary are underdeveloped, in part due to the fact that the largest corporates are able to issue in the Eurobond market or fund themselves through their more highly rated foreign parents. In contrast, and despite a very recent development of the government bond markets, the Czech Republic has a more developed corporate bond market; still, most bonds are small and relatively illiquid (Euroweek, 2001). The Polish corporate bond market is dominated by short-term commercial paper that is distributed on the basis

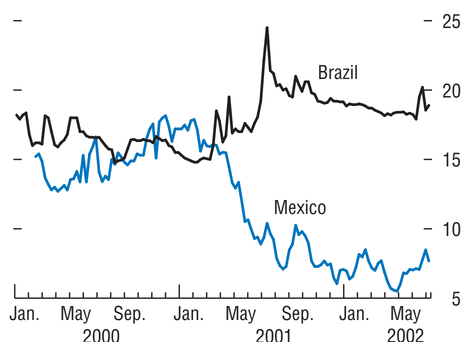
Box 4.2. External Refinancing Risk in Latin America

The corporate sector in Latin America faces a heavier debt amortization schedule than the sovereign sector. As corporates usually take longer to recover access to international capital markets than sovereign borrowers, refinancing risks may be higher for the corporate sector under the current conditions in international markets. The increase in debt amortizations in the corporate sector, from $15.4 billion in 2001 to $17.7 billion in 2002 (see Table), is mostly due to an increase in $2.8 billion in the bond segment.

A large fraction of the $4.8 billion of private sector bond amortizations in the second half of the year is accounted for by issues from Brazilian corporates and banks, for a total of $2.9 billion. However, Chile and Mexico concentrate the larger share of amortization of syndicated loans in the second half of the year.

Corporates have switched to the local bond markets that have provided a cheaper avenue to refinance external debts coming due, especially in Mexico.

Brazil and Mexico: Domestic Interest Rates
(In percent)



Source: Bloomberg L.P.

Local bond issuance in Mexico reached $1.7 billion in the year to May, almost the same amount as private sector external bonds coming due in the first half of the year, and corporates

Latin America: External Bond and Loan Amortizations
(In billions of U.S. dollars)

	2001	2002:H1	2002:H2	2002	2003:H1	2003:H2	2003
Bond Amortization	**22.6**	**10.0**	**10.5**	**20.5**	**8.6**	**12.0**	**20.6**
Private	7.0	4.7	4.8	9.5	2.7	5.3	8.0
Banks	3.6	1.2	2.0	3.2	0.4	1.4	1.8
Corporates	3.5	3.5	2.8	6.3	2.3	3.9	6.2
Public	3.2	1.7	1.0	2.8	1.0	1.4	2.4
Banks	1.6	1.0	0.7	1.7	0.7	0.2	0.9
Nonbanks	1.6	0.7	0.3	1.0	0.3	1.2	1.5
Sovereign	12.4	3.6	4.6	8.2	4.9	5.3	10.2
Loan Amortization	**19.5**	**7.1**	**8.7**	**15.8**	**6.1**	**6.2**	**12.3**
Private	13.1	5.6	7.3	12.9	4.9	4.8	9.7
Banks	1.1	0.5	1.0	1.5	0.1	0.1	0.2
Corporates	11.9	5.1	6.3	11.4	4.8	4.7	9.5
Public	3.8	1.4	1.5	2.9	1.2	1.4	2.6
Banks	0.2	0.0	0.1	0.2	0.0	0.3	0.3
Nonbanks	3.6	1.4	1.3	2.7	1.2	1.2	2.3
Sovereign	2.6	0.0	0.0	0.0	0.0	0.0	0.0
Total Amortization	**42.1**	**17.0**	**19.2**	**36.3**	**14.7**	**18.2**	**32.9**
Private	20.1	10.3	12.1	22.4	7.6	10.1	17.7
Banks	4.7	1.7	3.0	4.7	0.5	1.5	2.0
Corporates	15.4	8.6	9.1	17.7	7.1	8.6	15.7
Public	7.0	3.2	2.5	5.7	2.1	2.8	5.0
Banks	1.8	1.1	0.8	1.9	0.7	0.5	1.1
Nonbanks	5.2	2.1	1.7	3.8	1.5	2.4	3.8
Sovereign	15.0	3.6	4.6	8.2	4.9	5.3	10.2

Sources: Capital Data; and IMF staff estimates.

Box 4.2 *(concluded)*

have taken advantage of the low domestic interest rates (see the Figure). A similar amount was issued in the Brazilian local bond market that also covered roughly external bond amortizations of $1.9 billion in the first half of 2002. However, local bond issuance in Brazil was much less than expected, as corporate plans to prefinance ahead of the October elections have been derailed by early election uncertainties and investors' increased risk aversion (see IFR, 2002). Issuance of local bonds is also down in Chile in the first half of 2002, but the decline is due to the fact that most large corporates took care of their refinancing needs last year.

of private placements and has grown rapidly as a result of the fact that commercial paper is exempted from reserve requirements. The Hungarian corporate bond market has also struggled to take off for years, held up by abundant bank credit and some spectacular corporate defaults in the mid-1990s, but analysts are optimistic about the prospects for two reasons. First, several corporates have reached their credit limits with the banks and need an alternative source of finance. Second, the euroforint market developed quickly in the second quarter of 2001, and this could widen the investor base for local bonds.

The development of local corporate bond markets is constrained by a variety of factors (see, for instance, Schinasi and Smith, 1998). Market participants highlight the lack of liquidity in secondary markets and of a meaningful investor base with developed credit assessment skills, as well as high costs of local issuance and crowding out by the government.

Low liquidity in secondary markets reflects such factors as the scale of local issuance, the characteristics of the instruments, and the nature of the investor base. In most emerging markets, only a few large corporates are able to issue bonds on sufficient scale that they create a market where investors can change their trading positions without moving the price against them. In addition, local instruments are not always transparent and hence are difficult to price. In Thailand, for instance, some bonds have complicated structures that may, say, switch from floating interest rates to fixed rates half way through their term. In Brazil, long-term debentures are usually subject to *repactuacion* clauses that allow for a renegotiation of the terms and conditions of the securities every year. The authorities are working with representatives of the private sector to agree on standard documentation for their bonds that would make them more homogeneous and improve their tradability.[6]

Although the cost of local issuance is in general lower than in international markets, regulatory and other factors have at times made it prohibitively costly to issue in the local market. For example, local investment banks estimate that the cost of placing debt in Chile's local market is one-seventh of that paid for a placement in international markets (see Cifuentes, Desormeaux, and Gutierrez, 2002). The lower relative costs are attributed in part to the small size of Chilean issues—which makes it harder to absorb the large fixed cost of international issuance, the fact that the local market is open all year round and is not restricted to the "windows of opportunity" provided by international markets, as well as to the continuously growing appetite of local institutional investors. In contrast, market participants note that bringing an issuer to market in Brazil is relatively expensive. The costs of local issuance, which include those associated to fiduciary agents, lawyers, registration, rating agencies and bank fees, make it prohibitively expensive to

[6]Some market participants disagree with the standardization of contracts, as it may constrain the issuers' ability to accommodate company-specific financing needs.

issue debentures in amounts lower than 50 million reais ($20 million). The high costs are partly due to regulations that extend the underwriting process to 60 days, of which the Securities Commission authorization accounts for 30 days and requires that the price be established prior to the authorization request. Similarly, the cost of public issuance in Hong Kong SAR is estimated to be four times that of a private placement. A number of regulatory and cost obstacles make private placements the only profitable way to issue corporate bonds in Poland. For example, analysts noted that a prospectus has to be issued for each issue—ruling out medium-term notes programs—and that prospective issuers must wait a long time for the approval of the Polish Securities and Exchange Commission and must pay high fees to the National Depository of Securities.

The structure of the financial industry may also limit the growth of the local corporate bond market. Analysts note that the CE-3 countries have little intermediary capacity to underwrite corporate bonds, as the large, foreign-owned banks have little incentive to devote capital to such activity in the local market, and the local banks and brokerages typically lack the resources to do it. Also, banks in Thailand appeared reluctant to underwrite bond issuance because they feared competition from the bond market, while banks in Hong Kong SAR, eager to take advantage of the fees involved in the process, have begun to underwrite bonds. In Brazil, "firm underwriting" procedures are used by the local banks as a tool to compete with the foreign banks.[7] According to international investment banks operating in Brazil, local banks' willingness to adopt the more expensive underwriting procedure is partly explained by their appetite for credit risk, different risk management strategies compared to foreign-owned institutions, and the not-so-solid "Chinese walls" between their investment bank and asset management arms, which allow them to place some of the issuance with the pension and mutual funds under their control.

The lack of a stable and large institutional investor base, and/or restrictions on their asset holdings, is also seen as a major constraint to market development. Although some countries in Asia have started to develop privately managed pension funds, it takes time to for these institutions to accumulate the funds and to have an impact in the market (see IMF, 2001; and Moody's, 2001). In Malaysia, life insurance companies are important players in fixed income markets; but they cannot invest more than 15 percent of their portfolio in unsecured bonds and loans, and they can only invest on highly rated corporate bonds. Similarly, restrictions on the use of derivatives in the CE-3 and Latin American countries' pension funds have limited the funds' appetite for fixed income products, as they cannot hedge interest rate risks.

Some market participants note that most emerging local bond markets lack sophistication in credit risk assessments and that the full development of a credit culture is still some way off. For instance, they note that many investors in Asia treat quasi-government issues almost on an equal footing to the sovereign and that they price local issues on the basis of name recognition, without a deeper analysis of credit fundamentals. However, the degree of sophistication in the pricing of corporate bonds is relatively high in Chile, and it is gradually improving in Brazil. Local rating agencies have achieved a relatively high degree of professionalism in Chile, reflecting more than 20 years of experience in the market and an important presence of the major international rating agencies. In Brazil, market participants complain that there is not enough price discrimination and that the mutual funds buy the bonds by name recognition, without pricing adequately company fundamentals or the existence of guarantees or other en-

[7]Firm underwriting is an arrangement whereby investment banks make outright purchases from the issuer of the securities and they sell them at a profit or loss depending on market conditions; under alternative arrangements, bankers agree to do their best effort to sell an issue to the public, but they could cancel part of the sales and forgo the fees.

Table 4.3. Emerging Market Debt Trading Volume Survey
(In millions of U.S. dollars)

	1995	1996	1997	1998	1999	2000	2001	2002:Q1
Overall	**2,738,815**	**5,296,931**	**5,915,995**	**4,173,881**	**2,184,839**	**2,846,503**	**3,483,950**	**789,123**
Local instruments	571,141	1,187,899	1,505,996	1,176,371	598,707	992,982	1,516,565	344,412
External instruments	1,813,354	3,344,130	3,737,317	2,561,498	1,397,688	1,648,770	1,828,487	414,108
Asia[1]	**3,832**	**99,228**	**64,963**	**118,997**	**83,441**	**229,424**	**252,719**	**90,002**
Local instruments	1,947	72,966	48,415	42,303	24,110	165,779	168,022	71,513
External instruments	320	14,724	15,162	69,337	55,770	60,994	79,819	17,723
China	**80**	**436**	**1,807**	**9,695**	**4,663**	**2,656**	**6,354**	**763**
Local instruments	6	73	39	6,128	0	108	942	12
External instruments	74	355	1,650	3,441	4,072	2,206	4,898	602
Hong Kong SAR		**40,909**	**45,760**	**37,377**	**16,453**	**98,283**	**86,955**	**38,639**
Local instruments		30,120	42,919	29,907	9,925	91,393	69,979	33,147
External instruments		6,824	2,840	7,447	4,896	5,648	13,915	5,074
Korea	**57**	**411**	**6,045**	**60,925**	**38,088**	**50,903**	**44,146**	**17,208**
Local instruments		280	737	2,952	5,803	22,173	17,936	14,375
External instruments	54	127	5,293	50,893	31,336	28,228	25,496	2,795
Malaysia	**842**	**11,548**	**5,095**	**4,319**	**10,880**	**20,238**	**30,266**	**5,101**
Local instruments	675	9,567	2,323	650	308	8,867	15,192	2,318
External instruments	143	896	1,690	3,669	10,542	11,084	14,950	2,756
Singapore	**237**	**1,213**	**223**	**116**	**3,040**	**30,177**	**63,627**	**19,511**
Local instruments		1,005	66	71	2,668	22,634	48,979	13,919
External instruments	31	0	157	45	373	7,518	14,635	5,592
Thailand	**1,692**	**35,394**	**2,968**	**3,548**	**3,475**	**11,303**	**5,569**	**2,046**
Local instruments	1,263	29,097	1,790	982	433	7,445	2,860	1,445
External instruments	18	367	1,155	2,553	2,708	3,614	2,267	485
Europe[1]	**249,155**	**495,243**	**785,045**	**939,660**	**314,286**	**429,424**	**505,498**	**115,111**
Local instruments	44,537	79,071	274,033	364,977	156,701	149,369	163,048	35,289
External instruments	72,467	185,649	200,234	328,268	117,475	212,918	327,585	76,043
Czech Republic	**3,575**	**14,223**	**8,656**	**4,867**	**3,855**	**2,274**	**14,270**	**3,577**
Local instruments	3,235	8,310	4,413	3,310	696	1,372	10,595	2,214
External instruments	341	5,454	3,981	1,534	3,122	888	3,608	1,363
Hungary	**824**	**3,461**	**3,768**	**10,405**	**16,627**	**14,942**	**34,419**	**4,521**
Local instruments	202	1,943	1,854	4,972	8,672	5,562	29,013	3,443
External instruments	622	1,518	1,894	4,611	7,930	9,367	4,359	1,078
Poland	**96,184**	**81,055**	**69,683**	**94,837**	**24,554**	**48,763**	**90,321**	**23,835**
Local instruments	26,397	9,070	29,190	56,893	9,414	33,083	73,217	17,918
External instruments	43,487	66,227	39,183	37,691	15,114	15,658	17,103	5,904
Russia	**144,977**	**380,499**	**648,414**	**684,364**	**123,349**	**241,316**	**299,468**	**65,321**
Local instruments	12,175	51,255	195,519	191,681	19,685	36,373	27,562	8,486
External instruments	26,952	105,129	143,774	250,261	64,337	139,683	259,405	53,111
Turkey	**3,595**	**16,005**	**54,524**	**145,187**	**145,901**	**122,129**	**67,020**	**17,857**
Local instruments	2,528	8,493	43,057	108,121	118,234	72,979	22,661	3,228
External instruments	1,065	7,321	11,402	34,171	26,972	47,322	43,110	14,587

hancements. Nevertheless, participants see the fact that most issuers are obtaining two ratings—rather than only one, as required by the regulations—as a sign that the market is gradually maturing.

Korea's experience provides an interesting illustration of the potential role of the corporate bond market as an alternative source of funding, as well as of the problems that may arise when guarantees distort price discovery. As the supply of bank credit dried up in the aftermath of the financial crisis of 1997–98, bond issuance increased substantially, operating to some degree as an alternative source of funding. However, issuance was concentrated in the Big Five chaebol, which were also owners of the largest investment trust companies (ITCs), the main investors in corporate bonds. The collapse of the third

Table 4.3 *(concluded)*

	1995	1996	1997	1998	1999	2000	2001	2002:Q1
Latin America[1]	**2,001,533**	**3,700,816**	**4,063,864**	**2,554,276**	**1,444,579**	**1,809,150**	**2,236,773**	**437,859**
Local instruments	481,909	830,079	961,695	632,527	381,211	596,058	1,001,412	177,621
External instruments	1,369,825	2,453,225	2,715,395	1,760,633	938,043	1,102,367	1,128,372	238,846
Argentina	**609,678**	**1,292,462**	**1,235,710**	**612,390**	**318,940**	**365,772**	**383,760**	**20,676**
Local instruments	98,062	400,215	249,845	111,251	52,911	68,916	39,591	393
External instruments	486,620	801,649	894,645	468,875	253,292	287,415	335,757	20,191
Brazil	**877,412**	**1,441,454**	**1,796,444**	**1,268,856**	**801,596**	**768,985**	**721,035**	**198,550**
Local instruments	173,246	120,539	312,790	156,753	165,367	106,576	82,391	23,884
External instruments	621,598	1,105,881	1,368,452	1,010,157	534,509	579,137	561,467	157,911
Chile	**4,308**	**20,504**	**51,811**	**32,549**	**11,402**	**12,721**	**20,896**	**4,408**
Local instruments	368	10,550	45,002	29,747	6,575	8,690	11,038	2,981
External instruments	3,706	8,665	6,610	2,631	4,824	4,002	9,858	1,419
Mexico	**510,135**	**946,396**	**979,899**	**640,481**	**312,641**	**661,672**	**1,111,082**	**214,225**
Local instruments	210,233	298,775	354,058	334,776	156,358	411,876	868,392	150,363
External instruments	257,901	537,030	445,688	278,970	145,418	231,813	221,290	59,325
Other[2]	**484,295**	**1,001,644**	**1,002,123**	**560,948**	**342,533**	**378,505**	**488,960**	**146,151**
Local instruments	42,748	205,783	221,853	136,564	36,685	81,776	184,083	59,989
External instruments	370,742	690,532	806,526	403,260	286,400	272,491	292,711	81,496

Source: Emerging Markets Traders Association.
[1]Regional totals are based on the countries in this table and, hence, do not include all countries in the region.
[2]All other countries of the survey not in this table.
Notes: a) External instruments include Brady Bonds, Non-Brady Bonds, and Eurobonds.
b) Other/Unspecified category under Non-Brady Bonds is not included for Argentina, Brazil and Mexico.
c) Loans and Debt Options & Warrants categories of the survey are not included in Local Instruments or External Instruments. However, these categories are in the totals by countries, regions, and overall.

largest chaebol led to a run on the ITCs and the associated sell-off in the bond market forced the authorities to restrict redemptions and provide liquidity support to the bond market. Moreover, the surge of bond financing in 1998 led to a wave of refinancing in 2000–2001 that, combined with the removal of guarantees and the introduction of mark-to-market in the ITCs, prompted further governmental support of the market through the creation of a bond stabilization fund and official guarantees. A key support measure expired at the end of 2001 as planned, while the authorities are phasing out other support for the corporate bond market over time.

Finally, in several emerging markets the major obstacle to the growth of corporate bond markets is the crowding out by government bond issuance. In Brazil, for instance, government securities offer domestic investors low credit risk, ample secondary market liquidity, high yields, and—in many cases—protection against exchange rate, inflation, and interest rate risks through indexed bonds. Hence, only strong local corporates willing to pay rates in excess of 20 percent on three-year bonds are able to bid for domestic investors' money given the formidable competition posed by the government. These issuers are concentrated in highly rated companies from the telecommunications, utilities, and natural resources industries. In many cases, corporate bonds had to be enhanced with guarantees to become attractive enough to investors. Similarly, the abundant supply of government paper in the CE-3 countries also crowds out private issuance. The inverted yield curve in Hungary and Poland is also a hindrance to corporate bond demand, as investors who can get 10 percent risk-free returns on government paper have little incentive to seek out credit yield pickup in medium-term corporate bonds.

Secondary Markets and the Role of Foreign Investors

The increasing importance of local bond markets can also be seen in the evolution of second-

ary market activity, as measured by trading volumes. While trading volumes in external debt instruments fell in 2001 to less than half its level in 1997, trading volume in domestic instruments held up and has recovered to the levels before the Asian crisis (see Table 4.3).[8] The overall declining trend, as well as the high regional and country variation, is mostly due to the string of crises and the role played by foreign investors—considered to be critical for the market's liquidity and direction (see, for instance, Deutsche Bank, 2000). Analysts note, however, that governments' efforts to develop the markets have focused more on the primary market than on the transparency and efficiency of the secondary markets; and that transaction taxes, as well as underdeveloped repurchase (repo) and derivative markets, limit secondary market activities.

The Asian crisis brought trading volumes in local instruments to one-third of the pre-crisis levels, but they have recovered to more than twice their 1996 level, outstripping the increase in stocks outstanding. Trading volumes have grown sharply in Malaysia, despite the existence of capital controls and some structural problems—such as the lack of mark-to-market regulations (see Deutsche Bank, 2001). Similarly, secondary market activity has increased in Korea, with the introduction of mark-to-market regulations, a system of over-the-counter interdealer brokers, and availability of hedging instruments—in particular, the rapid growth in the three-year Korean treasury bond futures contract.[9] Another constraint to the development of secondary market activity is the underdevelopment of repo markets. In Thailand, repo operations are currently done bilaterally with the Bank of Thailand. However, efforts have been made to create a private repo market. Primary dealers have been selected to conduct open market operations as well as bilateral repo operations, and eventually conduct transactions in the private repo market. The Bank of Thailand aims to phase out its role in the market so that market transactions are done directly between market players at the soonest possible date. As both private repo and interbank transactions are subject to a gross transaction tax, this has prevented short-term interbank transactions that are needed in order to create a benchmark for other instruments, including swaps. Foreign participation has remained low, as a result of these structural weaknesses and—more importantly—because of the low interest rate environment. Reflecting the easing of global monetary conditions and local financial policies, yield curves in most Asian countries shifted down and steepened during 2001. Short-term interest rates fell under the 2 percent level in Hong Kong SAR, Singapore, and Thailand by end of the year, while longer-term rates were supported in part by active government efforts to extend the duration of bond issues and market participants' expectations of interest rate increases.

Despite having one of the largest stock of outstanding domestic government bonds, China's secondary markets are quite illiquid, reflecting the existing segmentation across investors, instruments, and trading mechanisms. There are two separate markets for bond trading: the stock exchange and the interbank market. Since 1997 banks have been banned from the stock exchange and trade solely in the interbank market. Until recently, individual investors were allowed to trade only in the stock exchange, while securities houses and investment funds were allowed to trade in both markets.

The crises in some countries caused a collapse in secondary market activity in European local bond markets, while trading of external instru-

[8]The total outstanding value of emerging market domestic bonds grew steadily to $1,646 billion in 2001, up from $1,173 billion in 1997. The figures for external bonds showed a similar increase, moving from $302 billion in 1997 to $432 billion in 2001.

[9]Emerging Markets Traders Association (EMTA) data have the advantage of a common methodology across countries, but the fact that a large fraction of reporting firms are international banks means that sometimes individual country data differs from local sources. In particular, the latter show continued growth in trading volumes in Korea and Thailand, in contrast to Table 4.3.

ments recovered to precrisis levels in 2001. For example, nonresident investors were holding about one-third of Russian treasury domestic securities (with a value of around $20 billion) by mid-1998 (see IMF, 1998), and the losses incurred in the aftermath of the devaluation of the ruble and default have meant that they have stayed out of that market—and perhaps out of several other local bond markets. Moreover, foreign holdings of Turkish domestic securities were around 10 to 15 percent by mid-2000 (a percentage similar to that of the Mexican crisis), when pressures in the treasury bill market began, but they have declined markedly after the November 1999 sell-off.

Increased issuance and foreign participation contributed to very rapid growth in secondary market trading in the CE-3 countries. Most foreign investors engaged in "convergence plays" are "real money"—that is, institutional investor funds from western Europe that have a positive long-term view on the region and take unhedged positions in medium-term local currency government bonds in order to capture the gains from declines in local interest rates and exchange rate appreciations that are viewed as likely to occur as these countries near access to the European Union. Although the exposure to the domestic bond markets is not a one-way bet, especially after the widening of the exchange rate band of the Hungarian forint in May 2001 and the recent volatility of the Polish zloty, real money investors have a long-term view and do not seem to worry much about short-term foreign exchange rate fluctuations. Leveraged investors, such as hedge funds and the proprietary desks of the major banks, have a much smaller presence that tends to increase in periods of high volatility. Market participants see the large ratio of real to leveraged money as providing stability to the foreign investor base in the CE-3 local debt markets, but the hedging behavior of institutional investors and other features of the investor base have at times been a source of instability. The tendency of investors to dynamically hedge during periods of increased exchange rate volatility has sometimes led to "snowballing effects." This was seen last July in Poland, when weak local market conditions combined with increased hedging by foreign holders of zloty-denominated bonds, to lead to a sell off in the local foreign exchange market.

Trading volumes in Latin American local instruments increased 68 percent in 2001, with growth in volumes of Mexican instruments dominating the decline of those from Argentina and Brazil, whose volumes both declined. Trading in Mexican local instruments account for more than half of the local emerging market universe according to the EMTA survey—a reflection of the appeal of Mexican debt for crossover investors, among other factors. This fact gives credence to market participants' view that the role of foreign investors in the Mexican market is larger than that suggested by official estimates of foreign holdings of local bonds.[10] Also, trading volumes in the Mexican local market have increased as a result of the relative increase in fixed-rate bonds,[11] while the opposite has occurred in the Brazilian local markets. Liquidity in the latter market has also been hampered by the bank debit tax (the CPMF).

Conclusion

Emerging local bond markets are gradually but steadily becoming an alternative source of funding for sovereigns and, to a lesser extent, corporate borrowers. To some degree, existing corporate bond markets served as an alternative source of finance in Hong Kong SAR, Korea, and Malaysia after the 1997–98 financial crises.

[10]This may be, in part, due to the fact that foreign investors take positions in local bond markets through total return swaps, and the actual bond holding is registered with a local bank.

[11]While the daily trading volume of indexed bonds is just 10 billion pesos (with an outstanding stock of 349 billion pesos), the corresponding figure for fixed-rate bonds is 140 billion pesos (for an outstanding stock of 107 billion pesos) in March 2002.

Progress in these and other markets over the last five years has meant that these markets are likely to buffer, to some extent, the impact of future disruptions in other financial markets. The rapid growth of local corporate bond issuance in Latin America is substituting for the reduced access to international capital markets, but mostly for top-tier corporates. Analysts hope that the strong growth in private pension funds, combined with the support of more transparent government benchmarks and better corporate governance and transparency, may extend the benefits of corporate bond markets to lower-tier credits.

Progress in the development of secondary markets is somewhat less satisfactory, and some market participants are concerned that a reversal of the interest rate cycle might lead to excessive adjustments in bond prices, especially in those markets where hedging instruments are unavailable or highly illiquid. Despite improved liquidity, uncertainties on EU accession and large fiscal deficits could still generate periods of market turbulence in the CE-3 countries. Foreign participation continues to be relatively large in these markets and has so far contributed to a deepening of secondary markets. Increased crossover interest in local bonds has been seen only in liquid markets with plain vanilla 5- or 10-year fixed-rate bonds. A large share of indexed securities has kept foreigners away from local Latin bond markets, but things seem to be gradually improving in Chile and Mexico.

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