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The following symbols have been used throughout this volume:

. . . to indicate that data are not available;

— to indicate that the figure is zero or less than half the final digit shown, or that the item does not exist;

– between years or months (for example, 1997–99 or January–June) to indicate the years or months covered, including the beginning and ending years or months;

/ between years (for example, 1998/99) to indicate a fiscal or financial year.

"Billion" means a thousand million; "trillion" means a thousand billion.

"Basis points" refer to hundredths of 1 percentage point (for example, 25 basis points are equivalent to ¼ of 1 percentage point).

"n.a." means not applicable.

Minor discrepancies between constituent figures and totals are due to rounding.

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

PREFACE

This is the third issue of the *Global Financial Stability Report*, a quarterly publication launched in March 2002 to provide a regular assessment of global financial markets and to identify potential systemic weaknesses that could lead to crises. By calling attention to potential fault lines in the global financial system, the report seeks to play a role in preventing crises before they erupt, thereby contributing to global financial stability and to the prosperity of the IMF's member countries.

The report was prepared by the International Capital Markets Department, under the direction of the Counsellor and Director, Gerd Häusler. It is managed by an Editorial Committee comprising Hung Q. Tran (Chairman), Donald J. Mathieson, David Ordoobadi, and Garry J. Schinasi, and benefits from comments and suggestions from Charles R. Blitzer and Effie L. Psalida. Other contributors to this particular issue are Francesc Balcells, Peter Breuer, John Dalton (of the IMF's Monetary and Exchange Affairs Department, or MAE), Burkhard Drees, Martin Edmonds, Anna Ilyina, Charles Kramer, Gabrielle Lipworth, Chandima Mendis, Chris Morris, Martin Mühleisen, Jurgen Odenius, Jorge Roldos, Calvin Schnure, Srikant Seshadri, Mazen Mahmoud Soueid, and Ken Sullivan (MAE). Mansoor Gill, Silvia Iorgova, Anne Jansen, Oksana Khadarina, Yoon Sook Kim, Advin Pagtakhan, and Peter Tran provided research assistance. Caroline Bagworth, Jane Harris, Vera Jasenovec, Ramanjeet Singh, Adriana Vohden, and Joan Wise provided expert word processing assistance. Jeff Hayden of the External Relations Department edited the manuscript and coordinated production of the publication.

This particular issue draws, in part, on a series of informal discussions with commercial and investment banks, securities firms, asset management companies, insurance companies, pension funds, stock and futures exchanges, and credit rating agencies in Brazil, Chile, China, Germany, Hong Kong SAR, Hungary, Italy, Japan, Poland, Russia, Singapore, Switzerland, Thailand, the United Kingdom, and the United States. The report reflects mostly information available up to August 12, 2002.

The study has benefited from comments and suggestions from staff in other IMF departments, as well as from Executive Directors following their discussions of the *Global Financial Stability Report* on August 28, 2002. However, the analysis and policy considerations are those of the contributing staff and should not be attributed to the Executive Directors, their national authorities, or the IMF.

CHAPTER I

OVERVIEW: KEY DEVELOPMENTS AND SOURCES OF FINANCIAL MARKET RISKS

During the period under review, a sharp erosion of investor confidence, heightened risk aversion, and growing concerns about the strength and durability of the global recovery and the pace and quality of corporate earnings had repercussions in all of the major equity, credit, and foreign exchange markets (see Chapter II). Market adjustments occurred against the background of the bursting of the telecom, media, and technology (TMT) bubble, which exposed a culture of irrational exuberance, and sometimes greed, among many buyers, sellers, and intermediaries, and most recently some senior executives who adopted business practices—some unethical and illegal—to boost their companies' share prices at any cost. First, major equity market indices declined significantly and by early August were near or below levels not seen since the autumn of 1998, when global markets were unsettled by Russia's default and the near-collapse of the global hedge fund, Long-Term Capital Management (Table 1.1). Second, as U.S. corporate bankruptcies hit records, institutional investors and banks discriminated more clearly between classes of borrowers and reduced lending to high-risk borrowers. As a result, corporate credit spreads widened, and speculative grade borrowers faced dramatically higher borrowing costs. The credit deterioration also created a record number of "fallen angels" whose outstanding bonds were downgraded from investment grade to junk status. Third, the dollar continued to depreciate against the other major currencies, reflecting reductions in foreign portfolio flows into U.S. equity markets and in foreign direct investment. The dollar's decline, together with the continuous stream of accounting irregularities in the United States and the relative absence of them elsewhere so far, intensified concerns about how much further the major currencies would be realigned

Second Quarter at a Glance

Conditions in global financial markets have deteriorated significantly since end-March 2002, reflecting a sharp erosion of investor confidence and heightened risk aversion. During the reporting period, corporate earnings disappointments, increased pessimism and uncertainty about the earnings outlook, and a series of revelations of corporate accounting irregularities, abuses, and fraud shifted the balance of investor sentiment from caution to anxiety, sometimes bordering on fear. This was accompanied by short periods of extremely high volatility and market contagion.

The bursting of the telecom, media, and technology (TMT) bubble continued to weigh on global equity markets, as institutional investors rebalanced their portfolios away from equities and low-grade bonds—seen as riskier than before—and toward higher quality assets, such as government securities, high-grade corporate bonds, and cash. The rebalancing of portfolios sparked significant declines in equity markets reaching well beyond the TMT sector, greater discrimination in credit markets—including a widening of credit spreads—and a further move away from dollar assets. Consistent with this global asset reallocation, investors reassessed their appetites for emerging market investments, which adversely affected countries seen as higher risk.

Despite significant corrections in a range of markets, as of early August 2002, the global financial system had remained resilient, in part because risks have become more widely spread in recent years. In addition, market adjustments remained orderly and stopped short of the kind of overall flight from risk that might derail the global recovery or threaten financial stability. But key risks remain, in particular that retail investors will begin to liquidate their equity holdings and that foreign investors will significantly reduce investment in U.S. equity markets.

Table 1.1. Financial Market Data

(Percentage change; unless otherwise noted)

	Change to August 12, 2002 from			
	Peak (March 24, 2000)	September 11, 2001	December 31, 2001	March 29, 2002
Equity market				
Major stock indices[1]				
S&P 500	–40.8	–17.3	–21.3	–21.2
Nasdaq	–73.7	–22.9	–33.0	–29.2
FTSE Eurotop 300	–43.0	–14.6	–25.2	–26.3
Topix	–41.5	–9.3	–7.0	–9.5
Bank indices				
S&P 500 bank index	12.5	5.1	2.5	–5.1
FTSE Eurotop 300 bank index	–18.1	–8.4	–20.7	–22.4
Topix bank index	–51.5	–31.2	–5.5	–3.0
Bond market				
U.S. corporate bonds				
Yields (level change; basis points)				
AAA	–123	–54	–21	–50
BAA	–70	–16	–29	–60
High-yield bonds	155	92	78	155
Spreads (level change; basis points)[2]				
AAA	74	1	62	68
BAA	127	39	54	58
High-yield bonds	352	147	161	273
U.S. corporate bond price indices[3]				
AAA	. . .	2.5	3.2	5.3
A	. . .	1.1	2.2	4.1
BBB	. . .	–7.7	–5.9	–3.1
Government bond yields (level change; basis points)[4]				
United States	–197	–55	–83	–118
Germany	–71	–27	–46	–72
Japan	–61	–16	–11	–14
Government bond price indices[5]				
United States	11.5	2.5	5.8	9.3
Germany	7.5	6.3	4.9	7.7
Japan	4.9	1.4	0.4	1.3
Exchange rates				
Euro/U.S. dollar	–0.1	–6.7	–9.1	–10.9
Yen/U.S. dollar	11.3	–0.4	–9.6	–10.4
Trade-weighted nominal U.S. dollar[6]	5.9	–2.8	–6.6	–7.0

Sources: Bloomberg L.P.; and Datastream.
[1]In local currency terms.
[2]Spread over a 10-year U.S. treasury bond.
[3]Merrill Lynch corporate bond indices.
[4]Ten-year government bonds.
[5]Merrill Lynch government bond indices, 10+ years.
[6]Changes from August 9, 2002.

and doubts about the sustainability of capital flows needed to finance the U.S. current account deficit.

At the same time, the favorable climate for emerging market financing of the first quarter deteriorated quickly as investors reassessed the pace of the global economic recovery and global financial conditions (see Chapter III). The loss of investor confidence worldwide contributed to substantial price declines and increased volatility in emerging bond and equity markets, even though emerging market bonds and equities have outperformed similar U.S. and European assets so far this year. Investor concerns were especially focused on, but not limited to, emerging market countries whose economic reform agen-

das could be affected by domestic political uncertainty. Signs of contagion surfaced, especially toward the end of the quarter, as movements in emerging market bond markets became more correlated with developments in Brazil, but less so than in previous crises. In addition, countries in the neighborhood of Argentina experienced contagion through banking and real sector channels. The relatively open market access that prevailed in the first quarter was also partially reversed. Primary markets were effectively closed to subinvestment-grade issuers in Latin America, unless they offered credit enhancements. Issuers with solid credit ratings and those in Asia, Eastern Europe, and the Middle East retained market access, however. Given that sovereign borrowers actively prefinanced their borrowing programs, Latin American corporate borrowers are the most vulnerable to prolonged market closure.

As of early August 2002, despite dramatic asset price movements and significant financial losses for investors worldwide, the global financial system remained resilient. Part of this resilience, no doubt, is related to the wider dispersion of corporate and financial risk to nonbank financial institutions. Another important element is the greater participation of retail investors—that is, households—in U.S. equity markets, and, increasingly so, in European equity markets. Market adjustments to date can be judged as having been orderly and contained, stopping short of the kind of widespread withdrawal from risk taking that could derail the global recovery. As this report went to press, markets remained concerned about the strength of corporate earnings, the reliability of earnings reports, the likelihood of further corporate scandals in the advanced economies, and prospects for macroeconomic and financial stability in the emerging market countries. In addition, global financial institutions are realizing that the profitability of wholesale banking has diminished, only in part because of the ending of a boom, and accordingly are reevaluating their business models. In the immediate future, their strategy may well continue to be a further reduction in the amount of capital devoted to wholesale banking, a continued retrenchment from lending to higher-risk borrowers—including many in emerging market countries—and a shift toward providing consumer services. This could aggravate the financing constraints already faced by higher-risk borrowers.

Assessment of Likely Outcomes and Sources of Financial Risk

Looking ahead, and notwithstanding special political and economic problems in important emerging market countries, the most likely outcome is that financial resilience and stability will be maintained. First, the global economy appears to be still improving, although perhaps at a slower pace than expected. Second, the recent market corrections have worn off some of the unrealistically high equity valuations that were once a direct source of risk. This is particularly true in the TMT sector, where continued sluggishness has reduced equity prices by so much that private equity and restructuring funds have attracted net inflows of capital from investors, and might be ready to purchase assets of selected telecom companies and other industrial companies. In so doing, they provide a degree of stability to the market. As of early August 2002, valuations in U.S. and European equity markets had moved closer to longer-term averages from excessive levels (see Box 2.2 in Chapter II). Third, although markets are likely to remain volatile and may even become more so, there is little evidence now to suggest that market dynamics are likely to lead to the kind of liquidity and credit events that could create the potential for systemic problems. While more news of corporate scandals and poor earnings cannot be ruled out in the near term and further global market adjustments may occur, continued value erosions need not adversely affect the economy much. A key to this uncertainty is the behavior of retail investors. If households continue to remain invested in equities, selling pressures could remain contained and negative wealth effects limited. If this occurs, it is a reasonable expecta-

tion that the global economic recovery will continue—perhaps at a slower pace than previously expected, as suggested in the IMF's forthcoming *World Economic Outlook*—and that international financial resilience and stability will be maintained.

Nevertheless, risks to international financial market stability emanate from both mature and emerging financial markets. In the mature markets, the most immediate concern is that investor trust and confidence may continue to erode to the point where investors withdraw en masse from financial and economic risk taking. The implosion of the TMT sector in 2000 and that sector's continued weakness raise the concern that further equity price corrections could cascade across markets and thereby trigger liquidity and/or credit events. The likelihood of a pervasive withdrawal from risk taking, including by households, would seem to depend, in part, on whether corporate governance problems continue to surface, in particular in other parts of the world. Such a withdrawal would most likely be associated with further sharp corrections in already weak corporate securities markets, a continued loss of resilience and flexibility by global financial institutions, and a greater withdrawal of lending to even low-risk borrowers. This could create market conditions in which "fear feeds on fear," and panic selling occurs. The short-term risks associated with such a process are well known and entail the potential for global market turbulence, including the possibility of a strong impact on emerging markets; a related risk is that the global economic recovery could be weakened, if not derailed, in part as a result of wealth effects on spending behavior.

A second related source of global risk—but one that is consistent with other scenarios as well—is the possibility that the accumulated losses experienced by financial institutions could impair capital positions of key institutions, or a large number of smaller ones. This could significantly reduce the remaining resilience of these institutions. This is a particular concern in Europe, where TMT and energy companies have been hard hit and face significantly higher funding costs, where insurance and reinsurance companies have fared poorly recently, and where bank stocks overall have been devalued about as sharply as the overall European markets. By contrast, in the United States, bank stocks have fallen by less than the overall market (see Table 1.1). One possible reason for this differentiation is that European insurance companies and banks are more heavily exposed to corporate and TMT risk—in the form of both equity holdings and loans—largely because European corporate finance is still primarily intermediated by financial institutions rather than markets. In addition, for many European banks, their diversification into investment banking and international businesses has produced losses. Additional signs of weakened bank balance sheets would be consistent with, and exacerbate, a further withdrawal of risk taking and lending in the major international financial centers, including from syndicated lending to emerging market countries.

A third ongoing source of risk is the possibility of a rapid slowdown of net capital flows into the United States. During the 1990s, the United States attracted growing amounts of capital from the rest of world, and during the past several years it has absorbed about 70 percent of the world's net savings (current account surpluses). By the end of 2001, net capital inflows reached some $400 billion, in part because the United States was widely perceived as the most desirable place for investing. Throughout the 1990s, inflows into U.S. asset markets and investments were associated with sustained sharp rises in asset prices and a persistent increase in the value of the dollar, which has already begun to decline. To the extent that net inflows decline, some of the dynamics associated with the inflows necessarily will be reversed. While there are significant economic and financial risks, market adjustments—including in currency markets—need not be abrupt or disruptive, in the sense that they create liquidity and credit problems. Partly mitigating the risk of disorderly financial adjustment is the possibility that investors might decide that there are few more desirable places

to invest, at least until there are more credible signs of higher growth elsewhere: as noted in the forthcoming *World Economic Outlook*, the pickup in Europe does not yet appear to be self-sustaining; and domestic demand growth in Japan is likely to remain constrained by banking and corporate sector difficulties for some time.

Emerging markets remain vulnerable to a further decline in market sentiment. First, indicators of risk aversion and contagion have increased, even though they remain well below historical peaks. Further shocks could come from developments within key emerging market countries or from a deterioration in mature markets. Second, within emerging markets, developments in Brazil are critical, as a further deterioration in sentiment toward Brazil would likely be felt more widely, especially as investor concerns over policy continuity and debt sustainability span a number of emerging market countries. Third, continued weakness and volatility in mature equity markets, particularly if accompanied by a further downward assessment of global growth prospects, could trigger a further retrenchment from emerging markets.

While confidence in emerging market investments has been shaken and signs of contagion have increased, there are also indications of continued investor discrimination, as certain high-grade credits have remained largely immune to the recent turmoil. In addition, technical conditions in emerging markets have improved, as investors have reduced their exposure and increased cash positions. However, these mitigating technical factors are by themselves insufficient to turn investor sentiment.

Those emerging markets countries that have well-developed local bond markets may be less vulnerable to any further shifts in international investor sentiment. The analysis in Chapter IV suggests that local bond markets could be a relatively stable source of finance during periods when international bond markets are unreceptive to emerging markets. If so, they may help to stabilize financing to emerging market borrowers—sovereigns, banks, and corporates—in periods of heightened stress in international capital markets. In Latin America, for example, the corporate sector faces large debt amortizations, and has switched to the local bond markets. However, this substitution of funding is ongoing, and some corporates and countries face greater difficulties than others. Moreover, some countries—especially with macroeconomic weaknesses—have found it necessary to index local instruments to the dollar, a practice that could lead to unsustainable debt dynamics. More generally, emerging local bond markets have grown considerably over the past five years, and are gradually but steadily becoming an alternative source of funding for sovereigns and, to a lesser extent, corporate borrowers, and this may contribute to international financial stability.

Promoting Global Financial Stability

Concerns about global recovery, eroding investor confidence, and heightened risk aversion have played important roles in the recent deterioration in markets and also shape the risks going forward. By the same token, they also suggest steps that could help to promote stability in global and key national financial markets in the period ahead.

- In *all countries*, there should be increased vigilance by those in charge of financial stability—in the areas of market surveillance, prudential supervision, and financial regulation—for signs of further weaknesses in key institutions and markets that could threaten financial stability and economic recovery globally. Emphasis should be placed—by both executives and their supervisors—on enhancing the soundness of institutions and improving the operating profitability of the core businesses of the various types of financial institutions. In this regard, for each class of institution, actions to ensure that the risks in unfamiliar non-core businesses are well managed might go a long way in securing financial soundness and therefore financial market stability. To complement these actions and bolster confidence in markets, countries can be encouraged to participate in IMF Reports on

Standards and Codes (ROSCs) in the areas of corporate governance, accounting, and auditing, and to subscribe to the OECD's principles of corporate governance.

- In the *advanced economies,* macroeconomic policies should continue to support economic activity, and medium-term policies should continue to foster an orderly reduction in global imbalances. As discussed in the forthcoming *World Economic Outlook*, in current account deficit countries this would entail maintaining credible medium-term fiscal consolidation, while in surplus countries it entails aggressively implementing badly needed structural reforms. Moreover, additional efforts to improve corporate governance, accounting, disclosure, and transparency will most likely be needed to strengthen the self-correcting forces of the market. In particular, governance should provide incentives for prudent accounting and reporting, and for reducing the tendency toward looking to short-term share price developments by senior managers. In light of recent revelations of weaknesses in corporate governance, a more medium-term approach to corporate strategy and to maintaining shareholder value could help enhance the stability of financial markets.
- In *emerging market countries*, the consistent implementation of strong policies aimed at bolstering macroeconomic and financial stability is essential, and could also improve the allocation of capital internationally—by helping investors discriminate more clearly between countries as investment destinations. In countries where domestic saving rates are presently low, and the need for external financing high, authorities should encourage greater domestic savings. In addition, and in order to more effectively channel domestic savings to domestic investment, authorities should further encourage and foster the development of sound banking systems and aggressively diversify their financial systems by strongly encouraging the development of local securities markets to supplement external market financing.

CHAPTER II

DEVELOPMENTS AND SOURCES OF RISK IN THE MAJOR FINANCIAL CENTERS

The deterioration in financial market conditions that has taken place since the release of the June 2002 *Global Financial Stability Report* appears to have been driven primarily by mutually reinforcing rounds of eroding investor confidence and heightened risk aversion. Against the background of the deflation in the TMT "bubble," investor confidence was affected by growing uncertainties about the strength and durability of the global economic recovery, additional revelations of accounting irregularities, and downward revisions to corporate earnings forecasts. The attendant price adjustments in the mature equity, credit, and currency markets, and concerns about their implications for balance sheets, further weakened investor confidence and increased risk aversion. The sharp deterioration in market conditions through mid-July—when the major equity markets reached lows—also raised questions about the resilience of financial institutions, particularly in Europe. Meanwhile, financial institutions seemed to be reassessing their business strategies, particularly the relative profitability of wholesale versus retail banking.

So far, the major markets and institutions have remained resilient, and market adjustments have been orderly.[1] One reason for this is that financial risks and rewards (and losses) are more widely dispersed among many types of bank and nonbank financial institutions as well as retail investors. In addition, the major institutions that intermediate the bulk of international capital flows had relatively favorable capital and liquidity positions before entering this most recent period of market adjustments. Nevertheless, profitability has weakened, and institutions have pulled back from risk taking.

Overall, and despite a significant rise in risk aversion and sharp price declines in some markets, the market adjustments thus far can be characterized as a shedding of risk and shift to quality (but not yet flight to safety). Market adjustments so far have not been accompanied by the types of heavy flows out of risky assets and into safe assets—in particular by retail investors—that are associated with panic selling. Panic selling could cause prices to overshoot on the downside and result in outsized effects on financial markets (including emerging markets), financial institutions, and, in the worst of circumstances, the real economy. These market risks may be counterbalanced to some extent by the stabilizing behavior of longer-term institutional investors looking for bargains, as well as the behavior of contrarian investors, who have attracted inflows of funds and already appear to be searching for underpriced assets. Finally, there are significant uncertainties about macroeconomic fundamentals, notably whether sustained high productivity growth and low inflation in the United States will once again support corporate profitability over the medium term; low European growth and above-target core inflation will continue to constrain global growth; and financial and corporate sector problems in Japan will begin to be resolved.

After reviewing these and other developments and the associated risks, the second part of this chapter examines the more medium-term financial risks associated with a more rapid decline in capital flows to the United States, which was the largest net recipient of international capital flows during the 1990s. The dollar's recent decline suggests that international investor sentiment toward U.S. assets has deteriorated,

[1]Disorderly markets would be characterized by: (1) very wide bid-ask spreads, (2) imbalances between buy and sell orders that would, for example, lead the New York Stock Exchange to stop trading, (3) the activation of circuit breakers on exchanges, and (4) a widespread sense of panic by investors.

notwithstanding questions about the relative economic strength of Europe and Japan compared with the United States, and factors that would continue to support the U.S. role as an important international financial center or financial "hub." The apparent turn in the dollar highlights the risk that additional shocks and price adjustments could lead international investors to further reappraise investments in the United States relative to their home countries. Such a reappraisal could cause an abrupt shift in the pattern of capital flows among the major financial centers, triggering increased volatility in the major currencies and sharp adjustments in national and international financial markets.

The Market Deterioration Stemming from Eroding Investor Confidence and Heightened Risk Aversion

The period under review was marked by significant declines in the prices of risky assets across a range of mature and international markets (see Table 1.1 in Chapter I). In spite of strong first-quarter U.S. economic growth, equity prices fell globally, as the first-quarter U.S. equity-market correction spread to overseas markets. Market corrections, along with pressures on financial institution earnings and credit quality, were reflected in steep declines in stock prices for some banks and insurers, particularly in Europe. As government bond markets rallied, credit spreads widened, particularly for subinvestment-grade borrowers. Meanwhile, high-yield bond issuance fell to half the level attained in the second quarter of 2001. Gross and net foreign inflows to U.S. securities markets slowed, and the dollar declined against the yen and euro.

The adjustments in global asset markets reflected, in part, more widespread sentiment that both risk and uncertainty were rising, and in part the continued aftereffects of the bursting of the TMT bubble, which have been ongoing since the first quarter of 2000. The run-up in the TMT bubble was characterized by a confluence of excesses, including the accumulation of financial imbalances, such as a buildup of debt and leverage on corporate balance sheets that ultimately proved unsustainable. The boom phase was also marked by steep rises in equity prices, related to misaligned incentives that led corporate managers to inflate earnings in order to boost share prices. A combination of overambitious promises of above-average returns and compensation systems geared toward incentives to maximize short-term share price increases provided powerful, sometimes irresistible, incentives to use every trick in the book, especially when growth rates started to flatten. Notwithstanding corporate managers' stated adherence to the principle of shareholder value, heavy grants of share options and other excesses served to dilute that value, much as managerial underperformance had done in more banking- and creditor-oriented financial systems in earlier years. By the late 1990s, the last stages of the boom brought aggressive accounting practices by some companies, lapses in investor oversight and scrutiny by fiduciary intermediaries, gaps in official enforcement, and what U.S. Federal Reserve Chairman Alan Greenspan has characterized as an environment of "infectious greed" in the business community (Greenspan, 2002). This environment has led many to believe that there is a need to remove the asymmetry in current business practices between accelerating the recognition of revenues and management rewards, while deferring (or even hiding) liabilities and costs, including the expensing of stock options, until well into the future.

Revelations of the excesses and imbalances of the bubble led to sharp repricings of assets for the affected companies and others—along with widespread demands for reforms to improve corporate governance and accounting practices. The attendant adjustment has unwound at least some of the excesses and imbalances, as suggested by deflation in TMT stocks worldwide, sharp increases in credit spreads for TMT companies, and substantial numbers of defaults and bankruptcies. Moreover, there is anecdotal evidence that restructuring firms and distressed-asset specialists are receiving inflows of capital from investors and stand ready to more actively

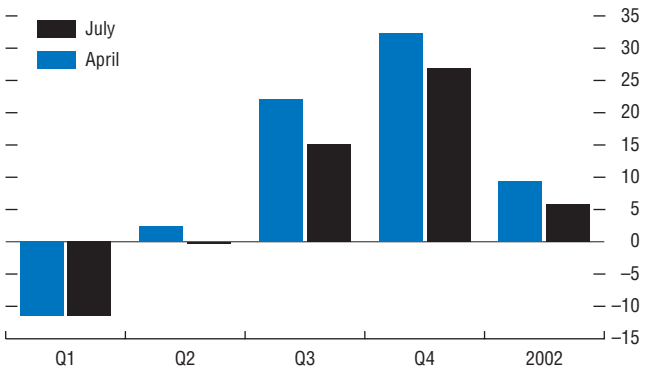
buy underpriced assets. These activities could help to establish a floor for asset prices and stabilize markets.

Most recently, the deterioration in asset markets seemed to be driven by an erosion of investor confidence and heightened risk aversion that had two main underlying causes. First, there was growing uncertainty about the strength and durability of the global recovery and in particular about corporate earnings, for which forecasts were revised down for the United States and other mature markets (Figure 2.1). Since July 2001, estimated S&P 500 earnings growth for the second quarter of 2002 has been revised down from 29 percent to roughly flat. Estimates for the second half of 2002 have been markedly reduced as well, partly reflecting the uncertainty about the economic outlook.

At first glance, the first-quarter year-on-year contraction in firm-reported profits seemed to contrast with the positive growth in the national income and product accounts (NIPA) measure of profits (Figure 2.2). Analysis reveals that the difference in growth rates partly reflected the fact that NIPA profits are adjusted for the costs associated with the exercise of stock option grants and adjustments for accelerated depreciation allowances in last autumn's economic recovery legislation, whereas firm-reported profits do not reflect these effects (Greenspan, 2002). In particular, the granting of fewer options packages in the latest reporting periods contributed to a year-on-year percentage increase in reported NIPA profits.

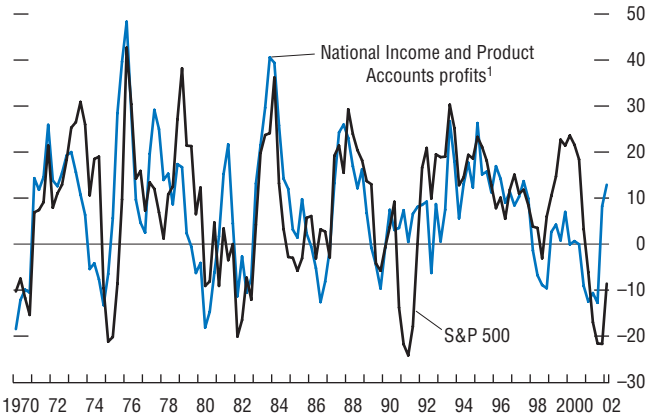
Second, investor trust in reported earnings and accounting practices was shaken by several major restatements of earnings by high-profile firms. The firms included WorldCom, which incorrectly classified operating expenses as capital expenditures, overstating income by $7.2 billion during the five quarters from the first quarter of 2001 to the first quarter of 2002; Xerox, which improperly booked revenues from long-term leases in the current period, overstating income by $6.4 billion; energy companies that engaged in "energy swaps"—some exceeding $1 billion—to inflate revenues; and Vivendi, which was sus-

Figure 2.1. S&P 500 Earnings Growth Forecasts for 2002
(In percent)



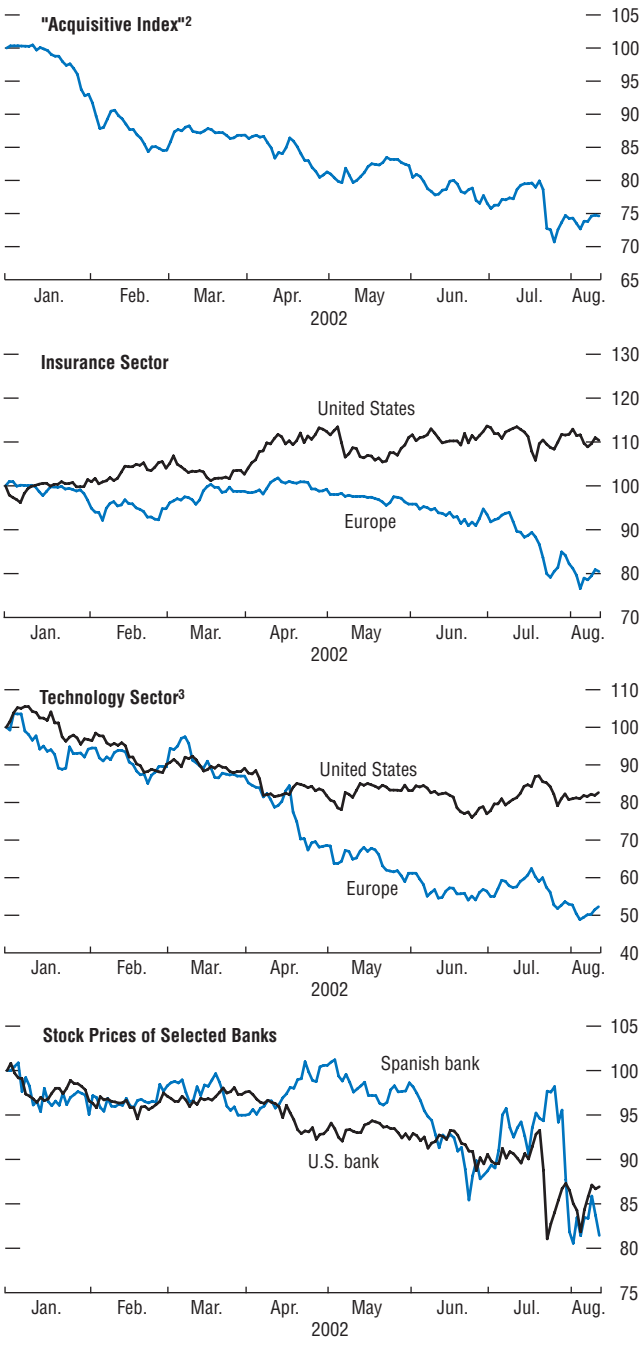
Source: Thomson Financial First Call.

Figure 2.2. S&P 500 and National Income and Product Accounts Profits
(In percent; year-on-year change)



Sources: U.S. Department of Commerce, Bureau of Economic Analysis; Bridgewater Associates; and Thomson Financial First Call.
[1]Corporate profits with inventory valuation and capital consumption adjustments.

Figure 2.3. Relative Performance in Stock Markets[1]
(January 1, 2002 = 100)



Sources: Bloomberg L.P.; and IMF staff estimates.
[1]Performance of the specified price index relative to the overall stock price index (S&P 500 for the United States, and FTSE Eurotop 300 for Europe).
[2]Performance of the stock prices of the most active acquisitive companies in the United States to S&P 500 price index.
[3]Hardware subindexes.

pected of inappropriately accounting for the sale of a stake in a British pay-TV firm. These incidents brought the issues raised by Enron's collapse back into sharp focus, fueling the debate over accounting, disclosure, and transparency issues (Box 2.1). They particularly called into question the valuations of firms that have aggressively made acquisitions, which are subject to accounting manipulation—as indicated by the sharp decline in their stock prices relative to broader price indexes (Figure 2.3).

In this environment, a confluence of factors created an environment of uncertainty that was conducive to heightened risk aversion. These factors included the aforementioned downward earnings revisions and revelations of aggressive accounting practices and in some instances outright fraud. In addition, concerns arose about the soundness of corporate balance sheets, including the extent of remaining imbalances in sectors such as telecoms. Finally, investors also appeared to become increasingly uncertain about more fundamental and structural aspects of the global economy and markets. Examples included uncertainty about the sustainability of the "new economy" business model; the veracity and usefulness of corporate financial reports and accounting standards more generally; and, especially in emerging markets, the transparency, efficacy, and continuity of legal and policy frameworks.

Eroding investor confidence and heightened risk aversion were reflected in declining equity prices globally. U.S. markets sank to near or below autumn 1998 lows, with the S&P 500 index down about 20 percent in the year through mid-August, and down more than 40 percent compared with its March 2000 peak. Meanwhile, European stocks declined by more than 25 percent so far this year, partly reflecting a sharp decline in bank and insurance stocks. A 2000-point decline in the Nikkei that started in mid-June left the index down 10 percent, reflecting continued uncertainties about Japan's economic recovery and the pace and depth of reform. Declines in TMT stock prices occurred amid concerns about overcapacity and high debt lev-

Box 2.1. Governance and Accounting Issues

The recent series of reported corporate irregularities in the United States and elsewhere has imposed large costs on investors and regulators alike. These irregularities have brought to the fore questions about appropriate official responses to improve governance, accounting, and disclosure practices, not just in the United States but also in global markets generally.

The cases of Enron and WorldCom have seen both governance and accounting failings that have resulted in the manipulation of earnings and concealment of underlying liquidity and solvency problems. The Enron case saw management disregard accounting principles and choose "aggressive" interpretation of accounting rules to disguise losses off-balance sheet. The WorldCom case, on the other hand, appears to be a disregard by management of a fundamental accounting principle in order to bolster earnings. The latter case illustrates that the best principles do not matter unless implemented. History also contains examples from other countries of governance and accounting abuses. These and more recent practices reveal what could amount to wider reaching corporate governance and accounting issues including:

- ***Accelerating recognition of revenues***—for example, by advancing the timing of recognition of revenues on long-term leases, and long-term license fees, or booking revenue when a product is shipped to a distributor or reseller without an obligation to repurchase (referred to as "channel stuffing").
- ***Boosting revenues by recording nonoperating transactions as revenues***—for example, by recording the sale of an equity stake as revenue, or engaging in "swap" trades of like products to give the appearance of economic activity where there is none.
- ***Altering transactions with other parties to delay or avoid recognition of expenses***—for example, by prematurely recognizing vendor allowances and rebates, recording false credits from vendors for damaged and outdated goods, and capitalizing operating expenses.
- ***Exploiting classification alternatives***—for example, the choice between capital versus operating leases (especially airlines), and for financing instruments (trust preferred shares) constructed to be treated like debt for tax purposes but treated like equity for accounting purposes and the investor community.
- ***Treatment of stock options grants***—for example, by not expensing stock option grants in the determination of net income or providing good disclosure, and re-pricing of stock options as market conditions change.
- ***Other revenue enhancing measures***—for example, by using securitizations and sale of receivables to smooth earnings, or by changing assumptions for pension funding requirements.
- ***Nonconsolidated or off-balance-sheet entities***, such as by using Special Purpose Vehicles and limited partnerships to hide debt, or by using guarantees, contingent liabilities and credit for liquidity triggers.

The regulatory response to governance and accounting weaknesses will reflect varying regulatory responsibilities across markets and disciplines. In the United States, for example, several proposals have been forthcoming for new oversight arrangements for accountants and auditors, and stricter rules for corporate governance and disclosure. On July 30, President George W. Bush signed into law the Public Company Accounting Reform and Investor Protection Act of 2002, which replaces the accounting industry's self-regulation with a public oversight body and raises the benchmark for auditor and management accountability. Meanwhile, the New York Stock Exchange has approved rules that would mandate more stringent standards for corporate governance and disclosure practices of NYSE listed companies. In the United Kingdom, the Institute of Chartered Accountants of England and Wales Council have recently adopted new recommendations to strengthen auditor independence.

In the area of accounting and disclosure standard setting, the recent debate has seen discussion of the relative merits and demerits of rules-based versus principles-based standards setting mechanisms—the approaches underlying U.S. accounting standards and international accounting standards, respectively. Against the back-

Box 2.1 (concluded)

ground of efforts in recent years to seek improvement and global convergence of standards, the European Commission, for example, has mandated that listed companies prepare financial statements in accordance with International Accounting Standards (IAS) by 2005. In the same vein, work is also under way within the International Organization of Securities Commissions (IOSCO) for continued improvement of national accounting standards and the development of mechanisms for consistent application and enforcement, as well as progress in convergence betweeen IAS and U.S. GAAP. In the United States this falls within the ambit of the SEC. In this context, the above-mentioned Act of 2002 mandates the SEC to report to Congress on the U.S. adoption of a principles-based accounting system.

At the international level, IOSCO has formed a committee of heads of securities regulatory agencies to identify common issues arising from Enron. This high-level committee has identified accounting and audit standards and continuous disclosure standards as key issues and will report on its progress to the Financial Stability Forum in September. The work of the committee also includes a dialogue with IFAC (the body responsible for preparing International Standards on Auditing) on the structure of the audit industry—in particular, on the concentration of audits in the big four accounting firms.

The IAS Board has several projects of relevance in its work plan. These include: (1) a project on consolidation and special purpose vehicles and a project on revenue definition and recognition (both of which were added as a matter of some urgency following the Board's June meeting this year); (2) an Exposure Draft on employee stock options, which is planned for issue in the fourth quarter of 2002; and (3) further research to address the dichotomy between financial and operating lease accounting.

els, as indicated by the near 33 percent fall in the Nasdaq.

Increasing risk aversion and deteriorating investor sentiment were also reflected in price/earnings (P/E) ratios and equity options prices (implied volatilities) (Box 2.2 and Figure 2.4). P/E ratios and implied volatilities suggest three main shifts in investor beliefs in the major equity markets. First, implied volatility has risen in European, Japanese, and U.S. markets, consistent with an increase in investor uncertainty and concern about the risk of future price moves (although peaks in implied volatility have also coincided with market turns, in some instances). Second, P/E ratios imply a downward shift in future earnings expectations in Japan and the United States, notwithstanding (in the U.S. economy) some evidence of an improved near-term outlook. Third, the equity risk premium has risen in the recent period, although it remains below its early 1990s' average. These indicators suggest that shifts in investor sentiment and beliefs have played a role in recent price corrections, and that an additional deterioration in investor sentiment could result in further corrections.

Deteriorating investor sentiment, along with a still-elevated pace of corporate defaults, was also reflected in credit market prices and flows. Credit losses continued apace as imbalances from previous years continued to be worked off, including in the TMT sector globally. The global speculative-grade default rate stood at 6.6 percent in the year through July 10, above the 2000 level of under 5 percent, while the investment-grade default rate was well below both 2000 and 2001 levels. European speculative grade default rates were especially high in the year to July 10—8.5 percent on EU issues, against 4.9 percent for U.S. issues. In addition, the period under review saw reports of financial troubles at prominent European companies such as Philipp Holzmann, Kirch Group, and Vivendi. These companies' troubles were not uniformly reflected in credit market prices and flows, given the heavy reliance of European corporations on bank loans.

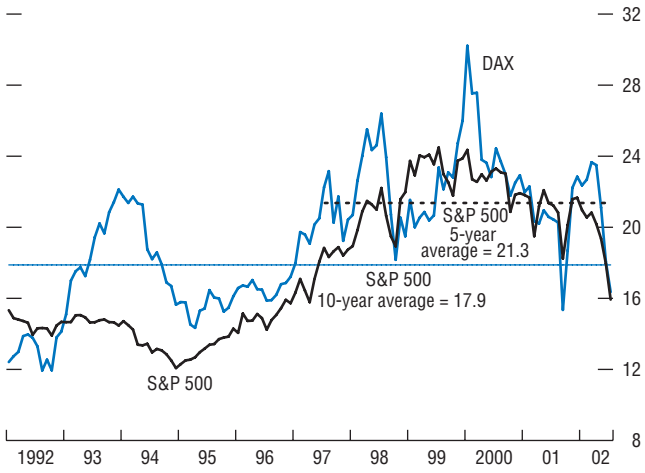
Instead, they were implicit in the 22 percent decline in European bank stocks in the year to mid-August.

Overall, developments in the credit markets suggested a "shift to quality" and growing risk aversion. Consistent with the still high pace of defaults in high-yield markets, high-yield spreads rose by about 160 basis points to more than 800 basis points, the highest levels since the post-September 11 blowout in spreads. By contrast, investment-grade spreads widened only modestly, and remained below their post-September 11 peaks. In the primary markets, high-yield issuance was 55 percent lower than in the same quarter of 2001, whereas investment-grade issuance was about a third lower. The continued deterioration in markets suggested that in the period ahead, higher-risk borrowers, including in emerging markets, could face even tighter financing conditions.

Although the deterioration in credit markets was worst among high-yield issuers, problems emerged among high-grade issuers as well, as evident in conditions in commercial paper (CP)—particularly in the United States—and long-term bond markets. During the first half of 2002, many lower-tier issuers exited the CP market, turning to commercial banks or the bond market for financing. With many firms exiting and others reducing their liquidity exposures, the U.S. commercial paper market continued to contract through the spring, albeit at a slower pace than over the previous five quarters. The outstanding amount of nonfinancial domestic CP fell to $148 billion, less than half its late 2000 peak. The quality tiering in the market decreased somewhat as a result of these reduced supply pressures, and spreads between rates paid by A2P2- and A1P1-rated issuers narrowed from the elevated levels in the first quarter to 30 basis points or less (still higher than typical).

In the bond market, "fallen angels," firms that fell from investment grade to subinvestment grade, now account for the highest share of the total corporate market since the previous recession. Firms in the telecom sector and those with questionable accounting have figured promi-

Figure 2.4. Twelve-Month Forward Price/Earnings Ratios[1]
(In percent)



Source: I/B/E/S.
[1]Price/earnings ratios are based on rolling average quarterly consensus earnings expectations.

Box 2.2. Equity Markets Indicate Deteriorating Investor Confidence, Lower Earnings Expectations, and Rising Risk Perception/Aversion

Recent equity price movements in the major markets have been associated with:

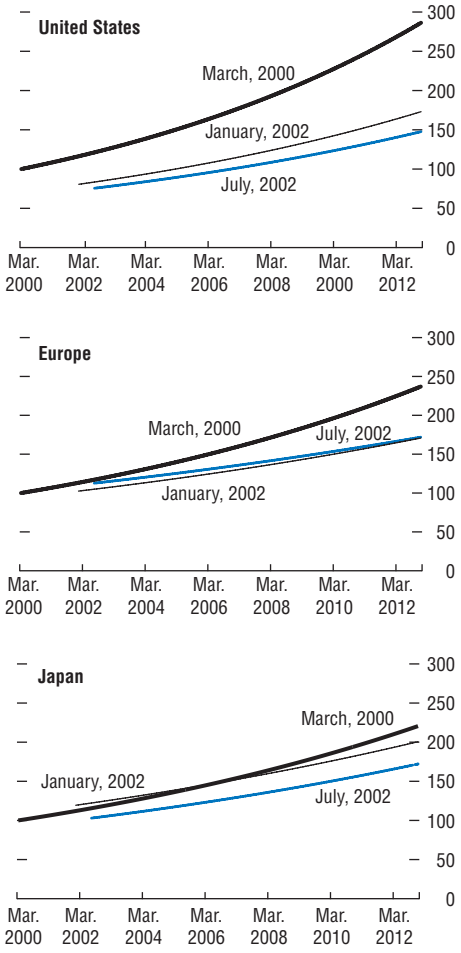
- surging implied volatility;
- declining earnings expectations embedded in equity prices; and
- rising equity risk premiums.

Implied equity price volatility derived from option prices—which is indicative of investors' uncertainty about future stock prices—increased in key advanced countries despite relatively small increases in actual equity market volatility (see the first figure). In Germany and the United Kingdom, implied volatility almost doubled in the second quarter. Implied volatility also appears to have become more correlated across countries than in the past (with the exception of September 11 and market turbulence in 1998). From a longer-term perspective, in June 2002, implied volatility in some European countries, the United States, and Japan was approaching the upper end of the typical range of the past few years. A surge in program trading and, more recently, in short selling and short covering may have contributed to the increased historical volatility in equity markets, particularly in the United States.[1]

Stock market valuations indicate that future earnings expectations have been revised downward, chiefly in the United States. Future earnings paths implied by equity prices based on a Gordon-type discount model with a constant equity premium have shifted noticeably (see the second figure).[2] Actual earnings in the United States have declined sharply since the peak of the equity market in March of 2000, and the implied future earnings path has flattened. In Europe, implied earnings paths have rotated around relatively stable earnings, with current earnings slightly higher than at the beginning of 2002. In Japan, implied earnings expectations have shifted down mostly since the beginning of this year. Equity valuations currently imply future earnings growth rates of 6.6 percent, 4.1 percent, and 5.1 percent in the U.S., Europe, and Japan, respectively, down from 8.6 percent,

Implied Earnings Paths[1]

(In percent; March 13, 2000 = 100)



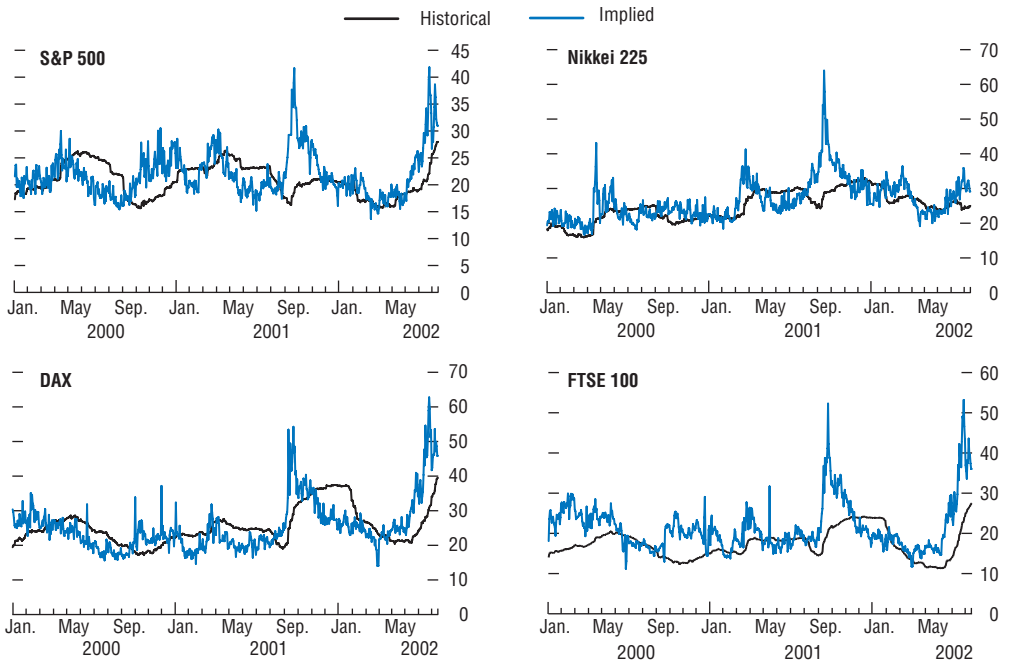
Sources: Datastream; and IMF staff estimates.

[1]Earnings indexes are derived from Datastream's total market price indexes and price/earnings ratios. Expected earnings growth rates implied by price/earnings ratios and long-term interest rates are calculated based on a Gordon-type discount model with a 6 percent equity risk premium.

[1]In the last week of June, program trading accounted for 51 percent of the trading volume on the New York Stock Exchange, up from 28 percent in 2001 (Financial Times, July 17, 2002).

[2]The model is described in IMF (1998), pages 48–49, and in IMF (2001), pages 12–13. See also Gordon (1962).

Implied and Historical Volatility in Equity Markets



Sources: Bloomberg L.P.; and IMF staff estimates.

Note: Implied volatility is a measure of the equity price variability implied by the market prices of call options on equity futures. Volatilities are expressed in percent rate of change.

7.0 percent, and 6.4 percent anticipated in March 2000.[3]

The recent drop in equity prices also appears to partly reflect rising equity risk premiums that suggest larger perceived equity market risks and/or rising risk aversion. In the United States, the equity risk premium—approximated by the difference between the earnings yield on the S&P 500 (based on expected earnings) and the real 10-year treasury bond yield—has risen from close to zero in early 2000 at the height of the market to about 3 percent in late June 2002.[4] A further increase to 4 percent (the average risk premium in the early 1990s), while holding constant the path of expected earnings, would reduce equity valuations in the United States by about 15 percent.

[3]The implied earnings growth rates are predicated on an equity risk premium at its long-run average of 6 percent. All other things equal, implied earnings growth rates move approximately one-for-one with changes in the assumed equity premium. Between mid-1990 and mid-2002, actual earnings grew on average by 6.3 percent, 4.9 percent, and –2.7 percent per year in the United States, Europe, and Japan, respectively.

[4]Similarly, estimated risk premiums rose in Germany from close to zero in early 2000 to about 3 percent in June 2002, and in Japan from zero in early 2001 to about 2 percent most recently. For more explanation of this measure of the risk premium, see United States, Board of Governors of the Federal Reserve System (2001) and Deutsche Bank (2002). Inflation expectations in the United States were measured by the 10-year expected CPI inflation rate from the Federal Reserve Bank of Philadelphia Survey, and in Germany and Japan by the 10-year ahead Consensus CPI inflation forecast.

nently in downgrades. The removal of these troubled companies from the investment-grade class has moderated the impact of lower aggregate credit quality on spreads, as measured in investment-grade indices.

Price adjustments in equity and credit markets and a continued elevated pace of defaults adversely affected the balance sheets of global financial intermediaries, including commercial and investment banks that were already coping with the effects of reduced issuance and mergers and acquisitions (M&A) activity and rising credit costs on wholesale business earnings. U.S. banks had relatively strong core earnings, reflecting the steep yield curve, effective loss-reserve management, and abundant liquidity that derived partly from the outflow of funds from stocks into deposits. For securities firms, earnings have begun to rebound modestly in the second quarter, but increasing competition with banks entering the investment banking business has intensified already strong competitive pressures. Looking ahead, some U.S. institutions may face reputational risks owing to their relationships with companies involved in accounting irregularities and fraud.

European financial institutions have generally had to cope with a worse economic environment than U.S. financial institutions. Subpar economic growth has adversely affected European financial institutions' profitability, although it has not affected their systemic stability. In Germany, for example, while systemic stability is not in question, a significant increase in credit costs has added to an already high cost base of many banks. Moreover, German banks' substantial direct and indirect exposures to equity markets, on account of both extensive cross-shareholdings and, in some instances, close links to insurance companies, have recently depressed profitability. European banks' share prices—which have performed more poorly than those of U.S. institutions—may also have been affected by concerns over their generally complex accounting structures, similar to some of the more diversified U.S. financial institutions. German banks have sought to improve upon low domestic profit margins—reflecting the dominant role of public financial institutions—by expanding into investment banking and international markets. These banks have been hit particularly strongly by deteriorating profits in the securities business, forcing many of them into strong cost-cutting efforts. Further consolidation in the domestic banking sector is likely to take place as public guarantees for the *Landesbanken* and *Sparkassen* are slated to expire in stages through end-2005. European banks have also been adversely affected by the deterioration in emerging markets. This included Spanish banks exposed to Latin America (see Figure 2.3).

From a more medium-term perspective, questions also arose about how a strategic reorientation of wholesale banking by European and U.S. institutions might more broadly affect market activity and credit flows. A confluence of factors—the aftershocks of the bursting TMT bubble, widespread market corrections, the drying-up in IPO and M&A activity, the deteriorating credit quality of corporate borrowers, and the sharp drop-off in trading and brokerage revenues—led a range of financial institutions to reassess their wholesale banking activities. Many banks announced plans for cutbacks in investment banking staff, seemingly reflecting a view that fee-driven market activities would not recover soon. In tandem, retail businesses began to look more attractive than wholesale businesses. If sustained, these trends could be consistent with a curtailment or drying up of credit to riskier borrowers, including those in emerging markets.

For Japanese banks, the economic environment—which had improved until recent months—has again deteriorated, depressing credit quality. Moreover, stock values have declined below levels attained at the end of the fiscal year in March 2002. As a result, continued high loan losses as well as losses on banks' substantial equity portfolios will reduce bank capital. Although banks have attempted to boost core profitability, including by charging higher loan margins, the weak financial state of most

borrowers (especially small and medium-sized enterprises) provides limited room for growth. Operating profits are therefore unlikely to increase significantly, particularly since bond and derivatives trading gains—which boosted profits of the major banks in the latter half of fiscal year 2001—appear largely unsustainable (Yamaoka, 2002).

Meanwhile, institutional investors, and in particular European insurance companies, were also affected by stock price adjustments and ongoing credit losses, raising concerns that they might sell riskier parts of their portfolios to raise cash.[2] Institutional investors generally experienced losses from credit problems as companies such as WorldCom defaulted on debt (for WorldCom, some $30 billion in bonds—a significant share of which was held by insurance companies). Insurance company stocks in particular came under pressure, and European insurers saw their stock prices fall by 38 percent between the end of March and the end of July amid concerns about their exposures to global equity and credit markets. Reinsurers have come under pressure as well. Moody's and Standard and Poor's both initiated reviews of the triple-A credit rating of Munich Re following its move to recapitalize its U.S. subsidiary and increase provisions for claims resulting from the September 11th attacks by €500 million.

In some cases the size of losses has raised questions about the adequacy of the insurance and reinsurance sectors' capital reserves. In particular, concerns arose that pressure on solvency ratios could lead insurers to sell liquid financial assets—particularly equities—or turn to their parent companies (if any) for capital injections. In July, the U.K. Financial Services Authority changed its "resilience tests" on equity portfolios to allow insurers to base the tests on the three-month average of past equity prices, rather than the current price.[3] Similarly, the Swiss government may lower the mandated rate of return for pension funds.

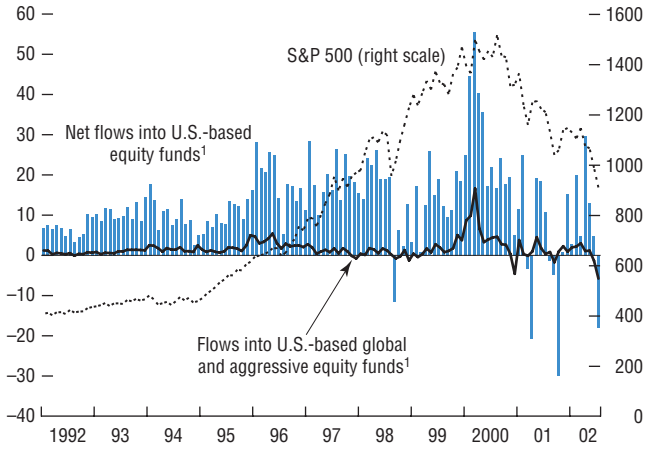
A substantial part of the revaluation in asset markets was absorbed on household balance sheets, reflecting increasing retail ownership of financial assets in major countries. In recent years households in major countries have held an increasing share of their wealth in traded assets (IMF, 2002a). As a result, financial risk is more widely spread throughout the economy, and tends to have a less direct effect on the condition of financial institutions. At the same time, this implies that financial risk could have more of an effect on economic activity. A 20 percent decline in U.S. equities is estimated to reduce U.S. consumption growth by 1 percent of GDP over two years. Moreover, the wealth effect of the recent decline in U.S. equity markets amounts to about 70 percent of disposable income—the highest percentage in the postwar period (Bridgewater Daily Observations, 2002b). Another implication is that financial market conditions may rely more on the portfolio behavior and attitudes of retail investors than in the past.

Concerns about possible retail selling have heightened amid signs of outflows from equity mutual funds. The period from 1990 to 2002 saw an unprecedented surge of flows, cumulatively totaling $1.7 trillion, into U.S.-based equity mutual funds (Figure 2.5)—about half of which occurred when the market was above its current level. Net monthly inflows peaked at $55.6 billion, about five times the average monthly level, in February 2000—one month before the S&P 500's peak. Flows into U.S.-based equity mutual funds held up relatively well through the first quarter of 2002, but there were $18 billion in outflows in June and industry sources are suggesting a record high outflow of about $47 billion in July. These recent outflows are reflecting, in part, a shift into high-grade bonds. Even with these recent outflows, the amount of retail funds

[2]Chapter III of the June 2002 issue of the *Global Financial Stability Report* (IMF, 2002b) discusses some of these problems, and the implications of insurers' and reinsurers' increasing financial market activities.

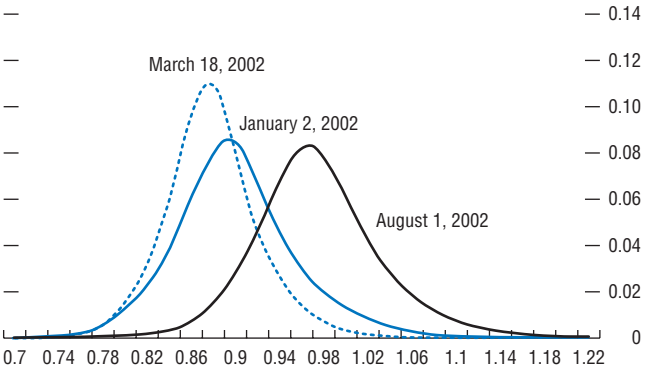
[3]Financial Services Authority (2002). A 25 percent fall in stock prices would be calculated as a 15 percent fall in the current price, if current prices were 10 percent under their three-month average.

Figure 2.5. Flows into U.S.-Based Equity Funds



Sources: AMG Sample Data; and Investment Company Institute.
[1]In billions of U.S. dollars; left scale.

Figure 2.6. Implied Risk-Neutral Probability Density Functions, Euro–U.S. Dollar, Three-Month Horizon
(In percent)



Sources: Reuters; and IMF staff estimates.

that has remained invested in equities is high relative to the accumulated inflow during the past several years. A continuation of the estimated record outflows seen in July is a risk in the period ahead, and would be consistent with households selling parts of their equity portfolios to preserve wealth and future pension incomes. This would become more likely if there were continued increases in unemployment and/or a sharp reduction in the values of other assets, such as housing.

Concerns have also arisen about a potential further deterioration of international investor sentiment toward U.S. financial markets, as seemingly reflected in the pattern of international capital flows. In the first five months of 2002, net foreign purchases of U.S. stocks were substantially lower compared with 2001. This coincided with a sharp decline in euro-area investors' purchases of foreign portfolio assets, while Japanese investors were net sellers of U.S. securities in the first five months of 2002. First quarter foreign direct investment (FDI) into the United States was also below 2001 levels, reflecting muted foreign M&A; FDI outflows also declined, putting net flows roughly in balance (Table 2.1).

Coinciding with reduced securities and FDI inflows, the dollar declined against the other major currencies. Through end-July, it declined 10 percent against the euro—temporarily breaking through parity on July 15—and 9 percent against the yen. The dollar also declined about 8 percent in nominal effective terms, unwinding its 2001 appreciation. In real effective terms, the dollar is well above its average in the 1990s, but below its peaks in the 1980s.

Derivatives markets are pricing in a possible further decline in the dollar against the other major currencies (Figure 2.6). Several conclusions can be drawn from examining the movement of probability density functions (PDFs) extracted from currency options prices:[4]

[4]Implied PDFs are intended to quantify market views of exchange rate movements and, like implied volatilities, reflect underlying assumptions and calculation methods.

Table 2.1. Composition of U.S. Capital Flows[1]
(In billions of U.S. dollars; at annual rates)

	1997	1998	1999	2000	2001	2002:Q1
Current account balance	–128.4	–203.8	–292.9	–410.3	–393.4	–449.9
Financial account balance	219.2	63.8	264.9	409.5	381.8	397.7
Official capital, net	18.1	–27.1	55.2	36.4	–0.2	38.7
Foreign official assets in the United States	19.0	–19.9	43.7	37.6	5.2	36.1
U.S. official reserve assets	–1.0	–6.8	8.7	–0.3	–4.9	1.6
Other U.S. government assets	0.1	–0.4	2.8	–0.9	–0.5	1.0
Private capital, net	201.1	90.9	209.7	373.1	382.0	359.1
Net inflows reported by U.S. banking offices	151.9	38.3	57.5	115.1	110.0	–101.8
Securities transactions, net	172.9	48.8	125.9	250.7	305.3	266.8
Private foreign net purchases of U.S. securities	291.8	184.9	254.3	378.2	400.0	258.6
Treasury securites	130.4	28.6	–44.5	–77.0	–7.7	–22.7
Corporate and other bonds	92.6	110.7	185.9	262.8	288.2	181.4
Corporate stocks	68.8	45.6	112.9	192.4	119.5	99.9
U.S. net purchase of foreign securities	–119.0	–136.1	–128.4	–127.5	–94.7	8.2
Bonds	–61.4	–34.9	–14.1	–23.9	12.1	2.3
Stocks	–57.6	–101.3	–114.3	–103.6	–106.8	5.9
Direct investment, net	0.8	36.4	100.6	129.5	3.0	12.7
Foreign direct investment in the United States	105.6	179.0	289.5	307.7	130.8	102.8
U.S. direct investment abroad	–104.8	–142.6	–188.9	–178.3	–127.8	–90.1
Foreign holdings of U.S. currency	24.8	16.6	22.4	1.1	23.8	18.1
Other	–5.2	–15.1	–17.1	23.4	68.0	122.7
Statistical discrepancy	–91.2	139.3	31.3	0.0	10.7	51.4

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. International Transactions Accounts Data;* and Board of Governors of the Federal Reserve System, *Federal Reserve Bulletin,* May 2002.
[1]Data for 2002:Q1 are annualized. Capital account balance is not shown.

- First, market participants are less certain about their expectations of the dollar than they were earlier this year. The increase in implied volatility of euro/dollar options is reflected in a wider degree of dispersion of the most recent PDF.
- Second, the market attaches considerably more weight to a stronger euro vis-à-vis the dollar than it did earlier this year. For example, whereas in March the market placed virtually no weight to the euro reaching parity against the dollar (three months out), the market is now putting considerable weight on that possibility.[5]
- Third, the balance of expectations is skewed toward further dollar depreciation over the next three months. The cost of insuring against a dollar depreciation relative to the cost of insuring against a dollar appreciation of the same degree—the so-called risk reversal price—has risen to a level last seen during the uncertainty generated by the September terrorist attacks.[6]

Thus, if taken at face value, market beliefs imply a continued depreciation of the dollar.

They should not be interpreted as accurate forecasts of future asset values. Nonetheless, their informational content is reasonably reliable. Comparing risk reversal prices as a leading indicator of expected dollar depreciation over the following three months with actually realized dollar depreciation over that period indicates a reasonable fit of the past year. Correlations between forecast and realized currency appreciations indicate a broad ability to predict the direction of movements.

[5]The probability associated with a particular exchange rate outcome is the result of the location of the PDF. This, in turn, is driven by the current forward rate (the mean), which is determined by the spot rate and interest differentials.

[6]A risk reversal is the price of a long out-of-the-money foreign currency call option relative to the price of an equally out-of-the-money short foreign currency put option.

Main Financial Market Risks Associated with Shifts in the Pattern of Global Capital Flows

Slowing foreign purchases of U.S. financial assets, the apparent underlying "shift to quality," and the weakening dollar raise questions about potential further changes in the pattern of international capital flows. In particular, the record net demand for U.S. assets during recent years—amounting to $400 billion in 2001, or a full two-thirds of the rest of the world's net savings—seems to have reflected widespread and persistent expectations that the U.S. economy would continue to generate the highest risk-adjusted returns on investments.[7] This raises three questions. First, what could be the international financial market implications if international portfolio managers and investors were to begin perceiving relatively more attractive investment opportunities elsewhere—including in the home markets that they have traditionally overweighted? Second, through what channels might a change in the pattern of capital flows impinge on international markets? And third, based partly on historical experience, is there cause for concern about the financial stability implications of such adjustments?

The experience of 1987–1991—when an adjustment in the U.S. external imbalance from 3½ percent of GDP to zero occurred without triggering turbulence in mature markets—suggests that U.S. capital inflows might decline without unduly affecting international financial stability. Nevertheless, history may be an imperfect guide to the risks ahead, given the structural changes during the 1990s. In addition, adjustments in mature markets during the 1990s have significantly affected financing to emerging markets. This is not surprising—emerging markets comprise only 5 to 7 percent of global bond and equity market capitalization, and in 2001 *gross* emerging market financing was less than half of *net* U.S. inflows. A full assessment of the risks, therefore, requires an understanding of the main forces that have led to the current situation in which the United States intermediates and absorbs an outsized share of international capital flows, and of the attendant risks of a shift in the pattern of flows that could affect conditions in U.S. and international financial markets.

The Major Financial Centers as Global Intermediaries and Investment Destinations

The major countries' financial systems, particularly the U.S. financial system, are major "hubs" for gross international capital flows and investment. In 2000, the peak year for total global flows, the Group of Seven (G-7) countries accounted for $2.6 trillion in gross capital inflows and $2.3 trillion in outflows, or about 70 percent of the respective totals (Table 2.2; gross emerging markets inflows amounted to 6 percent of total G-7 outflows).[8] In effect, the major country financial systems serve as "international banks," taking in gross inflows of capital from abroad, retaining some of the flows, and distributing the rest internationally. In return, international financial centers generate jobs in the financial industry, incomes, and even tax revenues, and national markets benefit by having greater access to international capital and liquidity. This role as a hub reflects a number of characteristics of these financial systems, including the wide range and sophistication of products and services offered by financial institutions and exchanges; the existence of diversified institutions that have large capital bases to support an array of business lines; and strong and predictable legal, regulatory, and supervisory environments.

The U.S. economy and financial system stands out as a large intermediary, accounting for more than one-third of global gross inflows and one-fifth of outflows. On the supply side, U.S. in-

[7]The macroeconomic counterpart of this has been concern about the size of the current account deficit, which at just over 4 percent of GDP in 2001 is approaching the level historically associated with reversals in the major countries (Freund, 2000).

[8]The figures do not net out transactions between countries owing to a lack of bilateral data.

vestors have $7 trillion in gross claims, and nearly $5 trillion in direct and portfolio claims, on foreign entities. On the demand side, U.S. borrowers are the largest net issuers in international fixed-income markets and the second largest in international equity markets (in 2000, they were the largest equity issuers by a wide margin).

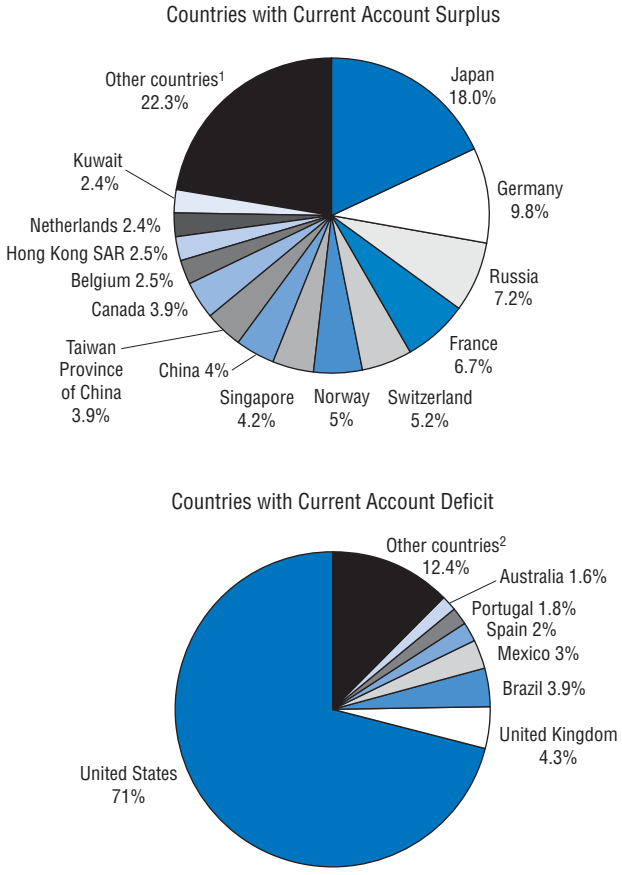
On balance, and as emphasized above, the United States attracts the lion's share—more than 70 percent—of global net foreign savings, absorbing a record $400 billion in 2001 (Figure 2.7).[9] Three factors have driven the massive net inflows to U.S. financial markets and may provide clues about what might sustain—or cause further slowing in—net inflows. First, and most important, portfolio flows have been driven by international investors' perception that U.S. financial assets offer superior investment opportunities. This perception reflected higher productivity growth in the United States than in the other major economies, expectations that this growth will continue, and a belief that the U.S. macroeconomic policy framework has been more conducive to high output growth than the frameworks in place elsewhere. In the past, both risk-adjusted and unadjusted U.S. asset returns reinforced this perception, as U.S. equity and fixed income markets outperformed those in Europe and Japan on a risk-adjusted basis (Table 2.3).[10] Similarly, interest rate differentials—which reflect cross-country differences in short-term risk-adjusted returns, given that short-term money-market risks are small—have driven short-term banking flows.

Second, the economic globalization of the 1990s enhanced the strategic motives for businesses to expand internationally to compete, spurring a boom in cross-border M&A and FDI.

[9]To put this figure in context, U.S. GDP is about 60 percent of the total GDP of deficit countries. As an alternative measure, the United States absorbs about 6 percent of total global savings. Here, the focus is on cross-border savings flows that are reflected in capital flows.

[10]The table omits comparisons on FDI returns, which for FDI in the United States have been consistently low compared to the return on U.S. FDI abroad and the return on other U.S. companies. Research has been unable to explain much of this low return (Mataloni, 2000).

Figure 2.7. Shares of Countries with Current Account Surplus and Deficit in 2001



Source: IMF staff estimates.
[1]Other countries include all countries with shares of total surplus less than 2.4%.
[2]Other countries include all countries with shares of total deficit less than 1.6%.

Table 2.2. Global Capital Inflows and Outflows[1]

(In billions of U.S. dollars)

	Inflows										
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
United States											
Direct investment	23.2	19.8	51.4	46.1	57.8	86.5	105.6	178.2	301.0	287.7	158.0
Portfolio investment	57.5	72.0	111.0	139.4	237.5	367.7	385.6	269.4	354.8	474.6	540.3
Other investment	30.1	78.9	119.7	120.5	170.4	131.8	267.9	56.9	158.0	262.0	197.2
Reserve assets	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total capital flows	110.8	170.7	282.1	306.0	465.7	586.1	759.1	504.4	813.8	1,024.2	895.5
Canada											
Direct investment	2.9	4.8	4.7	8.2	9.3	9.6	11.5	22.5	25.2	62.8	27.6
Portfolio investment	27.5	20.5	41.4	17.2	18.4	13.7	11.7	16.6	2.5	13.7	19.3
Other investment	–0.3	–2.2	–6.7	16.0	–3.9	15.7	28.0	6.1	–8.5	0.5	5.2
Reserve assets	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total capital flows	30.2	23.1	39.4	41.4	23.9	39.1	51.2	45.2	19.2	76.9	52.1
Japan											
Direct investment	1.3	2.8	0.1	0.9	0.0	0.2	3.2	3.3	12.3	8.2	6.2
Portfolio investment	127.3	9.6	–6.1	64.5	59.8	66.8	79.2	56.1	126.9	47.4	60.5
Other investment	–108.2	–105.2	–32.7	–5.6	97.3	31.1	68.0	–93.3	–265.1	–10.2	–17.6
Reserve assets	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total capital flows	20.4	–92.9	–38.7	59.8	157.1	98.1	150.4	–34.0	–125.9	45.4	49.1
United Kingdom											
Direct investment	16.5	16.6	16.5	10.7	21.7	27.4	37.4	74.7	87.8	119.9	53.9
Portfolio investment	18.2	16.2	43.6	47.0	58.8	68.0	43.5	35.3	181.0	259.2	55.2
Other investment	18.5	96.4	191.4	–10.8	106.2	254.4	328.4	97.2	100.6	426.1	319.9
Reserve assets	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total capital flows	53.2	129.1	251.6	46.9	186.7	349.7	409.2	207.2	369.4	805.2	428.9
Euro area[2]											
Direct investment	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	208.1	378.6	110.1
Portfolio investment	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	279.2	270.0	270.1
Other investment	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	208.2	328.6	221.6
Reserve assets	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total capital flows	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	695.6	977.1	601.8
Emerging markets											
Direct investment	39.4	48.7	71.1	97.4	126.7	148.4	180.7	175.5	199.6	187.6	213.9
Portfolio investment	26.6	43.7	101.7	91.2	21.7	79.5	56.6	31.2	48.2	30.4	9.6
Other investment	35.2	74.4	11.9	–13.8	104.8	52.5	89.9	22.7	–74.3	–68.9	2.3
Reserve assets	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total capital flows	101.2	166.8	184.8	174.9	253.2	280.5	327.3	229.4	173.5	149.0	225.8

Sources: IMF staff estimates; and IMF, *International Financial Statistics*.

[1]The total net capital flows are the sum of direct investment, portfolio investment, other investment flows, and reserve assets. "Other investment" includes bank loans and deposits.

[2]For Belgium and Luxembourg, data are not available.

This boom was particularly reflected in FDI into the United States, particularly from Europe and other regions with which the United States has had close trading relationships, and as many firms evidently sought to establish a strategic presence in U.S. markets. It was also reflected in financing transactions such as stock swaps.

Third, monetary authorities and others have accumulated U.S. dollar securities for transaction purposes, and (for monetary authorities) to establish a cushion of dollar reserves to manage exchange rates. Significantly, central banks have bought considerable amounts of top-rated U.S. fixed income securities for their reserve portfolios, while other foreign financial institutions have bought dollar securities for hedging purposes (Schinasi, Kramer, and Smith, 2001).[11] These activities reflected the dollar's role in

[11]Eichengreen and Mathieson (2000) find that trade and financial flows significantly influence the currency composition of official reserves.

Outflows										
1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
–37.9	–48.3	–84.0	–80.2	–98.8	–91.9	–104.8	–142.5	–155.4	–152.4	–156.0
–45.7	–49.2	–146.2	–60.3	–122.5	–149.8	–119.0	–136.1	–131.2	–124.9	–97.7
13.4	19.1	31.0	–40.9	–121.4	–178.9	–262.8	–74.2	–159.2	–303.3	–181.0
5.8	3.9	–1.4	5.3	–9.7	6.7	–1.0	–6.7	8.7	–0.3	–4.9
–64.4	–74.4	–200.5	–176.0	–352.4	–413.9	–487.6	–359.6	–437.1	–580.9	–439.6
–5.8	–3.5	–5.7	–9.3	–11.5	–13.1	–23.1	–34.3	–18.4	–44.0	–37.1
–10.2	–9.8	–13.8	–6.6	–5.3	–14.2	–8.6	–15.1	–15.6	–42.1	–22.4
0.9	–3.5	–0.4	–20.4	–8.3	–21.1	–16.2	9.5	9.1	–0.9	–7.6
1.8	4.8	–0.9	0.4	–2.7	–5.5	2.4	–5.0	–5.9	–3.7	–2.2
–13.2	–12.1	–20.8	–35.9	–27.9	–53.9	–45.4	–44.9	–30.8	–90.7	–69.3
–31.6	–17.4	–13.8	–18.1	–22.5	–23.4	–26.1	–24.6	–22.3	–31.5	–38.5
–81.6	–34.0	–63.7	–92.0	–86.0	–100.6	–47.1	–95.2	–154.4	–83.4	–106.8
26.5	46.6	15.1	–35.1	–102.2	5.2	–192.0	37.9	266.3	–4.1	46.6
8.4	–0.6	–27.5	–25.3	–58.6	–35.1	–6.6	6.2	–76.3	–49.0	–40.5
–78.4	–5.4	–90.0	–170.4	–269.4	–154.0	–271.7	–75.8	13.4	–168.0	–139.2
–16.8	–19.7	–27.3	–34.9	–45.3	–34.8	–62.4	–122.1	–207.5	–266.2	–39.6
–56.9	–49.3	–133.6	31.5	–61.7	–93.1	–85.0	–53.0	–39.9	–96.4	–128.7
35.3	–60.5	–68.5	–42.4	–74.9	–215.3	–275.9	–26.8	–92.6	–412.7	–248.8
–4.7	2.4	–1.3	–1.5	0.9	0.7	3.9	0.3	1.0	–5.3	4.5
–43.0	–127.0	–230.5	–47.4	–181.0	–342.6	–419.4	–201.6	–338.9	–780.6	–412.7
. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	–333.1	–351.3	–203.6
. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	–331.2	–385.3	–239.2
. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	–35.5	–166.7	–217.7
. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	11.6	16.1	16.9
. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	–688.2	–887.2	–643.7
–6.9	–13.3	–16.7	–16.6	–26.6	–31.4	–38.0	–23.0	–30.6	–31.6	–24.6
1.5	–1.6	11.0	24.0	14.7	6.9	9.6	–11.8	–26.1	–37.4	–42.3
29.2	–19.6	–7.2	–36.8	–16.2	–39.1	–105.9	–87.4	–78.1	–90.7	–50.2
–46.3	–58.8	–62.5	–68.1	–115.7	–107.8	–72.1	–38.2	–95.8	–124.3	–139.0
–22.5	–93.3	–75.4	–97.5	–143.8	–171.4	–206.4	–160.4	–230.6	–284.0	–256.1

cross-border transactions, a belief in its continued strength and stability, and in some regions a motive to build up foreign exchange reserves. At the end of 2001, monetary authorities held dollar reserves of $1.5 trillion, 75 percent of reserves in all currencies (Bank for International Settlements, 2002).

Over the past decade, strong foreign appetite for U.S. financial assets has been reflected in a rise in U.S. financial asset prices and the dollar that may have both validated and enhanced the view that U.S. markets offered the best risk-adjusted returns globally. Since 1991, and even taking into account its recent decline, the dollar has appreciated almost 30 percent in nominal trade-weighted terms and by more than 20 percent in real effective terms. From the beginning of 1991 to its peak in autumn 2000, the MSCI U.S. equity total return index rose 490 percent, and even taking into account the correction since autumn 2000, the index still rose by 270 percent. Since 1991, the high-yield U.S. corporate bonds have yielded an average of 11 percent a year. In light of these facts, it is hardly surpris-

Table 2.3. Returns in Global Markets
(End-December 1991 through end-May 2002; total market returns in U.S. dollars; in percent)

	United States	Japan	EMU[1]
Stock market	217	–22	157
Sharpe ratio	0.26	0.01	0.20
Bond market	107	76	57
Sharpe ratio	0.42	0.15	0.15

Source: Primark Datastream.
[1]The bond market data refer to the German market.

ing that formal tests correlate the dollar's rise over the past decade with inflows to U.S. securities markets (Fender and Galati, 2001, and Brooks and others, 2001).

Heavy foreign ownership of U.S. financial assets means that a further deterioration in U.S. markets could impose mark-to-market losses on foreign financial institutions and cause them either to reduce their purchases of riskier securities or cut back riskier positions. As of the end of 2001, foreign investors held about $1.7 trillion in U.S. equities, $1.2 trillion in corporate debt, and another $1.2 trillion in treasury debt, representing 12 percent, 24 percent, and 42 percent of the outstanding amounts, respectively (Table 2.4). Even a 10 percent reduction in these positions—which would be as large as 2001 inflows to U.S. equities and half of 2001 inflows to U.S. bond markets—could affect conditions in U.S. financial markets. A pullback by foreign investors in equity markets could particularly adversely affect liquidity in U.S. equity markets, where they account for about 20 percent of stock market transactions (Griever, Lee, and Warnock, 2001).

Sources of Risks and Financial Stability Implications

As noted, the recent decline in the dollar has coincided with both a slowing in foreign inflows and a deterioration in U.S. financial market conditions. This suggests a risk that the motives for foreign investment in the U.S. highlighted above—which hinge on a virtuous cycle of favorable risk-adjusted returns in U.S. financial markets, a strong and stable dollar, and robust U.S. productivity and economic growth—could weaken and further affect inflows and U.S. financial market conditions. In this light, the recent deterioration in U.S. asset markets and uncertainties surrounding the economic outlook and U.S. productivity raise questions about whether the United States will continue to attract and distribute substantial shares of international capital.

So far—and notwithstanding the recent losses in investor trust and confidence—although foreign demand for U.S. securities has declined, four factors have supported it at a reasonably high level. First, the market is still expecting a U.S. economic recovery, albeit at a slower pace. Second, it is unclear that activity will improve more quickly or strongly in the other major economies. Notwithstanding uncertainties about medium-term imbalances, market participants widely consider U.S. fiscal and monetary policies to be more aggressive in countering recessionary forces than those in the euro area, and more potent than those in Japan. Third, U.S. financial markets are still among the largest, most liquid, and diverse in the world, and it is unclear whether other markets could accommodate the sizable flows that the U.S. markets have absorbed without outsized price adjustments. In sum, while risk-adjusted expected returns on U.S. assets likely have declined, they are still seemingly perceived as superior to returns on the major alternatives. As a result, positioning by international investors has continued to supply large amounts of net foreign financing to the United States. Fourth, the aforementioned structural factors have supported strong gross flows into U.S. financial markets in the past, and will no doubt lend such support in the future, notwithstanding conjunctural factors that could affect net flows. In addition to these factors, in a volatile market environment, flight to quality could support gross inflows to the U.S. treasury market.

Against this background, and given the historical experience with U.S. capital account adjustments (explained later in this chapter), particularly in the 1980s, there would seem to be a

Table 2.4. Market Value of Foreign Holdings of U.S. Long-Term Securities, by Type of Security
(In billions of U.S. dollars; amounts outstanding, end of period, not seasonally adjusted)

	1974	1984	1994	1995	1996	1997	1998	1999	2000	2001
Corporate equity										
Total outstanding	627.8	1,763.2	5,690.7	7,698.0	9,278.7	12,093.0	14,101.1	17,554.6	15,779.4	13,684.3
Foreign owned	23.9	107.0	397.7	527.6	656.8	919.5	1,175.1	1,537.8	1,748.3	1,697.7
Percent foreign owned	3.8	6.1	7.0	6.9	7.1	7.6	8.3	8.8	11.1	12.4
Corporate debt										
Total outstanding	274.5	671.7	2,261.7	2,548.7	2,843.1	3,179.5	3,708.2	4,156.4	4,545.4	5,189.9
Foreign owned	4.0	90.5	311.4	369.5	453.2	537.8	660.0	820.8	1,003.9	1,234.6
Percent foreign owned	1.5	13.5	13.8	14.5	15.9	16.9	17.8	19.7	22.1	23.8
Marketable U.S. Treasury securities[1]										
Total outstanding	282.9	1,247.4	3,126.0	3,307.0	3,459.7	3,456.8	3,355.4	3,281.0	2,966.9	2,983.0
Foreign owned	60.1	200.3	632.6	841.3	1,093.3	1,252.0	1,318.8	1,238.9	1,222.0	1,248.6
Percent foreign owned	21.2	16.1	20.2	25.4	31.6	36.2	39.3	37.8	41.2	41.9
U.S. government corporation and federally sponsored agency securities										
Total outstanding	106.1	529.4	2,199.4	2,405.0	2,634.8	2,847.6	3,320.5	3,912.2	4,344.8	4,970.9
Foreign owned	2.8	10.1	125.1	154.8	196.3	246.5	303.4	394.6	550.3	715.5
Percent foreign owned	2.6	1.9	5.7	6.4	7.5	8.7	9.1	10.1	12.7	14.4
Combined market										
Total outstanding	1,291.3	4,211.7	13,277.8	15,958.7	18,216.3	21,576.9	24,485.2	28,904.2	27,636.5	26,828.1
Foreign owned	90.8	407.9	1,466.8	1,893.2	2,399.6	2,955.8	3,457.3	3,992.1	4,524.5	4,896.4
Percent foreign owned	7.0	9.7	11.0	11.9	13.2	13.7	14.1	13.8	16.4	18.3

Sources: Federal Reserve Statistical Release, Z.1 *Flow of Funds,* Table L, June 6, 2002; and Bureau of Public Debt, *Monthly Statement of the Public Debt of the United States.*

[1]Amounts outstanding of marketable Treasury securities are from the Bureau of Public Debt, *Monthly Statement of the Public Debt of the United States.* The data on foreign holdings are from the Z.1, *Flow of Funds.*

small likelihood of a sudden and marked shift in investor sentiment against U.S. assets, an abrupt reversal of flows into U.S. financial markets, precipitous declines in the international value of the dollar and U.S. securities prices, and accompanying rises in U.S. dollar interest rates. These risks nonetheless warrant consideration, for three reasons.

First, financial market shocks are more easily transmitted between global financial centers and institutions than in years past, reflecting portfolio rebalancing by large complex financial institutions that hold positions and intermediate flows in a variety of markets and countries (the "common ownership" channel of transmission). These large institutions have concentrated and rapidly changing financial exposures (direct and through counterparties) to interest rates and other financial asset prices, in domestic and global interbank, foreign exchange, and securities markets, including the OTC derivatives markets. Shocks to one part of this portfolio can reduce the capital cushion allocated to it, and efforts to rebuild that cushion can transmit the shock to other markets as institutions rebalance their exposures and/or reduce risk through widespread cutbacks in market-making and positions.

Second, because a greater number of developing countries have become integrated into the global economy and financial system, emerging market economies (in particular) have become more vulnerable to shocks that are transmitted through patterns of capital flows and international financial markets—much more so than are the mature market economies. In particular, changes in conditions in U.S. dollar markets have increasingly affected international financing conditions for emerging markets. For example, periods of rising U.S. dollar interest rates and more volatile financial asset prices have substantially adversely affected the cost and availability of external financing for Latin American economies, largely because of the indirect effects of lower perceived creditworthiness and higher investor risk aversion. Asian emerging markets

have been affected through both the higher cost of external finance and the effects on domestic financial markets, which tend to be linked with and reflect disruptions in U.S. dollar markets. These relationships are reflected in the aforementioned correlation between U.S. and mature financial market conditions and financing conditions for emerging market countries.

Third, and as noted, foreign investors have an increasing and significant presence in U.S. financial markets and effect on pricing, liquidity, and flows in those markets. Thus, an adjustment in foreign investors' portfolios could have a more marked effect on U.S. financial market conditions than past adjustments have had. Moreover, foreign investors can have significant exposures to price fluctuations in U.S. financial markets; it has been estimated that foreign investors have sustained mark-to-market losses of $400 to $600 billion on equity and FDI exposures alone, not including credit and mark-to-market losses on corporate bond exposures (Bridgewater Daily Observations, 2002a). These losses have raised concerns about the associated wealth effects, and raise questions about whether foreign investors currently see themselves as overweight in U.S. dollar assets.[12]

In this environment, further portfolio shifts by U.S. retail investors and foreign investors (institutional and/or retail) are key sources of risk, in part because they could tip the balance of selling pressures in U.S. financial markets. Selling by domestic retail investors in U.S. markets, if it occurred, would put further downward pressure on asset prices and exacerbate the wealth effects on households and institutions from the price declines that have already taken place. Although low valuations might encourage greater buying by contrarian investors, this stabilizing influence might be partly offset if foreign demand for U.S. securities slackened further—if, for example, U.S. dollar securities came to be seen by foreign investors as no longer offering superior risk-adjusted returns compared with other markets. The resulting stagnation in foreign demand for U.S. securities could lead the dollar and U.S. asset prices to decline in value and become more volatile, posing the risk of adverse market dynamics and spillovers across international capital markets.

A key question is how rapidly these adjustments would occur. Past market corrections, by and large, have not been characterized by widespread panic selling by retail investors. As for portfolio shifts by foreign investors, experience suggests that adjustment of net capital inflows themselves would probably occur at a relatively moderate pace over a period of time. Moreover, any adjustment of net financing to the United States would likely be spread over a number of years, based on historical experience (discussed later in this chapter). Meanwhile, the structural factors that have supported the U.S. role as a "hub" for international financial activity would remain intact, lending support to gross flows into and out of the U.S. financial system.

Abrupt adjustments could also substantially adversely affect emerging markets. The investor base for emerging market bonds is presently dominated by crossover (as opposed to dedicated) investors, many of whom view high-yield and emerging market bonds as asset classes that have similar levels of risk. Therefore, periods of heightened risk aversion following disturbances in the high-yield market can lead crossover investors to sell both high-yield and emerging market bonds. That said, the linkages between the two markets are not always tight, and in some instances reflect macroeconomic factors (Arora and Cerisola, 2000). Nevertheless, the sharp sell-off of high-yield bonds in October 2000 demonstrates that difficulties in high-yield markets can be accompanied by adverse effects on financing conditions for emerging markets.

An examination of episodes when the dollar depreciated significantly suggests that sharp, and

[12]Nevertheless, Mann (forthcoming) questions whether the share of U.S. assets in global portfolios predicts future adjustments. Similarly, Eichengreen and Mathieson (2000) suggest that the currency composition of central bank reserve portfolios is not apt to change abruptly.

even prolonged, moves in the dollar have not by themselves led to marked and sustained adverse price dynamics in the major equity markets or financial services stock prices. Nevertheless, the consequences of dollar adjustments have been much more severe for some emerging market economies. In addition, as suggested above, the changing structure of global financial intermediation limits history's usefulness as a guide to the risks.

Neither is there much precedent for the current degree of U.S. dependence on foreign capital, and the associated potential "stress test" of a reversal. During 1981–87, the capital account moved from near balance to a surplus of 3.4 percent of GDP; the surplus was then reduced (more rapidly at first) through 1991, when it balanced. In the event, the U.S. dollar appreciated in nominal effective terms through 1985, depreciated during 1986–1987 (following the Plaza Accord on official intervention), and has appreciated steadily since 1987. There is, therefore, no clear evidence that a reversal in net capital inflows precipitated a sharp depreciation in the dollar.[13]

In sum, the present level of capital flows to the United States is unprecedented, raising the question about potential effects on financial stability if and when an adjustment occurs. The limited historical evidence suggests the relatively benign conclusion that a manageable adjustment might occur through a combination of financial market quantities (i.e., flows) and prices, and would not involve serious threats to systemic financial stability. Such an outcome would most likely involve corrections in U.S. dollar asset markets, possibly a depreciating dollar and rising U.S. interest rates, and diminished optimism about U.S. corporate profitability. If abrupt adjustments in financial markets occurred, extreme market dynamics could cause difficulties for individual global financial institutions and for a broad range of emerging market economies.

* * *

As noted in the first part of this chapter, since the publication of the June 2002 *Global Financial Stability Report*, there was a general further erosion of investor confidence and increased risk aversion, which seems to have subsided somewhat in recent weeks. As a result of this risk aversion, global financial markets, and the major equity markets in particular, experienced dramatic adjustments in both the level and volatility of asset prices and in trading volumes. In recent weeks equity valuations have rebounded somewhat, and by mid-August, equity valuations were by-and-large closer to historical averages in terms of traditional measures such as P/E ratios and ratios of market capitalizations to GDP. While credit market conditions remained tight for higher-risk borrowers and could get worse before they improve, a more economy-threatening withdrawal from risk taking and lending had been avoided. Moreover, although the financial institutions that intermediate the bulk of international capital flows—commercial and investment banks, institutional investors, and insurance and reinsurance companies—were clearly adversely affected by market conditions, many (though not all) of them were well capitalized and liquid going into this recent period of adjustment, and have remained resilient.

Nevertheless considerable downside risks remain in the immediate future:

- the possibility of further equity price declines, and in the worst case scenario panic selling by both institutional and retail investors;
- a further weakening of financial institutions' balance sheets and profit outlooks, in particular among banks and insurers in Europe; and
- an accelerating slowdown in net capital inflows to the United States and the associated potential for substantial exchange rate movements.

There are also risks emanating from emerging market economies and financial systems that could affect investor sentiment and lead to a fur-

[13]On the other hand, the U.S. stock market did fall sharply in 1987, and did not recover lost ground for nearly two years afterward. The 1987 stock market crash resulted in a number of official reports on the source of the crash, none of which tied the crash to the current account deficit or to the behavior of foreign investors.

ther erosion of confidence and greater risk aversion, as discussed in the next chapter.

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CHAPTER III EMERGING MARKET DEVELOPMENTS AND FINANCING

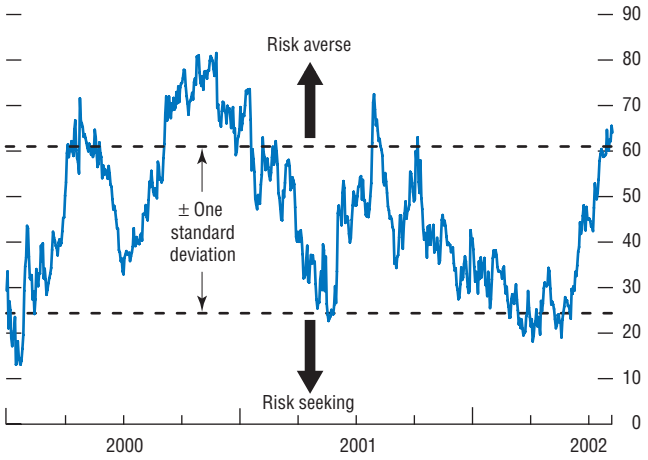
The favorable climate for emerging market financing that characterized the first quarter of 2002 deteriorated in the second, as investors reassessed the pace and durability of the global economic recovery, the valuation of U.S. and European equities, as well as the scope for policy continuity in core emerging markets.

Investor concerns were especially focused on, but not limited to, countries whose economic reform agenda appeared to be at risk owing to domestic political uncertainty. A number of Latin American countries and Turkey were at the focal point of these concerns. While throughout much of the quarter, investors were content to rotate their exposure to countries perceived to pose less risk, signs of contagion emerged, especially toward the end of the quarter, as the correlation of emerging market bond movements with developments in Brazil increased, but remained well below the peaks seen in previous crises. In addition, contagion from Argentina was felt by neighboring countries through banking and real sector channels.

Investor confidence was eroded by a series of serious accounting scandals in mature markets whose breadth remains subject to conjecture. The resultant rise in risk aversion contributed to a substantial decline in bond and equity prices in emerging markets toward the end of the quarter, and increased volatility (see Figure 3.1). Nevertheless, the performance of emerging market bonds and equities through June was superior relative to their mature market counterparts.

The relatively open market access that prevailed in the first quarter was also partially reversed in the second. Primary market access was much reduced to subinvestment-grade issuers in Latin America, without credit enhancements. Issuers with solid credit ratings and those in Asia, Eastern Europe, and the Middle East re-

Figure 3.1. Liquidity and Credit Premia Index



Source: J.P. Morgan Chase.

Box. 3.1. The Scope for Emerging Market Contagion

As in the capital account crises of the 1990s, adverse debt dynamics, above all, have become a major issue for both Brazil and, to a lesser extent, Turkey. After a brief episode of contagion from Brazil in mid-June, investors are assessing the vulnerability of emerging markets. Three potential channels of contagion are considered: a retrenchment of cross-border lending; trade flows; and the financial sector. While these channels of contagion pose potential risks to the asset class as a whole, there are indications that portfolio investors have adopted an increasingly discriminatory stance toward individual markets, largely based on their policy regimes and track records.

In recent years, banks have built increasingly global operations, partly through direct equity investments in emerging markets. As business platforms have been broadened, risks have been diversified. The assessment of risks, however, tends to be conducted in broad terms. In times of heightened risk aversion, this puts emerging markets at the forefront and banks may choose to retrench from emerging markets as a whole, while not always taking into account the particular circumstances of individual markets.

Such decisions tend to be taken on the basis of banks' total exposure, not discriminating whether the exposure was built up via their local operations or through major financial centers. The analysis that follows captures this notion by using BIS data, which consolidates all on-balance sheet claims of BIS-registered banks on private and public entities, including those claims held by local branches and subsidiaries. These data, therefore, may also differ significantly from international debt statistics.

Retrenchment of Cross-Border Lending

Bank exposure to Brazil is large—$142 billion—and relatively concentrated. While U.S. banks provided $34 billion in short- and long-term financing, Europe's four largest lenders (aggregated by nationality) provided $68 billion in financing to Brazil, including $26 billion from Spain (see the Table).

There is a risk of roll-over problems of these loans in Brazil and emerging markets in general, including for "safe havens." A potential retrenchment of U.S. lending could adversely affect Mexico and Taiwan Province of China, both hav-

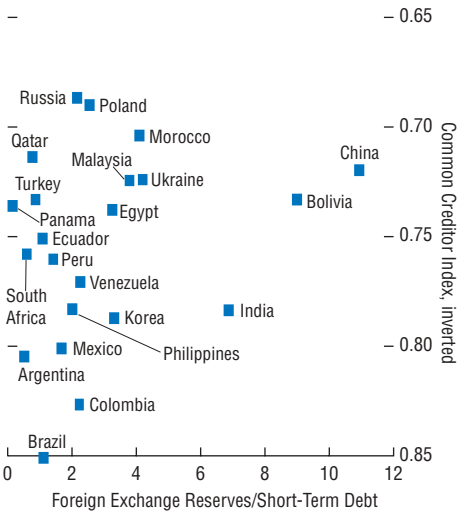
Selected Emerging Markets: BIS Lending and Common Creditor Index[1]

	Common Creditor Index	BIS Loans end-2001 US$ Billion	Share of Total in Percent						
				Four Largest European Lenders					
			U.S.	Total	Spain	U.K.	Netherlands	Germany	Other
Brazil		142.4	24.0	47.6	18.0	11.1	10.7	7.7	28.4
Colombia	0.83	16.4	25.0	52.1	28.6	7.9	5.2	10.4	22.9
Argentina	0.81	73.9	29.1	45.9	24.4	8.6	3.7	9.1	25.0
Mexico	0.80	215.1	35.9	47.9	39.5	2.7	2.1	3.7	16.2
Taiwan Province of China	0.80	32.2	36.6	33.9	0.0	16.7	12.6	4.5	29.6
Korea	0.79	73.2	22.4	22.8	0.2	9.5	3.9	9.2	54.8
Philippines	0.79	22.4	21.7	33.6	0.6	11.5	4.9	16.6	44.8
Venezuela	0.77	21.6	15.0	64.9	44.7	7.1	3.5	9.5	20.1
Chile	0.77	43.9	16.9	64.7	49.3	3.9	3.8	7.7	18.4
South Africa	0.76	22.3	14.1	38.3	0.2	8.4	6.2	23.6	47.6
Indonesia	0.76	37.4	9.0	41.4	0.2	10.0	9.3	21.9	49.5
Thailand	0.75	42.4	10.3	29.6	0.0	9.8	10.5	9.3	60.1
Bulgaria	0.74	1.5	11.4	51.2	0.6	2.3	17.7	30.7	37.4
Turkey	0.74	39.7	11.3	43.5	0.9	7.8	7.0	27.8	45.2
Russia	0.69	41.5	6.0	61.9	0.6	1.5	6.8	53.0	32.1

Sources: IMF, *International Financial Statistics;* and Bank for International Settlements.

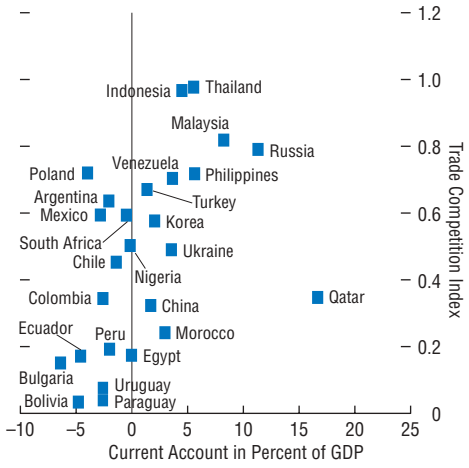
[1]The common creditor index average is 0.49 across a group of 165 developing countries with outliers, such as Sierra Leone (0.20) and Tonga (0.06).

Common Creditor Index Versus Foreign Exchange Reserves/Short-Term Debt, 2001



Sources: Bank for International Settlements; International Monetary Fund, *World Economic Outlook* database; and IMF staff estimates.

Trade Competition Index Versus Current Account, 2001



Sources: International Monetary Fund, *World Economic Outlook* database; and IMF staff estimates.

ing raised more than one-third of their external bank financing in the United States. In addition, Mexico raised 40 percent of its bank financing from Spain, highlighting the risk of a potential reduction of resources from this source. A broad-based retrenchment by European lenders would heavily affect Latin America as well as emerging Europe. More than half of bank financing was provided by Europe's four largest lenders to Russia, Bulgaria, Colombia, Chile, and Venezuela, with Spain having provided the bulk of financing to Chile (49 percent) and Venezuela (45 percent).

Private and public borrowers in countries with borrowing patterns similar to those of Brazil could also suffer from a potential retrenchment of bank lending. The common creditor index in the Table measures the similarity of countries' borrowing patterns relative to those of Brazil. The index ranges between 0 and 1, with a higher index value indicating patterns more akin to those of Brazil.

The common creditor index points to risks across Asia, including India, the Philippines, Korea, and Indonesia (see the first Figure). Nevertheless, India's and Korea's high gross official foreign exchange reserve coverage of short-term external debt suggests that risks are limited. In Latin America, Colombia's borrowing patterns are close to those of Brazil, while the FX reserve coverage of short-term debt is relatively low in Ecuador. Similarly, Nigeria and South Africa appear vulnerable on these grounds, although the depreciation of the rand has boosted competitiveness.

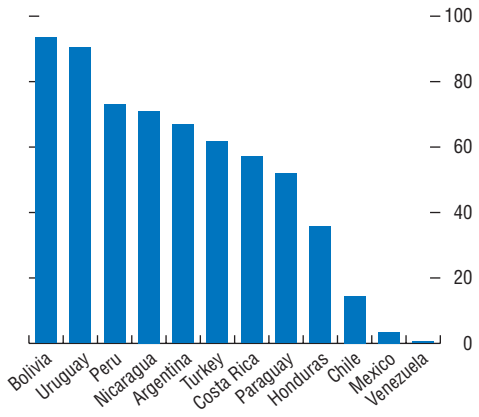
Redirection of Trade Flows

Sharp exchange rate movements and a subsequent redirection of international trade flows could also act as a channel of contagion, although they have proven to be of lesser importance in the capital account crisis of the 1990s. We apply a widely used trade competition index, which—analogous to the common creditor index—measures the similarity of countries' trading patterns with those of

Box. 3.1 *(concluded)*

Dollarization in Selected Emerging Markets, End-2001

(Foreign exchange deposits in percent of total deposits)



Brazil. The index ranges between 0 and 1, with a high index value indicating a high degree of overlap of a country's export markets with those of Brazil. The index, however, does not take into account differences in the product composition of exports and a high index value, therefore, is a necessary but not sufficient condition for a high degree of competition in third markets (see the second Figure).

Many of the emerging markets continue to enjoy comfortable current account positions. These provide a cushion and the risks of trade-related contagion are significantly lower than the risks of financial market contagion. Nevertheless, the external positions of a number of countries appear vulnerable. These include Indonesia, Thailand, and Malaysia, where exporters may be faced with competition from Brazil in third markets, to the extent that they compete along product lines. In emerging Europe, the Middle East and Africa regions, Poland, South Africa, and Turkey could also experience additional competitive pressure with potentially adverse consequences for their respective currencies. In Latin America, Mexico may face heightened competition as well, albeit to a lesser extent than its peers mentioned above.

Dollarization and Systemic Risks

Dollarization of financial sector balance sheets poses systemic risks and is a potential further channel of contagion. Non-residents' withdrawals of foreign exchange deposits triggered bank runs in Uruguay and Paraguay in the aftermath of the Argentine crisis. As commercial banks' liquid foreign exchange assets were inadequate to cover the demand for deposits, central banks provided lender-of-last-resort financing, thereby straining their official foreign exchange reserves. Besides the risk of a sudden outflow of deposits, banks are exposed to credit risks when extending loans denominated in foreign exchange to unhedged borrowers. Credit risk thus can cause or aggravate mismatches of assets and liabilities in foreign exchange.

Dollarization is prevalent in Latin America and is a policy issue for selected countries, including Turkey. In Latin America, regulation has prevented dollarization in Brazil and Mexico, and most economies exhibiting a high degree of dollarization are relatively small. This suggests that the systemic risks associated with dollarization more likely manifest themselves as a result of a crisis rather than as a potential cause, not unlike the experience of Uruguay and Paraguay.

tained market access, however. Given that sovereign borrowers actively prefinanced their borrowing programs, Latin American corporate borrowers are the most vulnerable to prolonged market closure. Indeed, a number of Latin American corporate issuers have already encountered difficulties raising new funds.

Emerging markets remain vulnerable to a further decline in market sentiment.

- Indicators of risk aversion and contagion have increased, but remain well below historical peaks. They could rise further if sentiment deteriorates. Continued weakness and volatility in mature equity markets, especially if accom-

panied by a further downward assessment of global growth prospects, would trigger a retrenchment from emerging markets.
- There is a risk that bank lending may retrench from Brazil and emerging markets in general (see Box 3.1). The high concentration of loans within a relatively small number of institutions points to vulnerabilities also in "safe haven" countries.
- Within emerging markets, developments in Brazil are critical. A further deterioration in sentiment toward Brazil would likely be felt more widely, especially as investor concerns over policy continuity and debt sustainability span a number of emerging market countries. These concerns, to a lesser extent, also apply to Turkey, although progress has been made toward the resolution of political uncertainty.

The outlook for emerging markets remains overshadowed by a deterioration in investor sentiment that has weighed on mature and emerging markets alike. While investor confidence has been shaken, a wholesale exit from emerging markets has thus far been averted, and there are indications of continued investor and creditor discrimination, as investors have opted to lower the risk-reward profile of their portfolios by raising their relative exposure to investment-grade credits. In addition, technical conditions in emerging markets have improved, as investors reduced their exposures and increased cash positions. However, these mitigating technical factors are by themselves insufficient to turn investor sentiment.

Capital flows to the emerging markets are likely to remain subdued until global risk aversion reverts and uncertainties over policy continuity in key emerging markets subside. Developments of the past quarter underscore the importance of consistent implementation of adjustment measures and prudent debt management policies as a means of mitigating market turbulence. Such policy continuity is especially critical for countries dependent on uninterrupted access to international capital markets. More generally, recent developments point to the importance of avoiding dependence by either the public or private sector on external capital inflows subject to short-term swings, and of using periods of favorable financing wisely.

Emerging Market Financing Overview

Reflecting the deterioration in investor sentiment, gross capital market flows to emerging markets slowed to $34.5 billion in the second quarter, about two-thirds the level for the comparable period of last year and the year before. New bond issuance fell from the previous quarter, as did new syndicated loans, as banks continued to retrench from emerging markets. Equity flows, however, remained little changed, reflecting in part continued appetite for new Asian issues (see Table 3.1 and Figure 3.2). Latin American issuance fell most sharply, with non-investment grade issuers in the region suffering from especially difficult market access. Reflecting these developments, cumulative issuance through the end of June has fallen well short of recent years (see Figure 3.3).

Emerging Bond Markets

The favorable investment sentiment of the first quarter succumbed in the second to events in Brazil and to a less supportive global environment. Emerging market average trading volumes fell, and trading, especially in periods of sharp market declines, was concentrated on a few issues. As a result, the strong performance of emerging market bonds in the first quarter (of 6.6 percent), was largely offset in the second, as the EMBI+ index fell 5.4 percent, closing virtually flat for the first half of 2002, a performance superior to the NASDAQ (down 26 percent through June) and better than that of the Merrill Lynch High Yield, which lost 4.3 percent (see Table 3.2 and Figure 3.4). The correlation of the returns on emerging market bonds with their mature market high-yield counterparts spiked at the end of June.

At the same time, contagion began to emanate from Brazil, therefore not allowing for definite conclusions as to the causality of the sell-

Table 3.1. Emerging Market Financing Overview

				2000				2001				2002					
	1999	2000	2001	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Apr.	May	Jun.	Year to date[1]
								(in billions of U.S. dollars)									
Issuance	**163.6**	**216.4**	**162.3**	**60.4**	**55.4**	**50.3**	**50.3**	**42.2**	**50.5**	**29.2**	**40.4**	**37.0**	**34.5**	**12.3**	**11.7**	**10.5**	**76.2**
Bonds	82.4	80.5	89.0	33.8	16.1	21.1	9.4	26.8	28.8	11.7	21.7	22.0	20.8	8.8	6.5	5.5	44.2
Equities	23.2	41.8	11.2	8.9	11.6	8.8	12.4	2.3	5.3	1.0	2.6	4.1	4.3	0.4	1.4	2.5	8.9
Loans	58.0	94.2	62.0	17.6	27.7	20.4	28.5	13.1	16.4	16.4	16.1	10.9	9.4	3.1	3.8	2.5	23.2
Issuance by Region	**163.6**	**216.4**	**162.3**	**60.4**	**55.4**	**50.3**	**50.3**	**42.2**	**50.5**	**29.2**	**40.4**	**37.0**	**34.5**	**12.3**	**11.7**	**10.5**	**76.2**
Asia	56.0	85.9	67.4	19.5	26.1	18.3	22.0	19.6	22.8	7.5	17.6	13.3	15.0	2.8	8.1	4.2	30.4
Western Hemisphere	61.3	69.1	54.0	23.7	13.9	18.8	12.7	15.2	15.4	11.4	12.1	11.4	8.0	4.0	0.3	3.7	19.4
Europe, Middle East, Africa	46.3	61.4	40.8	17.1	15.4	13.2	15.6	7.4	12.4	10.4	10.7	12.3	11.4	5.5	3.3	2.7	26.4
Secondary Markets																	
Bonds:																	
EMBI+ (spread in basis points)[2]	703	756	731	674	712	677	756	784	766	1,005	731	598	799	619	650	799	981
Merrill Lynch High Yield (spread in basis points)	453	871	734	584	615	664	871	757	736	915	734	623	809	600	643	809	904
Salomon Broad Inv Grade (spread in basis points)	55	89	78	81	87	83	95	89	80	77	78	69	73	73	70	73	81
U.S. 10 yr. Treasury Yield (yield in %)	6.45	5.12	5.07	6.03	6.03	5.80	5.12	4.93	4.93	4.60	5.07	5.40	4.80	5.09	5.05	4.80	4.22
								(in percent)									
Equity:																	
DOW	25.2	–6.2	–7.1	–5.0	–4.3	1.9	1.3	–8.4	6.3	–17.5	15.7	3.8	–11.2	1.6	–0.2	–6.9	–13.3
NASDAQ	85.6	–39.3	–21.1	12.4	–13.3	–7.4	–32.7	–25.5	17.4	–30.5	29.9	–5.4	–20.7	–8.9	–4.3	–9.4	–33.0
MSCI Emerging Market Free	63.7	–31.8	–4.9	2.0	–10.8	–13.4	–13.5	–6.2	3.1	–23.4	28.4	10.7	–9.0	10.5	–1.9	–7.7	–8.0
Asia	67.6	–42.5	4.2	4.0	–14.0	–22.3	–17.3	–0.1	–1.6	–22.1	36.1	14.9	–6.3	17.5	–1.9	–4.6	0.0
Latin America	55.5	–18.4	–4.3	3.2	–8.1	–6.0	–8.5	–3.5	7.1	–24.7	23.0	7.1	–22.0	3.6	–8.1	–13.6	–25.5
Europe/Middle East	76.7	–23.4	–17.7	3.0	–9.7	–3.9	–14.3	–22.0	4.5	–26.1	36.8	0.2	–11.0	2.6	–0.5	–9.6	–14.7

Sources: Bloomberg L.P.; Capital Data Ltd.; Merrill Lynch: Salomon Smith Barney; and IMF staff estimates.
[1]Issuance data are as of July 16, 2002 close-of-business London and Secondary markets data are as of August 12, 2002 cob New York.
[2]On April 14, 2000 the EMBI+ was adjusted for the London Club agreement for Russia. This resulted in a one-off (131 basis points) decline in average measured spreads.

off. Events toward the end of the quarter marked a signficant shift, as the rotation by investors to less risky investments gave way on June 19 to a more generalized sell-off triggered by heightened concerns over Brazil, although high-grade credits have staged a recovery since then (see Box 3.2).

Against the backdrop of rising risk aversion, net inflows into emerging market mutual funds decelerated in the second quarter (to $28 million, from $168 million in the first quarter). There, was, however, a net outflow of $30 million in June. This deceleration is consistent with developments in other assets with similar risk, including, for example, U.S. high-yield corporate bonds, which also saw a slowdown in mutual fund inflows during the quarter. In July, however, initial inflows to emerging market bond mutual funds were followed by substantial outflows in late July and early August.

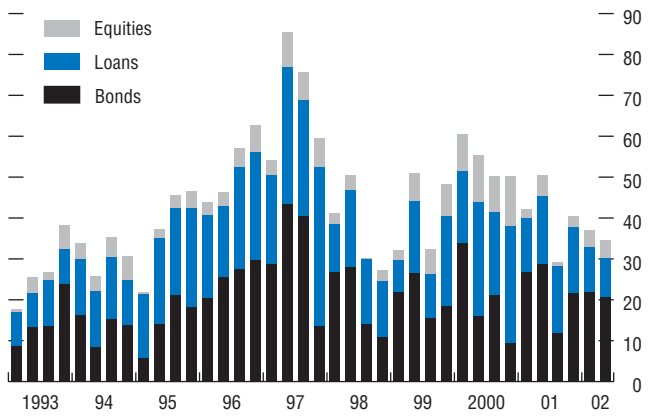
Latin American bonds—constituting about three-fifths of the EMBI+ index—bore the brunt of the sell-off (declining by 10.6 percent in the second quarter), while other regions enjoyed modest positive returns, as investors were prepared to rotate their exposure from Latin America to other regions throughout much of the quarter. A notable beneficiary of this rotation was Russia, whose bonds performed relatively well in the second quarter, reflecting a deepening of the local investor base and the adoption of a sizable overweight position by ex-

Table 3.2. EMBI+ Dollar Returns, 2002
(In percent)

	Year through June 19	June 19 to August 12	Second Quarter	First Half of 2002
EMBI+	2.6	–5.1	–5.4	0.8
EMBI+ adj. Argentina	3.0	–5.1	–5.1	1.4
Latin	–2.9	–8.8	–10.6	–5.4
Non-Latin	11.5	–0.1	2.7	10.8
Argentina	–12.9	–4.4	–18.0	–22.2
Brazil	–14.3	–20.2	–24.5	–18.3
Bulgaria	3.6	–0.3	1.5	2.7
Colombia	2.8	–10.3	1.3	2.1
Ecuador	3.4	–18.7	–6.5	7.1
Korea	6.2	—	4.6	5.9
Malaysia	—	4.1	4.8	—
Mexico	5.3	–0.5	1.4	4.4
Morocco	3.7	–2.1	–2.9	1.8
Nigeria	5.9	–10.4	–4.1	3.4
Panama	1.7	–3.7	–4.6	–0.9
Peru	2.5	–11.9	–8.5	–1.6
Philippines	10.1	0.3	2.3	9.3
Poland	5.0	1.1	2.5	4.7
Qatar	9.2	2.2	6.7	9.1
Russia	17.7	–0.5	5.3	18.0
Turkey	1.5	–3.4	–10.3	–3.3
Ukraine	13.6	0.5	2.4	12.8
Venezuela	9.9	0.7	–2.9	8.0

Source: J.P. Morgan Chase.

Figure 3.2. Emerging Market Financing
(In billions of U.S. dollars)

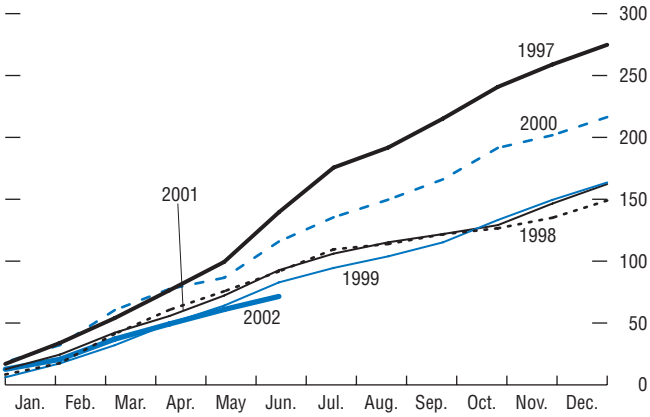


Source: Capital Data.

ternal investors. This position was reduced somewhat as investors sought liquidity in the wake of the sharp Brazil-induced sell-off in the second half of June. Within Latin America, Mexico continued to benefit from its high-grade status, evidencing a degree of continued investor discrimination even in a region that is at the focal point of investor concerns. Nevertheless, since the end of June, Mexico's correlation with Brazil has increased sharply, and its debt has underperformed other investment grade credits.

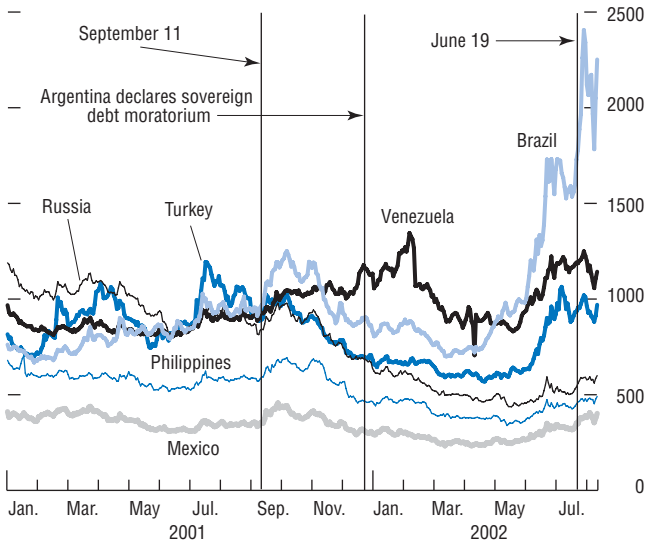
Developments in Brazil—the main driver of investor sentiment during the second quarter—reflected investor uncertainty about policy continuity after the elections and, as these fed through to a weaker *real* and a shortening of maturities for domestic debt, heightened concern about debt dynamics. With almost one-third of the domestic debt linked to the exchange rate, Brazil's debt-to-GDP ratio risks rising significantly, unless the *real* retraces. These concerns contrast sharply with the generally favorable market sentiment toward Brazil that had pre-

Figure 3.3. Cumulative Gross Annual Issuance of Bonds, Loans, and Equity
(In billions of U.S. dollars)



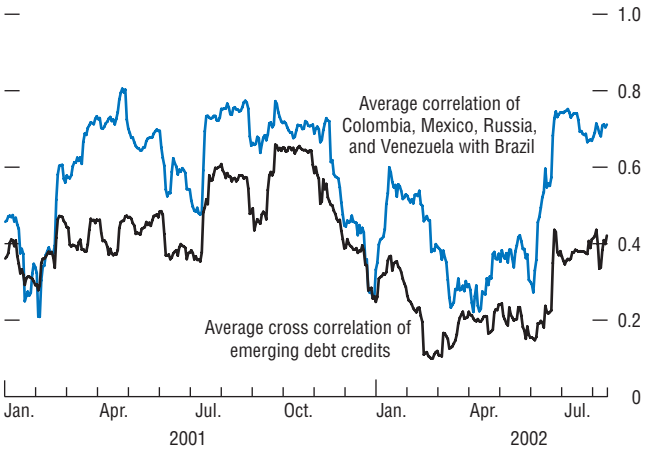
Source: Capital Data.

Figure 3.4. Emerging Market Spreads
(In basis points)



Source: J.P. Morgan Chase.

Figure 3.5. Average Correlation of Emerging Debt Markets
(30-day rolling correlations)



Sources: IMF staff estimates; and J.P. Morgan Chase.

vailed in the beginning of the year, and that resulted in substantial overweight positions by a wide range of foreign investors—positions that amplified price movements when sentiment subsequently soured. Local investors, crossover investors, hedge funds, and proprietary trading desks were reportedly the first to reduce their exposures.[1] Dedicated investors reacted more slowly, and reduced their exposure to slightly underweight during the quarter. There are indications that investment banks accumulated Brazilian paper in their inventories to satisfy client sell orders and became increasingly less accommodating as the quarter progressed in the face of these rising inventories and reduced risk limits. To address the problem of rising inventories, at least one bank has issued a collateralized debt obligation using Latin American bonds repackaged with credit enhancements with a view to broadening the investor base.

Reflecting the importance of Brazil—which represents almost one-fifth of the EMBI+ index—to market sentiment, signs of contagion increased, especially toward the end of the quarter (see Figure 3.5). The average cross-correlation of individual country returns in the EMBI+ rose to 0.4 toward quarter-end, still well below other high contagion episodes, such as the Russian default (0.8), the Brazilian devaluation (0.6), or post-September 11 (0.7).

Primary Bond Issuance

Issuance from emerging market borrowers totaled $21 billion in the second quarter, similar to the $22 billion issued in the first quarter, but some $8 billion lower than issuance during the

[1]Crossover investors, hedge funds, and proprietary trading desks typically deploy funds over a range of assets in search for relative value to boost returns. The mandate of dedicated investors, in contrast, is focused on a particular asset class, and investment decisions within that class are guided by a benchmark that, in the case of emerging market bonds, assigns varying weights to the bonds of different countries. Dedicated investors generally seek to perform better than the benchmark by taking positions that overweight or underweight the components of the index, and by varying the level of cash held.

Box 3.2. Developments in Brazil and Emerging Debt Markets Since the End of June[1]

Developments in Brazil remained the overriding driver of investor sentiment during the first weeks of the third quarter. As risk aversion remained high, investor sentiment generally continued to weaken toward high yielding, subinvestment-grade credits, in particular those that were afflicted by investor perception of weakening policy resolve. Investment-grade credits, however, fared better in general, with notable gains in Korea, Mexico, Poland, and Qatar.

The EMBI+ index shed 3.4 percent since the end of June (see Table) and spreads rose to 981 basis points (bps), as investors reduced their exposure to riskier credits. Ecuador's sub-index lost 21.4 percent on worries that it would not be able to meet conditions for a new IMF program. Losses of 8.2 percent in Peru's sub-index were due to concerns over policy continuity. Concerns over the fiscal implications of deteriorating national security weighed heavily on Colombia's debt, which shed 9.6 percent of its value. Meanwhile, Turkey's sub-index recovered by 1.5 percent, following Parliament's decision to hold early elections on November 3 and passage of legislation required to move forward with accession talks with the European Union. Most importantly, Brazil's EMBI+ sub-index—representing almost one-fifth of the EMBI+ index—lost 16.3 percent since the end of June as spreads widened by 694 bps to 2,221 bps.

The sell-off in Brazil's foreign debt was paralleled by a further sharp depreciation of the *real*, which fell to an all time low of 3.6 per dollar on July 31, largely as evidence emerged that corporate and financial sector institutions began to encounter increasing difficulties rolling over foreign credit lines.

Against this background, an agreement in principle on a new 15-month Stand-By Arrangement was reached on August 7, which will be presented to the IMF's Executive Board for approval in early September. The new agreement would commit $30 billion of additional financing by the IMF, 80 percent of which would be disbursed during 2003. In addition, the net international reserve (NIR) floor stipulated under the current Stand-By Arrangement with Brazil will be reduced by $10 billion immediately upon Executive Board approval of the program. In order to ensure fiscal sustainability over the medium term, the new program envisages the maintenance of a primary surplus target of no less than 3.75 percent of GDP during 2003 to be revisited at each quarter, and the inclusion of no less than that level of primary surplus target in Brazil's budgetary guidelines law for 2004 and 2005.

While initially markets greeted the larger-than-expected package and reduction of the NIR floor with enthusiasm, investors' concerns about the scope for reform continuity soon resurfaced, in light of the commentary on the new program from some of the presidential candidates. The gains of the EMBI+ sub-index triggered by the IMF program announcement quickly dissipated, while the *real* weakened once more to 3.15 per dollar, albeit remaining above its low.

The emerging market outlook remains overshadowed by sustained risk aversion, investor concerns over global growth, as well as a potential retrenchment of cross-border bank lending, besides continued concerns over policy continuity in core emerging markets. A key risk is that apparent rollover problems encountered by Brazil may spread to other markets, while low liquidity could result in drastic price action.

EMBI+ Dollar Returns, 2002
(In percent)

	First Half of 2002	June 28 to August 12
EMBI+	0.8	–3.4
EMBI+ adj. Argentina	1.4	–3.6
Latin	–5.4	–6.3
Non-Latin	10.8	0.6
Argentina	–22.2	7.0
Brazil	–18.3	–16.3
Bulgaria	2.7	0.6
Colombia	2.1	–9.6
Ecuador	7.1	–21.4
Korea	5.9	—
Malaysia	—	4.5
Mexico	4.4	0.4
Morocco	1.8	–0.2
Nigeria	3.4	–8.3
Panama	–0.9	–1.2
Peru	–1.6	–8.2
Philippines	9.3	1.0
Poland	4.7	1.4
Qatar	9.1	2.3
Russia	18.0	–0.7
Turkey	–3.3	1.5
Ukraine	12.8	1.3
Venezuela	8.0	2.5

Source: J.P. Morgan Chase.

[1]This box reviews developments until August 12.

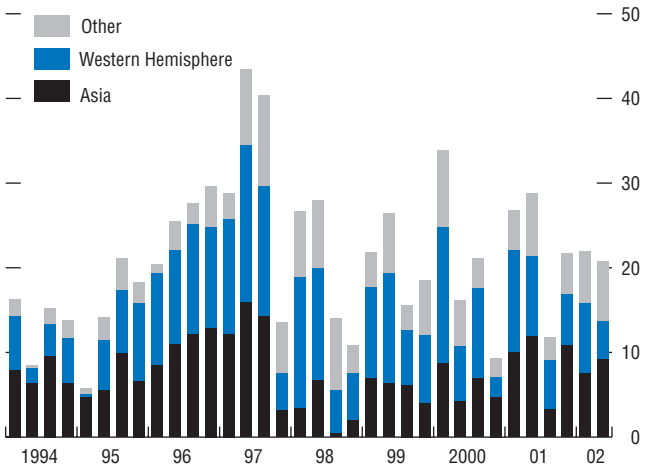
same quarter last year (see Figure 3.6). Investment-grade issuers dominated the quarter and accounted for about two-thirds of total bond issuance. Corporate bond issues (including publicly owned corporations) accounted for 62 percent of total issuance (22 percent of which was taken up by the Malaysian agency Petronas' issues in dollars and euros), and the bulk (90 percent) of new corporate issues were undertaken by Asian and Eastern European firms. Issuance in U.S. dollars continued to predominate, reaching an unusually high proportion (about 80 percent) of total issuance in the second quarter.

On the sovereign side, bond issuance was strong in early April (accounting for 71 percent of total issuance in the quarter), when market conditions were more favorable, and large coupon and amortization payments provided additional demand for bonds. However, a combination of an increase in Brazil-induced risk aversion, initially reflected in difficulties in absorbing a new Brazilian bond issue, signaled the beginning of a drop in appetite in mid-April. There was a dramatic slowdown in sovereign bond issues during the remainder of the quarter, with no issuance in May. In Latin America, the only sovereign issuer during the latter two months of the second quarter has been Colombia, which raised $240 million as part of a $500 million debt exchange with mostly local investors. El Salvador, however, raised $300 million in July, following an $500 million issue in April.

Access remained relatively unimpeded for Eastern European, investment-grade Asian, and relatively infrequent sovereign issuers seen to provide portfolio diversification, such as Jamaica and Grenada. Since April, Poland, supported by its high ratings, successfully issued $1 billion, while the Philippines added $300 million to its 2009 bond, capitalizing on the perception that it was one of the more attractively priced Asian issuers. Malaysia raised $600 million in early July.

Risk aversion remains strongest in the euro- and yen-denominated markets, largely due to a falloff in retail demand for emerging market bonds in these markets after Argentina's default.

Figure 3.6. Bond Issues
(In billions of U.S. dollars)



Source: Capital Data.

Since April, these markets were open primarily to issuers with an investment-grade rating or those providing diversification and considered to be unlikely to be affected by broader market turmoil, including Estonia (€100 million), Iran (€500 million), Croatia (¥25 billion), and South Africa ($1,000 million).

Going forward, access will in part be determined by the divergent credit quality across the emerging markets. While the corporate credit quality improved during the second quarter, with the credit ratio defined as the number of credit downgrades per upgrade having fallen to 1.5 in the second quarter from 2.9 a quarter earlier, Latin America clearly underperformed other regions. Korea, with five upgrades in the second quarter, showed the strongest improvement. Looking forward, S&P continues to see Latin America as the most vulnerable to further downgrades, mainly due to the impending crisis in Argentina and strain in Brazil. Over half of the issuers currently on negative credit watch are Latin American issuers, with industry exhibiting more weakness than other sectors.

A large majority of the international bonds issued by emerging market sovereigns in the first seven months of 2002 did not include collective action clauses. About 73 percent of bonds issued, representing 81 percent of total value, were governed by New York law, under which market practice does not normally include collective action clauses in bond covenants. In 2001, 37 percent of new sovereign issues (33 percent of value) were governed by English or Japanese law, which typically includes collective action clauses.

Bond Market Vulnerabilities

The channels of contagion include a sharp and generalized increase in the cost of funds to emerging markets and a retrenchment of cross-border lending by banks and the financial sector as a result of currency mismatches in the assets and liabilities of banks (Box 3.1). Market participants see a risk that contagion could increase, especially if sentiment toward Brazil deteriorates.

- Latin American bonds—which account for 50 to 60 percent of most emerging market bond indices—would most likely continue to bear the brunt of a deterioration in sentiment, although investment-grade credits would likely hold up relatively well.
- Investor retrenchment would also likely affect other countries in which concerns over policy continuity and debt dynamics predominate. Turkey could be vulnerable also in this case.
- Notwithstanding the reduction in foreign investor exposure to Brazil in the course of the quarter, these remain sizable. Given these exposures, and the diminishing liquidity from banks' dealing desks as investment banks cut back their risk limits, investors could seek to raise cash levels by selling the liquid issues of other countries. In that event, Mexico, Russia, and the Philippines could be affected.
- In addition to financial contagion from Brazil, developments in Argentina continue to sour investor sentiment toward the region and have affected neighboring countries through real and banking sector channels. In Uruguay, where a sizable share of deposits in the banking system are owned by Argentine residents, spreads in its most liquid bond have widened to new highs.

Market sentiment toward emerging bond markets is also vulnerable to increased risk aversion stemming from mature market developments, including in particular continued equity market volatility. Using a relatively short-term measure, the rolling 30-day correlation between the EMBI+ total return index and the S&P 500 total return index changed sign and magnitude sharply since early May, rising from –0.1 to 0.4 by the end of June. Longer-run correlations have been stronger. A further sharp downturn in mature equity markets would likely lead to a further retrenchment from emerging markets, especially if the prospects for global growth were also undermined.

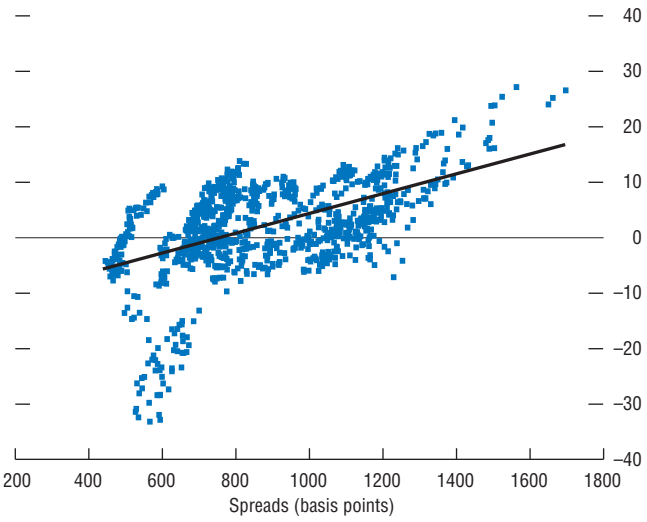
There are a number of factors mitigating these vulnerabilities.

- Emerging market valuations have become more attractive. Historically, emerging market

bond investments have generally performed well in periods following an increase in EMBI+ bond index spreads (see Figure 3.7). Spreads rose 201 basis points throughout the second quarter to 799 basis points at the end of June, and further to 981 basis points as of August 12 (see Box 3.2). At these levels, absent further bad news, there is scope for renewed portfolio inflows into the asset class, especially if the global economic recovery is sustained.

- Rising cash holdings have mitigated downside risks. Cash holdings have increased, suggesting the possibility of a rebound in prices should sentiment improve. The cash holdings of dedicated investors have reportedly increased to an average of 9–10 percent (with a median of 5–6 percent), with some of the most risk averse funds reporting as much as 15 percent in cash. However, past experience suggests that these cash levels could rise further. During periods of high global risk aversion, average cash allocations have been 2 to 3 percentage points higher, and median allocations some 1 to 2 percentage points higher.
- Investment banks report that a pipeline of new emerging market bond mandates has been built up whose deployment, once sentiment improves, would provide a further support to prices.

Figure 3.7. EMBI+ Spreads Versus 60-Day Returns
(60-day return; in percent)



Sources: IMF staff estimates; and J.P. Morgan Chase.

Primary Market Vulnerabilities

Primary market vulnerabilities revolve around the possible duration and extent of investor retrenchment should there be a further sharp deterioration in investor sentiment. Market closures can follow periods of extreme volatility, are more prevalent in environments where event risk is high, and can be triggered by developments in either mature and emerging markets. The risk from market closure appears most acute for Latin American corporates, which experienced serious difficulties in raising new funds without credit enhancements or resorting to private placements (Box 4.2, Chapter IV). Refinancing risks to the region's corporates are

Table 3.3. Equity Market Performance, 2002
(In percent, dollar indices)

	Q1	Q2	First Half of 2002	Year to Date[1]
Emerging Market Free	10.7	–9.0	0.7	–8.0
EMF Asia	14.9	–6.3	7.7	0.0
EMF Latin America	7.1	–22.0	–16.5	–25.5
EMEA	5.1	–1.8	3.1	–7.6
Dow	3.8	–11.2	–7.8	–13.3
S&P 500	–0.1	–13.7	–13.8	–21.3
Nasdaq	–5.4	–20.7	–25.0	–33.0
ACWI Free	0.5	–9.5	–9.1	–17.6
ACWI Free exc. U.S.	1.1	–3.5	–2.4	–13.1

Sources: Bloomberg L.P.; IMF staff estimates; and Morgan Stanley Capital International.
[1]Data as of August 12, 2002.

thus very high. On the sovereign side, the risk of market closure is mitigated, as many sovereign credits successfully prefinanced large portions of their 2002 needs in the last quarter of 2001. However, this prefinancing cushion is running out.

Emerging Equity Markets

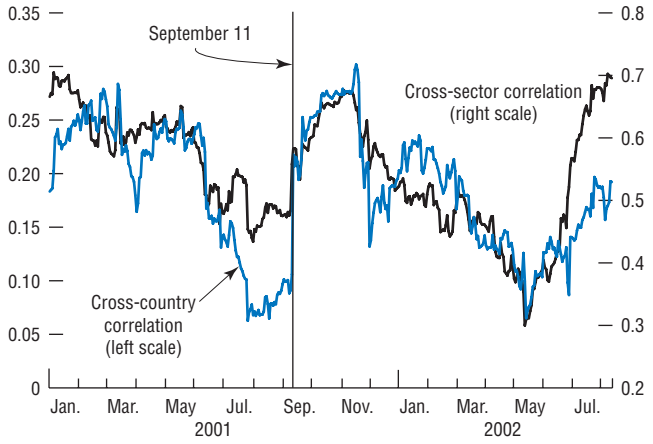
As in the case of emerging market bonds, emerging equities fell in the second quarter, largely offsetting the strong performance of the first quarter. Nevertheless, emerging market equities outperformed their mature market counterparts in the first half of the year. Most of the decline in the second quarter was concentrated in June and in Latin American shares (see Table 3.3). Asian equities also suffered declines, following a particularly strong performance in the first quarter, while the Europe, Middle East and Africa index suffered only a modest decline.

Latin American equities fell in synch with bonds, with the three-month moving correlation between returns on the EMBI+ and the Latin American shares spiking to a three-year high, reflecting in part currency developments, but still remaining below the peaks seen during previous crises (see Figure 3.8). All the main markets declined, with Brazil falling 25.9 percent and Chile dropping 6.1 percent, with the latter closely

Figure 3.8. Correlation Between Returns on the EMBI+ and the Latin American Free Equity Index
(60-day rolling correlations)

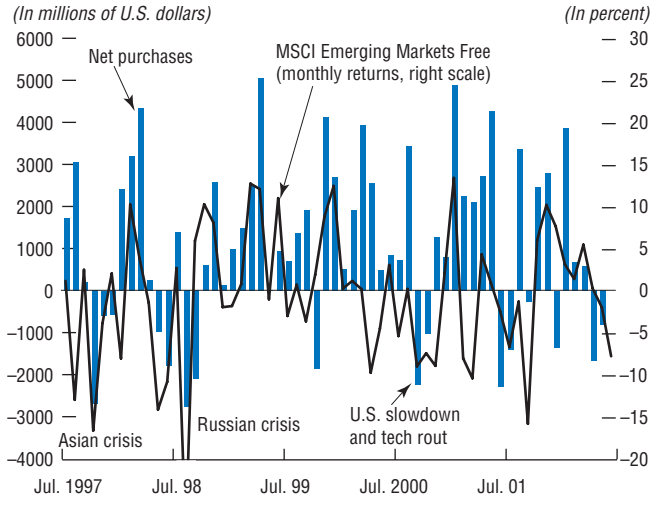
Sources: IMF staff estimates; J.P. Morgan Chase; and Morgan Stanley Capital International.

Figure 3.9. Average Correlations of the Returns on Emerging Equity Markets Indices
(50-day rolling correlations)



Sources: IMF staff estimates; and Morgan Stanley Capital International.

Figure 3.10. Net Foreign Purchases and Monthly Returns on Emerging Equity Markets[1]



Sources: IMF staff estimates; central banks; and Bloomberg L.P.
[1]August 2001 data exclude $8.9 billion for Mexico for the purchase of Banamex by Citigroup.

tracking U.S. equity markets. Mexico was not immune, as its shares fell 19.6 percent during the quarter, reflecting declining U.S. markets and weak global telecoms.

Asian equities also declined in the second quarter, notwithstanding gains by Indonesia (19.0 percent) and China (1.1 percent), with the better performers benefiting from the impact of strong domestic demand on expectations for earnings growth. India fell 7.8 percent on heightened regional political instability, notwithstanding the view that equity valuations were favorable. A high proportion of technology shares weighed on the performances of the Korean market (which fell 3.6 percent) and Taiwan Province of China (which fell 14.3 percent). Hong Kong SAR fell 6.1 percent as a large pipeline of China-related new equity issuance (of $22.4 billion) remained a key concern. Nevertheless, Thailand gained 5.3 percent, given strong inflows from foreign investors.

Among the regional subindices, emerging Europe, Middle East, and Africa performed best, losing only 1.8 percent, even as Turkey fell sharply (down 35.2 percent) and Russia lost 1.6 percent on weaker oil prices. South Africa turned in a strong 7.3 percent gain over the quarter despite a major sell-off in June.

Regional and country considerations appear to have dominated investor concerns as the cross-correlation of country correlations declined, while cross-sector correlation increased (see Figure 3.9). This investor focus was also evidenced by the shift in mutual fund flows during the quarter from Latin America. All sectors fell, led by the high tech and telecommunications sectors, which declined by 17.6 percent and 14.4 percent, respectively.

Net Foreign Flows to Emerging Equity Markets

Net foreign purchases of emerging equities moderated over the quarter, and were negative in May and June (see Figure 3.10). Following net inflows into U.S.-based emerging equity mutual funds (of $338 million) in the first quarter, there

were net withdrawals (of $25 million) in the second quarter. In June alone, the net outflow from emerging market mutual funds reached $293 million.

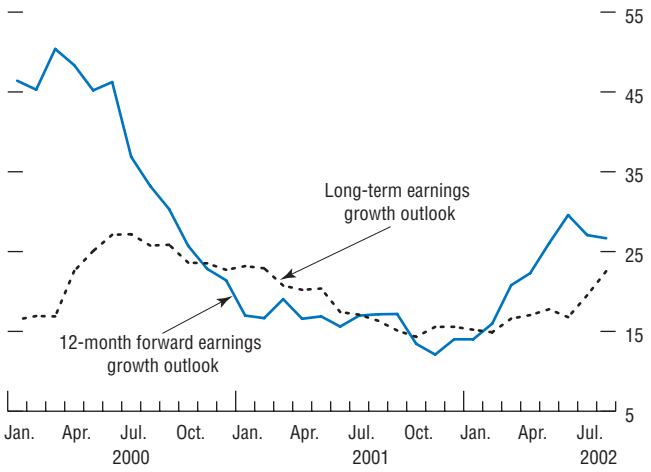
Investor Sentiment and Earnings Outlook

Despite heightened risk aversion, and the poor performance of the second quarter, institutional emerging market equity investors reportedly remain overweight in emerging market equities, owing largely to perceived favorable valuations, lower leverage, and the view that the asset class has scope for becoming a larger share of the portfolios of large institutional investors. Markets do not perceive the potential for slow global economic growth as a significant threat to emerging equities, especially in Asia, where economic data remain positive. While dollar weakness poses some risk to the region's export recovery, intraregional trade, especially with China, continues to accelerate.

Earnings growth expectations further support the outlook for emerging equities. The long-term earnings growth outlook improved slightly in June, and the 12-month forward consensus earnings projection remains strong, despite a slight downward revision in June (see Figure 3.11).

Figure 3.11. Emerging Market Earnings Forecasts

(In percent)



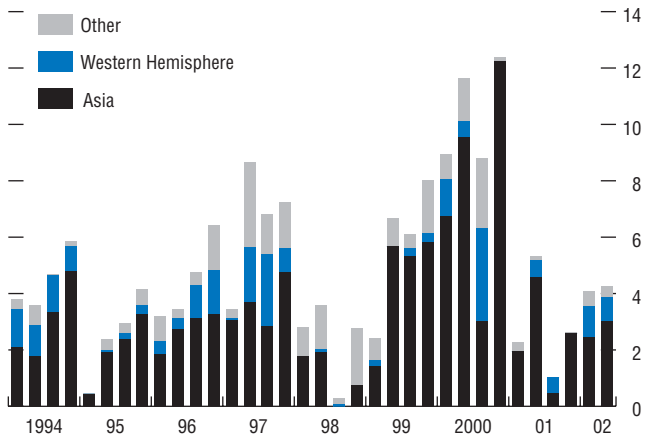
Source: I/B/E/S International.

Primary Equity Issuance

International equity issuance by emerging markets totaled $4.3 billion in the second quarter, slightly higher than issuance in the first quarter, but well off the volume seen last year (see Figure 3.12). Asian companies, especially high-tech firms located in Taiwan Province of China, dominated issuance, and represented about 70 percent of the total. Korean banks and Malaysian firms in the telecommunications and transport sectors also had big issues. There were only two equity issues originating from Latin America—Bancomer, a Mexican bank ($782 million) and a public service company in Brazil ($61 million). Two South African mining companies issued a total $260 million.

Figure 3.12. Equity Placements

(In billions of U.S. dollars)



Source: Capital Data.

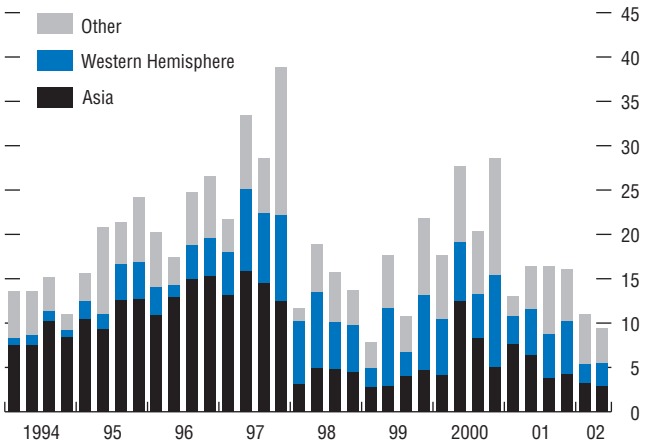
Syndicated Lending in the Emerging Markets

Syndicated lending to emerging markets declined in the second quarter of 2002, reflecting downward revisions to the global economic outlook and heightened concerns about corporate governance and accounting issues in the mature markets, with their attendant ramifications for banks' portfolios (see Figure 3.13). As in the other sources of emerging market finance, creditors sought to shift their exposure to higher-quality borrowers. Losses on banks' Argentine exposures and an escalation of worries about Brazil later in the quarter also weighed on sentiment. Reflecting such concerns, European and U.S. banks continued to tighten lending standards, with the total volume of lending to emerging markets declining to just $9.4 billion in the second quarter, from $10.9 billion in the first. Lending amounted to about 57 percent of that of the second quarter of 2001, and constituted the lowest quarterly figure since the third quarter of 1999, with volumes in June particularly low as developments in Brazil took a turn for the worse. Looking forward, syndicated lending is not expected to gather pace over the summer, which is typically a slow period in the loan markets, nor to pick up substantially in the fall in the absence of a decisive turnaround in the global outlook.

The rotation of lenders' exposure from Latin America into emerging Europe, the Middle East, and Asia, noted in the June 2002 issue of the *Global Financial Stability Report*, remained a theme, even as substantial liquidity in these local markets continued to spur local currency denominated lending. In addition, the share of lending to sovereigns and public institutions remained steady at a high level. Brazil received the highest volume of loans ($938 million) of any country, split more-or-less evenly between public and private institutions, although these deals were reportedly difficult to syndicate in the absence of political risk insurance. However, three-quarters of this lending to Brazil represent refinancing of maturing loans. Turkish corporates and banks were also large syndicated loan recipients ($665 million).

Figure 3.13. Syndicated Loan Commitments

(In billions of U.S. dollars)



Source: Capital Data.

On the pricing front, competition among lenders for top-tier company mandates in Asia and emerging Europe remains keen, resulting in a narrowing of loan margins, in some cases approaching Western European levels (see Figures 3.14 and 3.15). In Asia, substantial bank liquidity, combined with a dearth of attractive lending opportunities, is leading banks modestly down the credit curve to medium-sized firms and prompting them to offer longer tenors to top-tier clients at very fine margins. In Latin America, syndicated loan spreads remain flat despite sharply shorter tenors, with attention focused on credit quality.

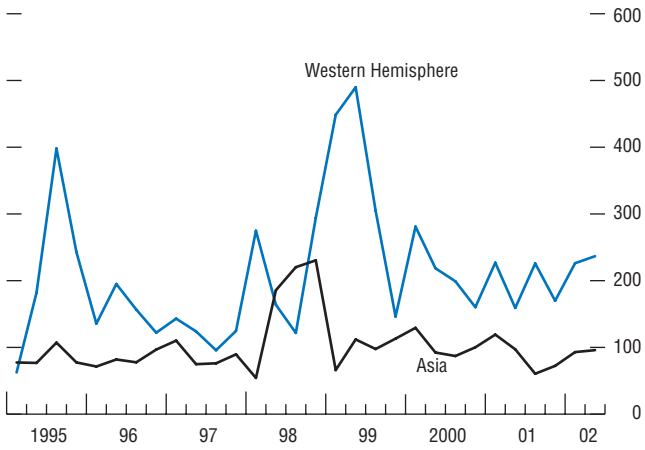
Foreign Exchange in Emerging Markets

Foreign exchange developments in emerging markets diverged during the second quarter, as Latin American currencies fell sharply (see Figure 3.16), reflecting a broader retrenchment from the region, while Asian currencies tended to rise, in some cases raising competitiveness concerns.

In *Brazil*, the *real* has depreciated by 26 percent since mid-April and 21 percent for the quarter, closely tracking the decline in the country's debt and equity markets. While corporate hedging remained relatively subdued (compared to the last quarter of 2001), demand for dollars increased as investors reassessed their positions amid concerns about policy continuity and debt dynamics. In addition, the introduction of mark-to-market regulations for fixed income mutual funds in late May led to heavy redemptions from these funds ($8 billion in June alone), with some of the outflows finding their way out through the currency market. Against this background, the central bank began shortening the maturity profile of domestic debt, rather than paying the higher interest rates investors were demanding to hold longer dated assets. As *real* weakness persisted, the central bank actively intervened. However, the potential for dollar demand stemming from corporate debt amortizations (reportedly $1.4 billion in July and $1.3 billion in August) is

Figure 3.14. Loan-Weighted Interest Margin

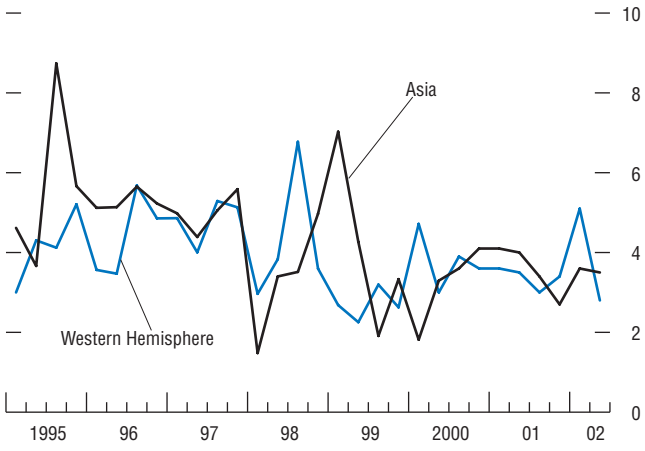
(In basis points)



Source: Capital Data.

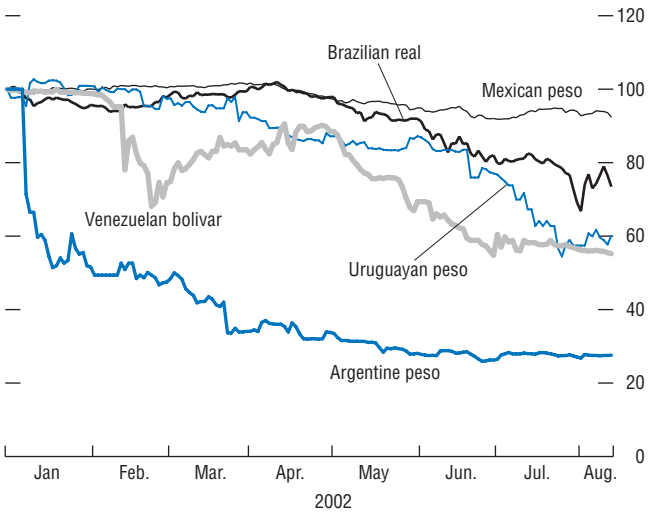
Figure 3.15. Loan-Weighted Maturity

(In years)



Source: Capital Data.

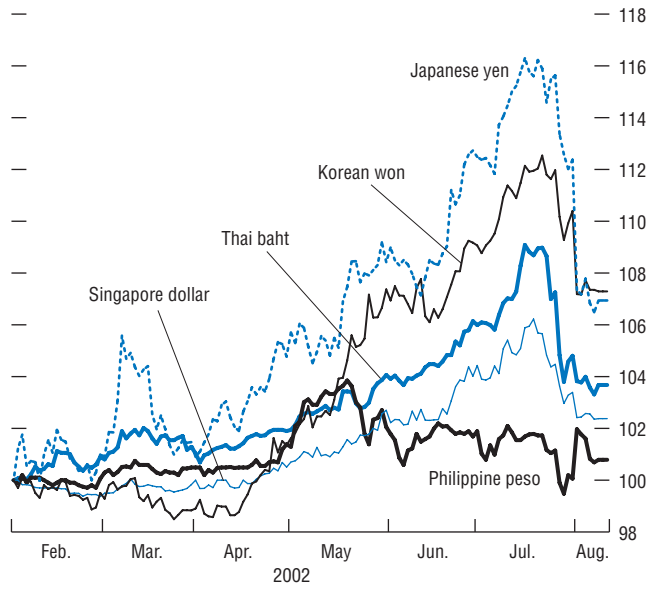
Figure 3.16. Latin American Currencies Against the U.S. Dollar



Source: Bloomberg L.P.

Figure 3.17. Asian Currencies Since the Dollar Peak

(January 31, 2002 = 100)



Source: Bloomberg L.P.

high and market access for corporates remains difficult.

In *Mexico*, the peso depreciated 6.7 percent against the dollar during the quarter, largely owing to U.S. dollar weakness, concerns about U.S. growth, and the adoption of a looser monetary policy stance. The monetary easing in April was widely interpreted as an expression of concern over peso overvaluation. In response, the Bank of Mexico stressed that such a move was due to a much more favorable inflation outlook. The unwinding of speculative positions, profit taking in the fixed income market, and corporate hedging accentuated the depreciation. Moreover, projections for capital inflows have been reduced due to the low interest rate differential with the United States and delays in the liberalization of the energy market, which will reduce the amount of foreign direct investment (FDI) into the sector.

In *Argentina*, the peso fell 30 percent against the dollar during the quarter, largely as excess liquidity in the system resulting from the deposits outflows, and from central bank assistance to the banks, triggered additional demand for dollars, despite heavy central bank intervention and tighter restrictions for currency transactions. Developments in the deposit base and in the banking system at large are likely to continue to put pressure on the peso, with one-year forwards pricing the peso at 9 to10 pesos per dollar. For the other countries in the region, currency weakness has been the norm. In *Venezuela*, the depreciation of the bolivar continued unabated (48 percent for the quarter) on reportedly strong capital outflows, while the use of resources from the oil-stabilization fund was not sterilized. In addition, currency depreciation was perceived as the only remaining tool left to the government to close the fiscal gap, given its difficulties in accessing local and external financing. In *Uruguay*, the authorities abandoned the trading band system in late June and let the peso float freely. Since then the peso depreciated sharply, while reserves have continued to decline and concerns about deposit outflows remain salient.

Eastern European currencies in general have tracked the euro's steady rise. The *Czech koruna* appreciated strongly, rising 5.1 percent against the euro during the quarter, notwithstanding a rate cut and central bank intervention. The koruna's ascent was driven by the improving external balance and expectations of privatization receipts. The volatility of the *Hungarian forint* rose, while the currency closed the quarter largely unchanged against the euro. Investor concern was focused on the attainment of the year-end inflation target range, which appeared increasingly challenging, notwithstanding a 50-basis-point hike of the central bank benchmark rate in May, fears of supply pressures in the local bond market from the government's fiscal plans, and investor perception of uncertain prospects for continued central bank independence. The *Polish zloty* depreciated 11.2 percent against the euro during the quarter, as interest rates were cut three times by a cumulative 150 basis points. Profit taking from foreign investors in the local bond market weakened the currency, as did investor concerns over the compatibility of the muted currency board with the fiscal stance.

The *Turkish lira* reversed course losing 15 percent against the dollar, as political concerns weighed on the lira and foreign investors remained on the sidelines. The *South African rand* appreciated by 9.5 percent over the second quarter, thus recouping ground lost since the late 2001 turmoil. Besides the rising interest rate differential, higher commodity prices and easing political tensions in Zimbabwe helped support the currency. With a firming euro, the prospects for the rand are seen as stable. The currency, however, has historically exhibited a strong correlation with emerging market conditions, as well as with assessments of global growth prospects.

Asian emerging markets were seen as offering some of the better prospects for investors, and high foreign exchange reserves were seen as giving economies in Asia some degree of protection against negative shocks (see Figure 3.17). In contrast to those of several Latin American nations, Asia's external financing requirements are quite low. Three Asian economies—China, Hong Kong SAR, and Malaysia—have exchange rates pegged to the U.S. dollar. Their currencies automatically weakened as the dollar fell, helping improve their competitiveness vis-à-vis other economies in the region. Other countries in the region were faced with rapid appreciation. The *Korean won* tracked the yen and rose 10.6 percent over the quarter against the dollar, although the rise since the end of 2001 has only been some 3 percent in nominal effective terms. The strengthening of the *Thai baht*, *Singapore dollar,* and *New Taiwan dollar* was much more modest, at 4.2–4.8 percent. The *Indonesian rupiah* continued to benefit strongly from improved investor confidence and performance under the IMF-supported program. As a result, the rupiah showed the region's largest gains again in the second quarter, rising another 12.8 percent, bringing the gains for the year to 19.5 percent.

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							
			Government		Financial institutions		Corporate		International[1]	
Country	Total Bonds Outstanding	Percent of 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

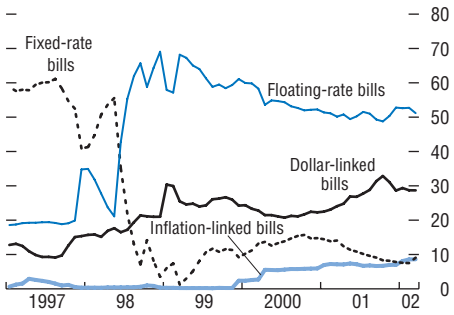
Box 4.1. Indexed Bonds

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.

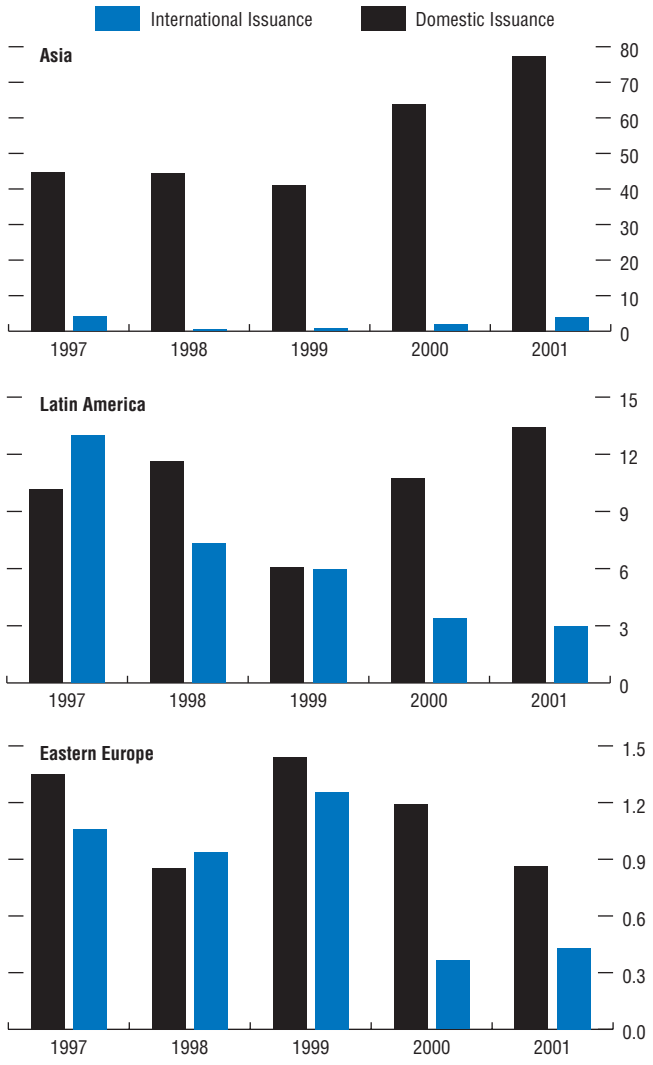
Corporate Bond Markets

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

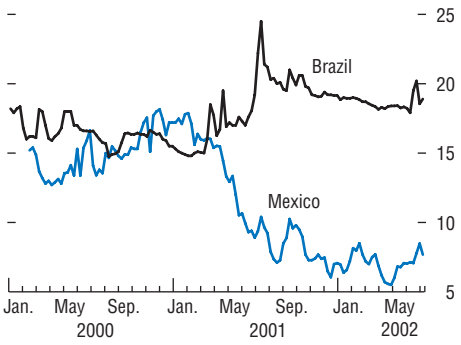
Box 4.2. External Refinancing Risk in Latin America

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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