

Exceptionally low short-term interest rates in the major financial centers contributed to resurgent economic growth and rising corporate earnings and to progress in strengthening corporate balance sheets, thus improving the fundamental economic outlook.¹ Policies pursued to stimulate economic growth also created powerful incentives for investors to venture further out along the risk spectrum and contributed to a recovery of asset valuations.

The combination of improved fundamentals and abundant liquidity buoyed global asset prices. Appetite for risk recovered and investor flows suggested an allocation away from relatively low-yielding assets in favor of riskier investments. Equity markets worldwide staged strong rallies in 2003, following three successive years of declines. In part reflecting the impact of this rally on investor sentiment, the level of volatility implied by options on European and U.S. equity markets fell. The complementary catalysts of improved credit quality and abundant liquidity also pushed credit spreads on mature and emerging market bonds to low levels, led by precipitous spread compression on high-yield bonds.

This combination created a very favorable external financing environment for emerging market borrowers in 2003 and early 2004. Gross and net issuance by emerging market countries recovered strongly in 2003. Bond issuance in January 2004 was exceptionally high. Many borrowers have appropriately taken advantage of the relatively low cost of capital and strong investor appetite to prefinance their borrowing needs and to undertake liability management operations aimed at

improving the structure of their domestic and external debt.

These developments have helped to underpin a further improvement in the outlook for financial market stability since the last issue of the GFSR. Looking ahead, there are two sources of downside risk to the outlook.

- In a low interest rate environment, asset valuations may be pushed beyond levels justified by tangible improvements in fundamentals. Stimulus aimed at recovery may also encourage overvaluation.
- The large global external imbalances and the equally sizable flows they engender pose another potential source of market instability. Adverse developments in the currency markets could heighten investor risk aversion and spill over into other asset markets.

Low short-term interest rates and a steep yield curve provide powerful incentives to boost leverage, undertake carry trades, and seek yield by going out along the credit risk spectrum. There is a real risk of investor complacency in a low interest rate environment. An unanticipated spike in yields and volatility in the U.S. treasury market could also trigger a widening of credit spreads in mature and emerging markets and encourage an unwinding of carry trades and leveraged positions.

In this environment, policymakers and regulators must be vigilant for excessively leveraged or concentrated investor positions. Moreover, if asset valuations become based on excess liquidity rather than fundamentals, the withdrawal of monetary stimulus could trigger a widespread reassessment of asset valuations. To limit this risk, the transition to tightening needs to be carefully managed and clearly

¹See the April 2004 *World Economic Outlook* for a detailed discussion of global macroeconomic prospects and issues.

communicated to markets. In this context, the removal of the assurance that interest rates would remain low “for a considerable period” in the January 28 statement of the Federal Open Market Committee provided a salutary reminder to investors of the need to avoid being unduly influenced by low interest rates in making investment decisions. This reminder bears repeating.

Ensuring an orderly reduction in global external imbalances is another key challenge and a second potential source of risk to financial markets. The April 2004 *World Economic Outlook* highlights the need for cooperative international policy action to address the sources of these imbalances. From a financial market perspective, the magnitude of the capital flows needed to finance the large U.S. external current account deficit, the large share of official flows in this financing, and the heavy tilt toward fixed-income investments as a destination for such flows are attracting considerable attention.

The possibility that investors could demand an increased risk premium for U.S. dollar-denominated assets in an environment of a rapid decline in the value of the dollar raises the risk of broad financial market turbulence. In this case, yields on U.S. treasury securities could be pushed significantly higher, undercutting the valuation of riskier assets. Although the dollar is widely expected to trend further downward in 2004, there are so far no signs of a lack of willingness to hold dollar assets. Indeed, data through the end of 2003 suggest continued strong official inflows related to currency intervention and renewed private investor interest in U.S. corporate bonds and equities. Moreover, the implied volatility on dollar/yen and dollar/euro currency options remains subdued.

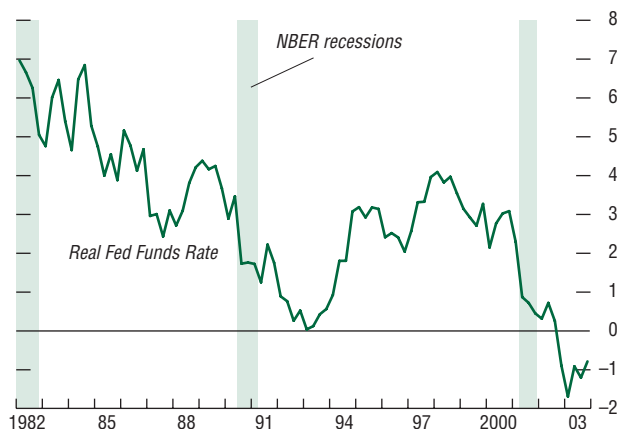
Emerging markets face risks stemming from a potential deterioration in the favorable external financing environment. An unexpectedly sharp increase in underlying U.S. treasury yields would likely trigger a widening of credit spreads on emerging market bonds.

Emerging market borrowers would face higher borrowing costs, and underlying vulnerabilities that had been masked by the very favorable external financing environment would be more starkly exposed. Countries with large levels of public debt and volatile debt structures would be most at risk. The risks to emerging markets are mitigated, however, by improved global growth prospects, higher commodity prices, the resilience afforded by increased exchange rate flexibility, increased foreign exchange reserves, and action taken to address potentially volatile debt structures.

This chapter analyzes key developments and risks in mature and emerging financial markets, focusing in particular on the factors underlying the strong rebound in global asset prices in 2003 and on whether that rebound has pushed asset valuations to levels that are not fully justified by fundamental improvements in earnings growth and credit quality.

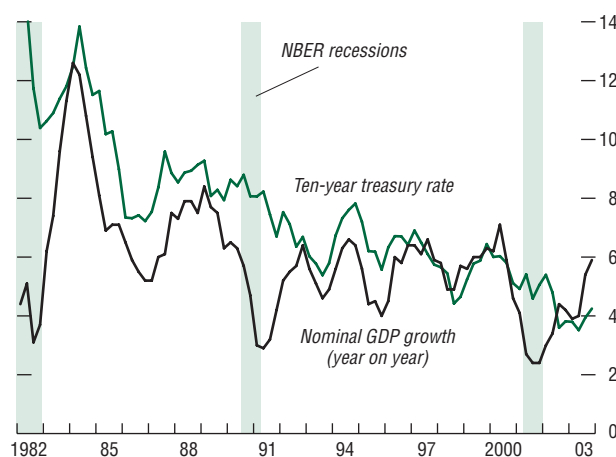
- The first section highlights developments and vulnerabilities in mature markets, including in particular the role of low short-term interest rates in influencing investor behavior, market expectations for short-term interest rates, developments in mature equity and corporate bond markets, and changing market sentiment toward the dollar. Given the potential for a more abrupt than anticipated increase in interest rates, the current yield curve environment is compared with that prevailing in 1994, the time of the last mature government bond market sell-off.
- The second section analyzes spread developments in the emerging bond market, with particular attention to the degree to which low short-term interest rates rather than fundamentals alone have contributed to the steep decline in yield spreads on emerging market bonds. This section also provides an update on financial market developments in EU accession countries following the setbacks of 2003.
- The third section reviews developments in gross and net portfolio and foreign direct

Figure 2.1. The Real Federal Funds Rate
(In percent)



Sources: Bloomberg L.P.; National Bureau of Economic Research (NBER); and IMF staff estimates.

Figure 2.2. U.S. Nominal GDP and 10-Year Treasury Rates
(In percent)



Sources: Bloomberg L.P.; National Bureau of Economic Research (NBER); and IMF staff estimates.

investment flows to emerging market countries, placing them in the context of developments in mature and emerging secondary markets. Steps taken to use the currently favorable financing environment to undertake liability management operations to improve the structure of domestic and external debt are highlighted.

- The fourth section applies financial soundness indicators to assess the vulnerabilities of selected emerging market banking systems.
- Finally, the discussion of risks in the main financial centers provided in the fifth section focuses on improvements in sectoral balance sheets, developments in the U.S. mortgage market, the factors underlying the recent proliferation of hedge funds, progress (and setbacks) in improving corporate governance standards, and key recent regulatory developments.
- Appendix I further explores the extent to which low short-term interest rates have compressed credit spreads on emerging market bonds to a point not fully justified by improvements in fundamental credit quality.
- Appendix II assesses recent initiatives to develop a regional bond market in Asia.

Developments and Vulnerabilities in Mature Markets

Yields in Major Government Bond Markets Remain Exceptionally Low

Interest rates in the United States and other major markets are low and will eventually need to rise. Indeed, in some countries, notably Australia and the United Kingdom, the tightening cycle has already begun. Speculation over the timing and magnitude of the U.S. tightening cycle has increased, with the dissipation of deflation fears in mid-2003 and subsequent mounting signs of economic recovery. The transition to tightening could have broad implications since abundant liquidity—and not just improved fundamentals—has played a

major role in boosting asset prices and the near homogeneous compression of spreads observed in the mature and emerging markets. When risk-free rates rise, valuations in many markets could be pressured, and investors' appetite for risk tested.

With the Fed funds rate at a 45-year low of 1 percent, U.S. economic growth resurgent, and government bond issuance set to increase, the slope of the U.S. treasury yield curve has remained quite steep throughout 2003 and early 2004. The real Fed funds rate (deflated by the consumer price index) is negative. It is quite low by historical standards and given the stage in the economic cycle (Figure 2.1). Since short-term interest rates are a key building block for the valuation of other riskier assets, the maintenance of low short-term rates can have a pervasive effect on the price of other assets. As rates rise, asset valuations predicated on an unusually low level of risk-free rates could be called into question.

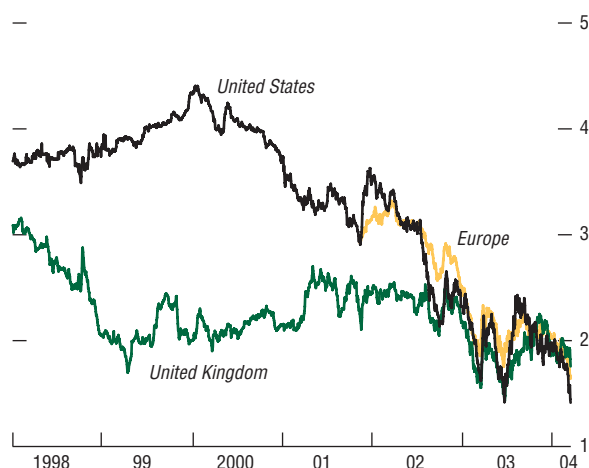
In the major government bond markets, low short-term rates and limited inflationary pressure have helped keep nominal yields along the maturity spectrum low by historical standards in most major markets. Yields on U.S. treasury securities remained negative in real terms in January 2004 for maturities of up to two years, as were yields on German Bunds with a tenor of one year or less.

The yield on 10-year U.S. treasury securities has in the past tended to move with nominal GDP growth during non-recessionary periods. While nominal GDP growth has recovered from the recent recession, 10-year U.S. treasury yields remain bound in a low range (Figure 2.2).

The real yields on inflation-indexed bonds in the euro area, the United Kingdom, and the United States have fallen to historically low levels (Figure 2.3). This decline largely reflects the influence of the low level of short-term rates on investor assessments of alternative investments. At the same time, market expectations for inflation in the euro area and the United States rose during 2003 (Figure 2.4).

Figure 2.3. Inflation-Indexed Bond Yields

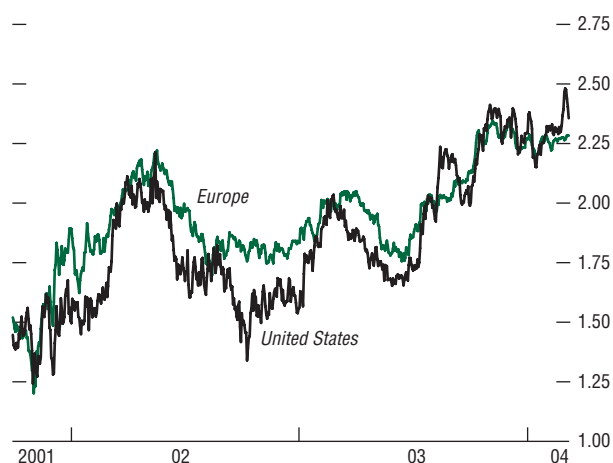
(In percent)



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

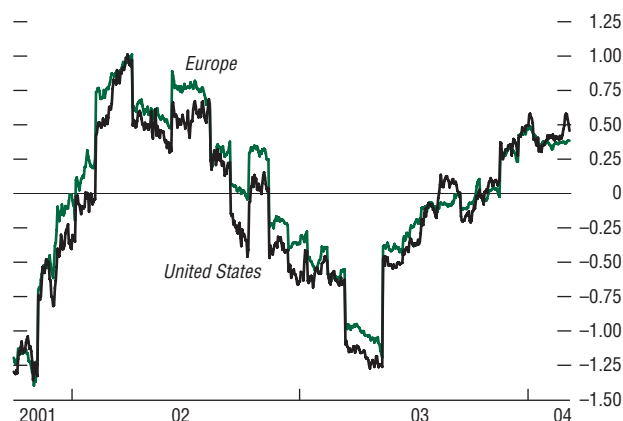
Figure 2.4. Long-Term Inflation Expectations

(In percent, 10-year nominal yields less inflation-indexed yields)



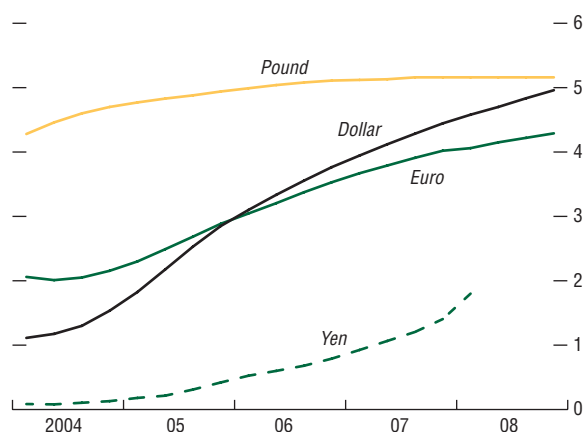
Sources: Bloomberg L.P.; and IMF staff estimates.

Figure 2.5. Inflation Expectations Less Current Inflation
(In percent)



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

Figure 2.6. Three-Month LIBOR Futures Strip Curves
(In percent, as of March 2, 2004)



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

Throughout much of 2003, while deflation fears weighed on bond yields, the break-even inflation rates² in the euro area and the United States were below the actual inflation rate, suggesting that the market expected inflation to fall further (Figure 2.5). Since October 2003 however, the break-even inflation rate has risen and is now slightly above the actual inflation rate, suggesting markets now expect actual inflation to rise. While market-based measures of inflationary expectations can be distorted by market segmentation and by the smaller size and lower liquidity of the markets for inflation-protected securities compared with securities offering nominal yields, some market participants viewed these developments as a harbinger of upward pressure on yields.

Reflecting the steep slope of the U.S. treasury yield curve, short-term interest rate futures contracts are discounting an increase in U.S. dollar interest rates (Figure 2.6). Markets in the euro zone and the United Kingdom are also pricing in an increase in short-term rates, although not as rapid as that anticipated in the case of the United States. U.S. short-term interest rates are priced to exceed those in the euro area from 2005.

While global short-term interest rates are widely anticipated to increase from exceptionally low levels, this increase is presently not expected to be disruptive. Nevertheless, bond market volatility has remained high and investors could quickly revise their interest rate outlook, as they did during the 1994 sell-off of global fixed-income markets (Box 2.1). In 1994, policy rates in the United States rose much more rapidly than anticipated, resulting in a global government bond market sell-off.

²The spread between the real yield on inflation-indexed government bonds and their nominal counterparts provides an indicator of market expectations for average inflation over the life of the bonds being compared. The spread represents the break-even inflation rate that would make an investor indifferent to a conventional nominal bond and one linked to inflation.

Box 2.1. The Shift to Tightening: Parallels Between 1994 and 2004

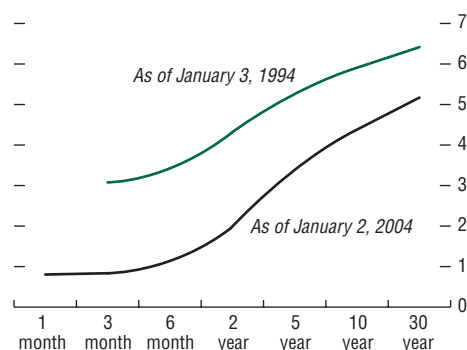
Forward markets have priced in a gradual rise in U.S. short-term interest rates over the next years. Bond market volatility has remained elevated, however, reflecting uncertainty over the timing and extent of policy tightening. Investors could quickly revise their benign interest rate outlook, as they did prior to the sell-off in global fixed-income markets of 1994.

The Global Bond Market Rout of 1994

Prior to the sell-off in 1994, U.S. investors had built up sizable positions in Europe's bond markets, attempting to capture capital gains expected from the unwinding of financial market strain that followed the breakup of the European Exchange Rate Mechanism in 1992.¹ Entering 1994, financial markets anticipated monetary easing in Europe, driven by the uncertain recovery in Germany, subdued inflationary pressures, and high and rising unemployment. In the case of the United States, financial markets expected that a cyclical rebound would result in a gradual but steady increase in U.S. interest rates.

In the event, monetary easing in Europe fell short of expectations and markets were surprised by the pace of monetary tightening in the United States that began in February 1994. During the following 12 months, the Fed funds rate was doubled to 6 percent in the course of seven successive rate increases. The ensuing sell-off in the U.S. treasury bond market was exacerbated by attempts by leveraged U.S. investors to hedge their exposure to European bond markets. Bond market volatility and correlation rose, and 10-year U.S. treasury yields shot up by almost 250 basis points, peaking at 8 percent in November 1994. Short-term rates rose by more, triggering a marked flattening of the U.S. treasury yield curve. In the process, investors curtailed their borrowing at short-term rates and their exposure to longer-dated, higher-yielding assets. This de-leveraging was broad-based and resulted in a marked widening of

U.S. Treasury Market Yield Curve (In percent)



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

emerging bond market yield spreads from 405 basis points at end-1993 to 800 basis points in mid-December, 1994, before the onset of the Tequila crisis.

Parallels with 1994

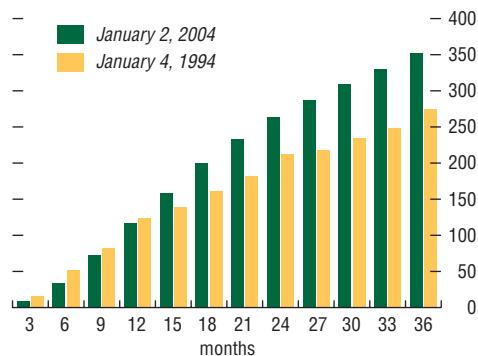
Just as in 1994, the outlook for interest rates in the United States was benign at the beginning of 2004. While inflation and nominal yields were substantially below those prevailing a decade ago, the shape of the yield curve at the beginning of 2004 was similar to that prevailing in 1994 (see the first Figure).

- The increase in short-term interest rates priced into futures markets at the beginning of 2004 was broadly comparable to the increase priced in a decade ago for shorter-dated contracts. However, for longer-dated contracts, the magnitudes of the interest rate increases expected at the beginning of 2004 exceeded those of 1994 (see second Figure).
- The U.S. treasury yield curve in 1994 and at the beginning of 2004 was extraordinarily steep (see the third Figure).
- The yield curve's unusual steepness provided strong incentives to seek leverage and build "carry trade" positions during both episodes. Such carry trades involve borrowing at low short-term interest rates to build positions in

¹See, for example, Goldstein and Folkerts-Landau (1994).

Box 2.1 (concluded)

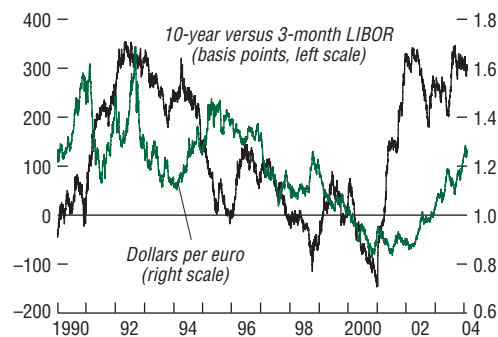
Implied Changes in Eurodollar Forwards Rate (In basis points)



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

higher-yielding, longer-dated bonds. Abstracting from bond price movements, such positions yielded 3 percentage points on average during 2003, estimated as the differential between the yield on 10-year U.S. treasury bonds and three-month LIBOR (see the fourth Figure). This differential reached a 10-year high last year, underscoring the potential for volatility from an unwinding of carry trades in response to rising short-term rates and a flat-

Excess 10-Year U.S. Treasury Yield Over Three-Month LIBOR



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

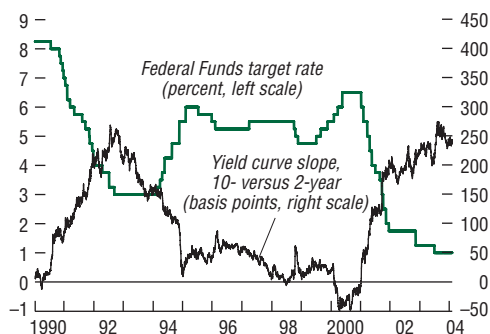
tening of the yield curve. In addition to carry trades, low short-term interest rates encourage investors to reach for yield in other ways, a factor that contributed to the marked compression in corporate credit spreads observed last year and a decade ago.

Divergences from 1994

While the phrase “it is different this time” is notorious for being a dangerous formulation in finance, no two market situations are ever identical. The similarities just described suggest that there is considerable scope for interest rate volatility and spillover to other markets, especially if market expectations shift from the gradual increase in rates currently discounted to a more abrupt pace of tightening and yield curve flattening. Current circumstances exhibit a number of major differences from those prevailing in 1994. However, some of these differences may as easily exacerbate as dampen volatility.

- Foreign holding of U.S. treasury securities reached an historic high at end-2003, accounting for 43 percent of the stock of marketable debt outstanding. Rising issuance was increasingly absorbed by demand from the foreign official sector, largely fueled by the proceeds of foreign exchange market intervention.

U.S. Interest Rate Indicators



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

- Consequently, foreign official purchases had a discernible impact on yield developments. The stock of marketable debt securities rose by \$370 billion during 2003. Private holdings—both foreign and domestic—increased by \$209 billion, with the slack taken up by official purchases. While the Federal Reserve Bank increased its holdings by \$37 billion, foreign official holdings increased by \$130 billion. The latter absorbed about one-third of the net increase of the stock of marketable securities during this period. Consequently, foreign official holdings rose to an estimated 24 percent of the stock of marketable U.S. treasury securities outstanding.
- Real interest rates remained low by any standard in January 2004, much lower than real rates in 1994. Real interest rates, however, could come under pressure to rise, if demand for capital by the private or public sector were to exceed expectations.
- The macroeconomic backdrop for financial markets was substantially different at the beginning of 2004 from a decade ago. While the current recovery has been more forceful,

Selected U.S. Economic and Financial Indicators

	1993–94	2003–04
GDP growth ¹	3.8	6.1
Productivity ¹	1.8	5.2
Budget deficit (in percent of GDP) ²	2.9	4.5
CPI (year-on-year percent change) ³	2.7	1.9
Core CPI (year-on-year percent change) ³	3.2	1.1
Fed Funds Rate ³	3.0	1.0
Ten-year U.S. treasury yield ³	5.8	4.2
Aa rated corporate bond spread (in basis points) ³	51	48
B rated corporate bond spread (in basis points) ^{3,4}	407	357
EMBI/EMBI+ spread (in basis points) ^{3,5}	396	418

Sources: Bloomberg L.P.; and IMF, *World Economic Outlook*.

¹Annualized second-half 1993 and 2003, respectively.

²FY1994 and FY2004, respectively.

³End-1993 and end-2003, respectively.

⁴End-1993 estimate using yield-to-worst convention.

⁵End-1993 EMBI, end-2003 EMBI+.

inflationary pressures are more subdued than in 1994, in part reflecting high productivity, softness in the labor market, and low capacity utilization. Consequently, pressure on yields to rise was limited in early 2004, notwithstanding the widening fiscal deficit and the need to boost issuance (see the Table).

In that episode, volatility and the correlation of global government bond markets rose sharply.

Bond and Equity Prices Surge

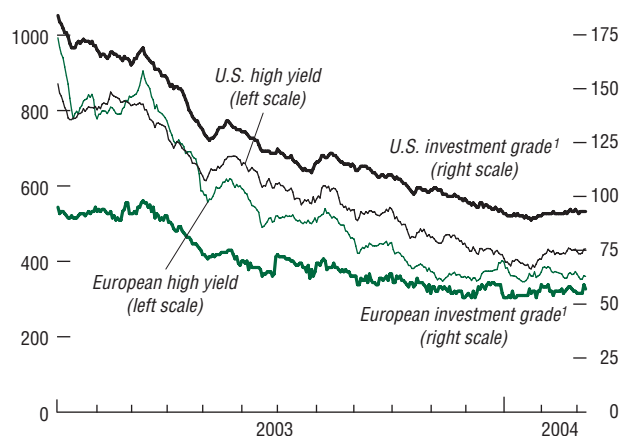
Corporate bond and equity market investment returns reflected an unusually vigorous credit cycle. With the first sign of global economic recovery, the value of claims on business in mature markets surged. A self-reinforcing improvement in valuations emerged as new high-yield credit and convertible financing for marginal borrowers again became available, sharply reducing the risk of business failure. Measures taken by corporations to cut costs, defer investment, and strengthen balance sheets amplified the positive impact of resurgent economic growth on earnings, cash

flow, and credit quality. The cyclical rebound in asset prices was further accentuated by the low interest rate environment and a starting point of high risk aversion that had developed in 2002.

Credit spreads on corporate bonds narrowed sharply in 2003, led in particular by high-yield bonds (Figure 2.7). The return on high-yield bonds in Europe and the United States in 2003—of nearly 30 percent—exceeded equity returns in mature markets and were comparable to the return on emerging market bonds. These returns were fueled by improved credit quality and strong investor inflows into corporate bonds in a quest for yield.

Corporate bond markets were boosted by expectations of a continued decline in corporate default rates (Figure 2.8). Bond rating

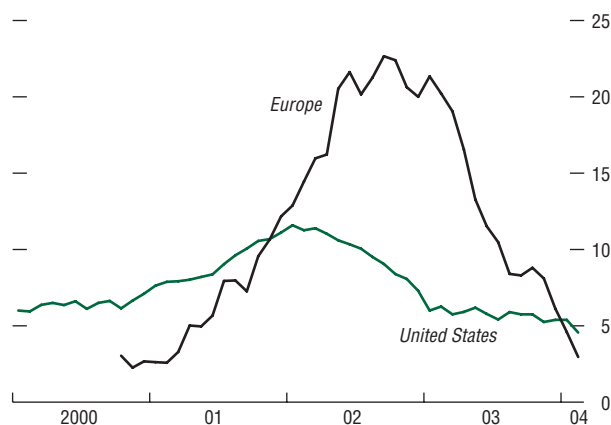
Figure 2.7. United States and European Corporate Bond Spreads
(In basis points)



Sources: Merrill Lynch; and IMF staff estimates.

¹The average credit quality for the U.S. investment grade index is lower than that of the European index.

Figure 2.8. Corporate Default Rates
(In percent)



Source: Moody's.

downgrades of companies to below investment grade—which exclude them from some portfolios and cause significant loss in value for important investor groups—were also sharply lower. Reduced default risk and strong investor demand for high-yielding assets permitted a rebound in high-yield bond issuance by European and U.S. corporations in 2003.

Corporate bond valuations, for both investment grade and high-yield bonds, are high but not too far out of line compared with previous credit recoveries. Across a range of credit classes, spreads remain above those that prevailed during the last credit expansion of 1992–97 (Figure 2.9). Moreover, adjusting for the unusually low level of current risk-free rates, riskier yields appear attractive when measured as a proportion of the risk-free rate. This comparison is, of course, vulnerable to rising rates.

Global equity markets also staged a strong, broad-based rally in 2003, reversing three years of decline (Figure 2.10). As with the corporate bond market, the rebound in global share prices was largely in response to an improved outlook for corporate earnings and economic growth, progress in strengthening corporate balance sheets in the mature markets, and record low short-term interest rates in the major financial centers that helped to whet investor appetite for risk. Since the start of 2004, most major equity indices have experienced a period of consolidation as investors have shown renewed caution. Technology shares, in particular, have stabilized as investors have appropriately paused to await further signs of improving fundamentals. However, stocks in Japan have continued to rise.

Business earnings, a critical factor in equity valuations, have recovered. In the United States, for example, the operating earnings of firms in the S&P 500 index rose by 17 percent in 2003 from a year earlier. Earnings of U.S. firms in 2003 exceeded their previous peak in 2000, fully recovering from the recession. Earnings in Europe and Japan are recovering

with a delay and remain below prior cyclical peaks.

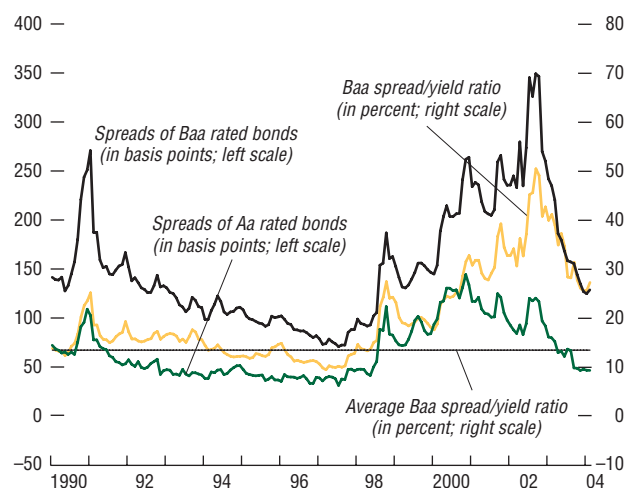
In U.S. markets, aggregate analyst expectations of earnings drifted higher during the course of 2003, in contrast to sharp downward revisions in previous years. In Europe and Japan, earnings forecasts were also revised up strongly in 2003. The improving earnings outlook and strong rally in stock prices contributed to relatively subdued volatility expectations. The implied volatility of options on major equity markets fell over the course of the year (Figure 2.11). Earnings growth is expected to remain robust in 2004 in Europe, Japan, and the United States.

U.S. Dollar Depreciates as Deficits Rise

Markets see the U.S. dollar as facing pressure toward depreciation from a variety of sources. These include the need to sustain an unprecedented level of capital inflows to finance the external current account deficit and the high proportion of official inflows related to currency intervention. Markets do not appear overly concerned that the dollar's decline will either accelerate or have a disruptive impact on other asset markets. Should the expectations underpinning this outlook—notably continued strong foreign official inflows and a rebound in private flows—prove unfounded, the pressure on the dollar will intensify. A decline in demand for U.S. dollar assets could trigger an increase in bond yields.

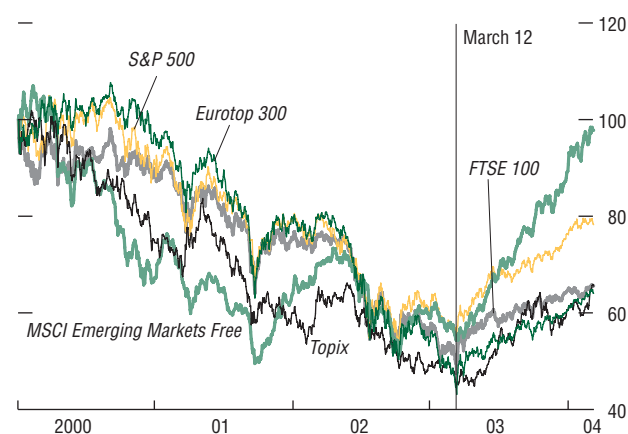
The nominal depreciation of the U.S. dollar versus the other major currencies has been orderly, and options markets suggest that investors are not expecting sharp currency movements. The call for flexibility in last September's Group of Seven (G-7) communiqué caused the volatility implied by option contracts on the yen to rise temporarily (Figures 2.12 and 2.13). The February 2004 G-7 communiqué highlighting the undesirability of excess volatility helped to dampen volatility expectations. Nevertheless, the dollar has continued to decline and the volatility

Figure 2.9. U.S. Corporate Bond Spreads by Rating



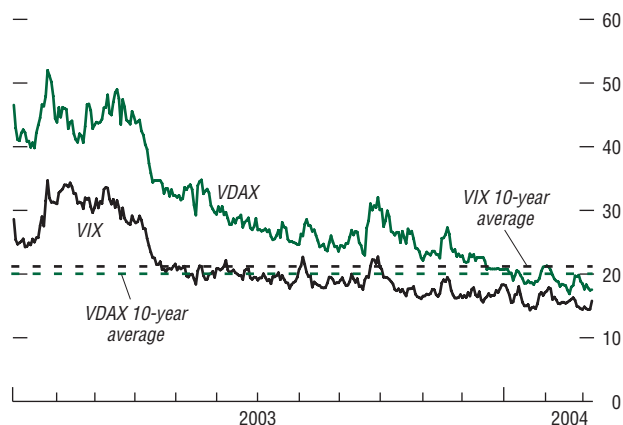
Sources: Lehman Brothers; and IMF staff estimates.

Figure 2.10. Selected Equity Market Performance
(January 1, 2000 = 100)



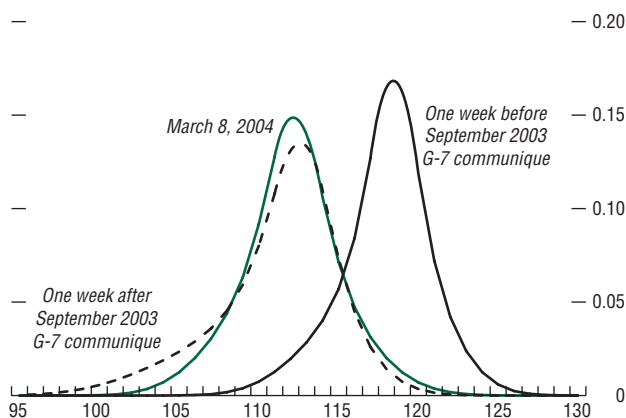
Sources: Bloomberg L.P.; and IMF staff estimates.

Figure 2.11. Implied Equity Market Option Volatility Indices
(In percent)



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

Figure 2.12. Yen Probability Density Function



Sources: Bloomberg L.P.; Reuters, PLC; and IMF staff estimates.

implied on euro option contracts, while well within historical ranges, has risen (Figure 2.14). However, there is no strong directional tilt in the pricing of currency option contracts. The premium that investors are willing to pay for the right to sell dollars, over the equivalent right to buy dollars, has reverted to normal levels for both the euro and the yen.

While most market indicators now suggest a generally sanguine view of future currency movements, a few anomalies have emerged. These reflect market speculation of an eventual revaluation of Asian currencies. A marked rise in forward premiums on the yuan and the Hong Kong dollar in the second half of last year suggested that markets did not rule out a revaluation. Speculative inflows pushed the Hong Kong SAR interbank offered rate (HIBOR) well below LIBOR (Figure 2.15).

Official intervention by Asian central banks has remained strong. Japanese authorities intervened in increasing amounts in 2003 to prevent the yen from strengthening more rapidly. Foreign exchange reserves of the 11 major Asian central banks now approach \$2 trillion, with no sign of a slowing in the trend (Figure 2.16).

Much of the reserves accumulated on account of currency market intervention has been invested in U.S. treasury and agency securities. These investments have helped underpin strong foreign portfolio flows into the United States and contributed to the substantial increase in the share of U.S. treasury and agency bonds held by foreigners (Figure 2.17). Private international investor flows into the U.S. equity and corporate bond markets rebounded with the recovery in U.S. corporate earnings and credit quality. So far, however, a substantial recovery of foreign direct investment into the United States, the dominant source of external financing during 1999–2000, appears unlikely. European corporations—major players in the past U.S. merger and acquisition boom—are not expected to have the interest or wherewithal to invest heavily in U.S. firms, notwithstanding

the recent strengthening of the financial position of European firms.

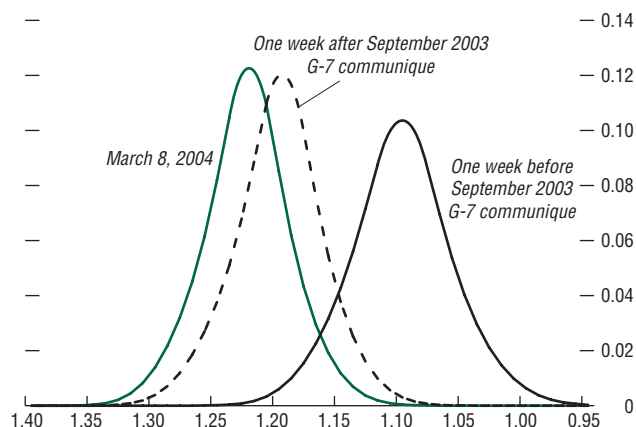
Markets are not expecting a disorderly change in the value of the dollar versus the other G-3 currencies. Asian central banks are expected by the market to continue to intervene to stem the pace of appreciation. However, the effectiveness on market expectations of intervention could decline over time as the sustainability of high levels of intervention is questioned.

The importance of bonds as a destination for foreign inflows has so far been one of the factors helping to anchor longer-term U.S. treasury yields, notwithstanding the strong rebound in U.S. economic growth and the prospect of a substantial increase in U.S. treasury issuance. But the heavy tilt toward bonds in the composition of net foreign inflows carries risks. A spike in bond yields in the United States arising from an increased risk premium on U.S. dollar assets would be problematic given the role of low yields in supporting household consumption and in boosting the valuation of riskier assets. Turbulence in the U.S. treasury market could in particular also spill over to other fixed income markets, widening credit spreads from their current low levels. A rapid decline of the dollar in the context of slowing inflows would undermine the valuation of other assets and potentially contribute to broader market volatility.

Improved Fundamentals and the Quest for Yield Buoy Emerging Market Bonds

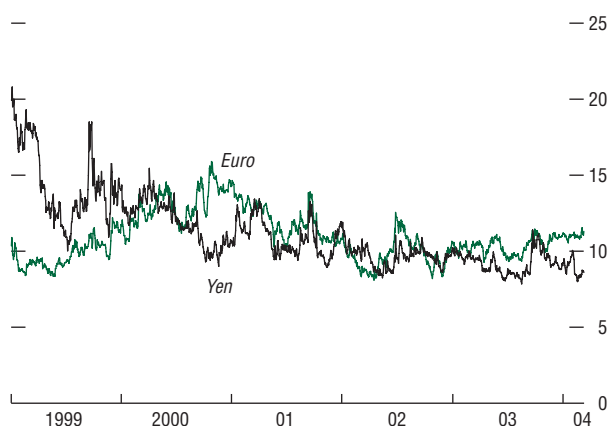
As in the case of mature corporate bond markets, emerging market credit spreads fell precipitously in 2003, with bonds at the low end of the credit risk spectrum leading the charge. The same factors that contributed to the compression of corporate bond spreads—improved fundamentals and the impact of abundant liquidity on investor behavior—underpinned a similarly impressive compression of spreads on emerging market bonds. However, valuations on emerging market

Figure 2.13. Euro Probability Density Function



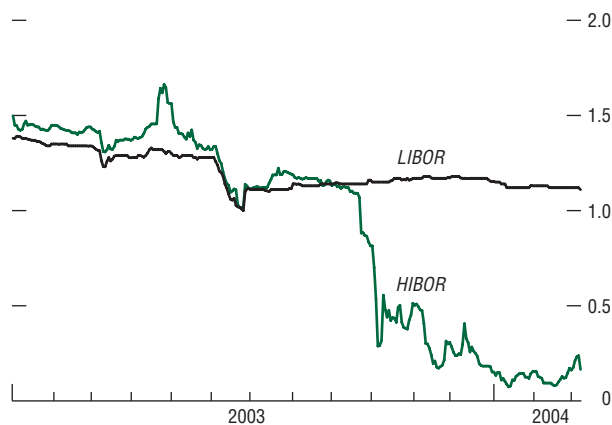
Sources: Bloomberg L.P.; Reuters, PLC; and IMF staff estimates.

Figure 2.14. Currency Volatilities
(In percent versus the U.S. dollar, 3 month)



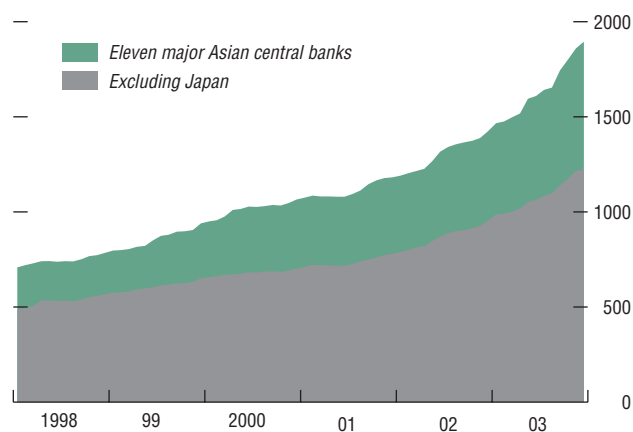
Source: Bloomberg L.P.

Figure 2.15. Hong Kong SAR: HIBOR Versus LIBOR
(In percent)



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

Figure 2.16. Foreign Exchange Reserves of Selected Asian Central Banks
(In billions of U.S. dollars)



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

bonds, especially sub-investment grade bonds, appear vulnerable to an increase in underlying U.S. treasury yields.

Emerging market bonds posted impressive returns in 2003 (Figure 2.18). The highly accommodative monetary stance in the main industrialized countries contributed to a search for yield among investors that encouraged sizable new inflows into the secondary market for emerging market bonds. The inducement of low risk-free rates was complemented by expectations for strengthening fundamentals as a result of improved prospects for global growth, surging commodity prices, fiscal consolidation in some key countries, low inflation, increased foreign reserve holdings, and the earlier shift to floating exchange rates. This combination especially benefited high-yielding credits, whose spreads had been pushed to high levels in the environment of acute risk aversion of 2002. However, in early 2004, following a surge of new issuance, the prospect of a transition to tightening in the United States triggered a moderate correction. Emerging market bond spreads widened significantly in February as investors were reminded of the risk of being over-influenced by low short-term interest rates—instead of fundamentals—when making investment decisions. Moreover, investor discrimination seems to have increased during this period as the spreads on high-yielding Latin American credits widened more than those on lower-yielding Asian bonds.

The compression in emerging market bond spreads was mirrored by declines in implied default probabilities in the credit default swaps market (Figure 2.19).³ The implied

³Credit default swaps are derivative contracts that insure the buyer of protection against the risk of default of a specified reference entity, such as a sovereign borrower. Following a contractually defined “credit event,” the buyer of protection receives a payment intended to compensate for the loss stemming from that event. For a given assumed post-default recovery value, the implied probability of default can be estimated from the current market price of the protection.

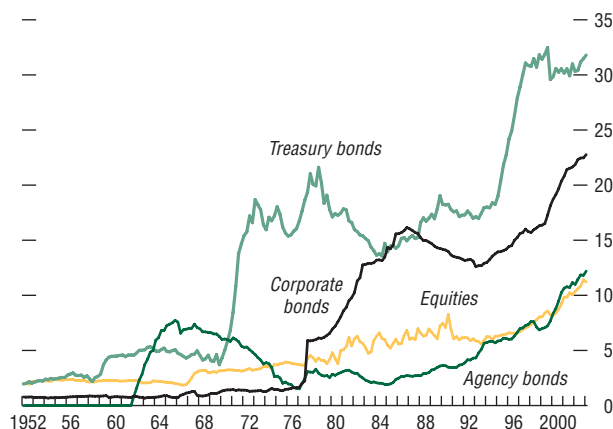
default probabilities peaked in mid-2002, at the height of the Brazilian crisis. However, there were regional differences, with greater volatility in Latin America than elsewhere. Asian default probabilities remained low and stable.

Foreign investor interest in local emerging market investments has also risen. Foreign inflows are motivated in part by the high valuations on external emerging market bonds. In addition, the prospect that emerging equity markets will strongly benefit from resurgent global growth has attracted foreign flows into a number of emerging equity markets and helped underpin the strong rise in emerging market equity prices in 2003. Local bond markets attracted sizable inflows amid improving fundamentals, falling policy rates, and expectations for further currency appreciation in many of the larger markets, including Brazil, South Africa, and Turkey. Indeed, in some countries with debt denominated in or linked to foreign currencies, exchange rate appreciation has contributed at least temporarily to improved debt dynamics. However, financial market volatility increased in Hungary and Poland amid concerns that widening fiscal deficits would overburden monetary and exchange rate policy and potentially delay the adoption of the euro (Box 2.2).

There has been a noticeable improvement in credit quality among emerging market countries over the past several years. In 2003, there were a number of credit rating upgrades, notably Indonesia, Russia, South Africa, and Turkey. Moody's upgrade of Russia to Baa3 in 2003 resulted in over 50 percent of the asset class being investment grade. The credit quality of the EMBI Global—as calculated by the weighted average rating of its constituents—is now well anchored at double B compared with single B+ just two years ago (Figure 2.20).

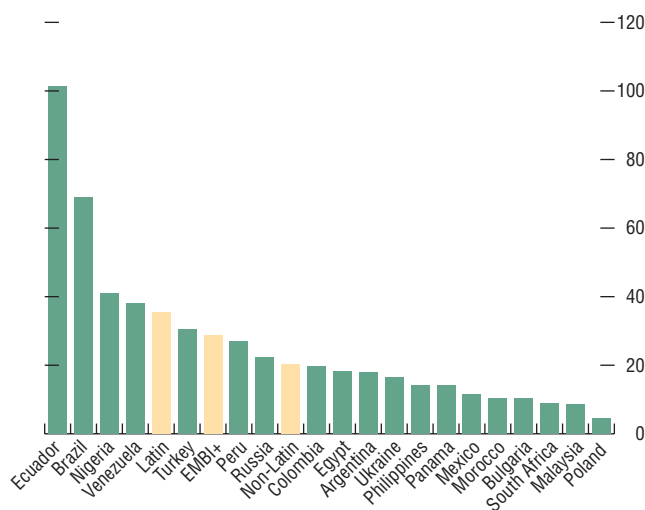
While improved credit quality has undoubtedly contributed to the spread compression observed in 2003, favorable external financing conditions also played a significant role. The

Figure 2.17. Foreign Ownership of U.S. Securities
(In percent of total)



Sources: U.S. Federal Reserve Flow of Funds Accounts; and IMF staff estimates.

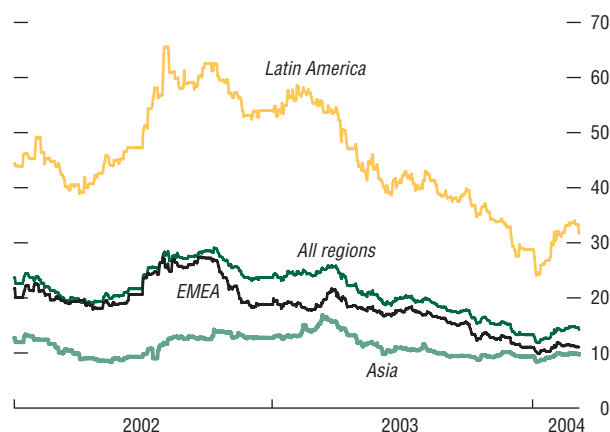
Figure 2.18. Returns During 2003 of the EMBI+ and Select Sub-Indices
(In percent)



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

Figure 2.19. Default Probabilities Implied by Five-Year Credit Default Swap Spreads

(In percent, calculated as an average of 16 emerging market credit default swaps on senior debt and a 40% recovery rate)



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

Figure 2.20. Emerging Market Average Credit Quality



Sources: J.P. Morgan Chase & Co.; Moody's; Standard & Poor's; and IMF staff estimates.

broad-based nature of the rally, reduced discrimination among investors (as measured by the low dispersion of returns among credits), and the increase in cross-correlations among credits for most of last year point to a market being driven more by common factors including liquidity and market technicals, rather than individual country fundamentals (Figures 2.21 and 2.22). Likewise, the strong correlation between global risk indicators and emerging bond market spreads throughout most of 2003 suggests that performance of the latter was closely tied to increased global liquidity and risk appetite. Indeed, research suggests that low short-term interest rates have been a key determinant of emerging bond spreads since 2001 (Appendix I).

The strong emerging market performance of last year—three quarters of which was driven by spread compression with the balance accounted for by coupon payments—is unlikely to be repeated in 2004. The scope for further spread compression from already historically low levels is limited, and an increase in underlying U.S. treasury yields is widely anticipated. As a result, most analysts forecast low single-digit returns for the EMBI+.⁴

The prospect of lower returns in an environment of rising interest rates could deter new inflows, and even prompt a reallocation of assets away from emerging markets. In particular, an unexpected spike in U.S. treasury yields could lead to wider emerging market bond spreads and to a more pronounced reallocation by crossover investors from the asset class. Moreover, a disorderly adjustment in the major currency markets, particularly if accompanied by a spike in yields and volatility in mature debt markets, could raise investor risk aversion and contribute to a widening of spreads on emerging market bonds. Spreads on emerging market bonds at historically low

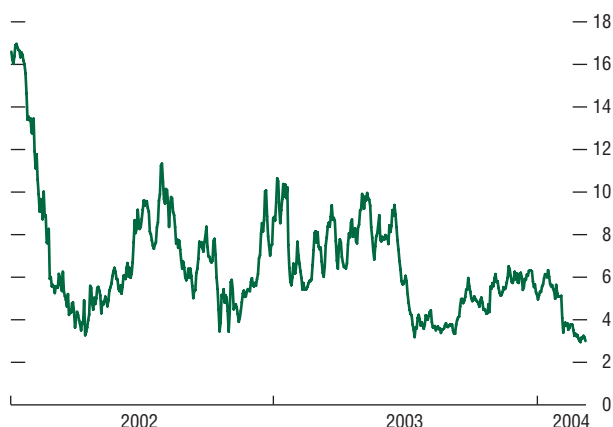
⁴Given a duration of 5½ years on the EMBI+ and a coupon of about 8 percent, a 1 percent increase in U.S. treasury yields would reduce returns to 2½ percent, even if spreads remain unchanged.

levels leave little buffer to absorb adverse developments.

The risks stemming from higher U.S. treasury yields were demonstrated in the summer of 2003 and again in January 2004. During June–August 2003, 10-year U.S. treasury yields rose by almost 150 basis points, triggering a sell-off in emerging bond markets. Spreads, however, were relatively stable. Analysts attributed this stability to the view that valuations remained relatively attractive at that point, and that the sell-off in the U.S. treasury market was largely due to technical considerations—convexity hedging by mortgage agencies—and an easing of deflationary fears, rather than a signal of tightening liquidity conditions. The situation was different in January 2004 when the change in language of the Federal Open Market Committee (FOMC) statement triggered an increase in emerging bond spreads. This spread widening was attributed by some to the partial unwinding of leveraged carry trades. To others, the abrupt widening of emerging market spreads was a reflection of stretched valuations that would be increasingly called into question in a rising interest rate environment. In addition, the record pace of new bond issuance in the first three weeks of January 2004 also temporarily weighed on the market.

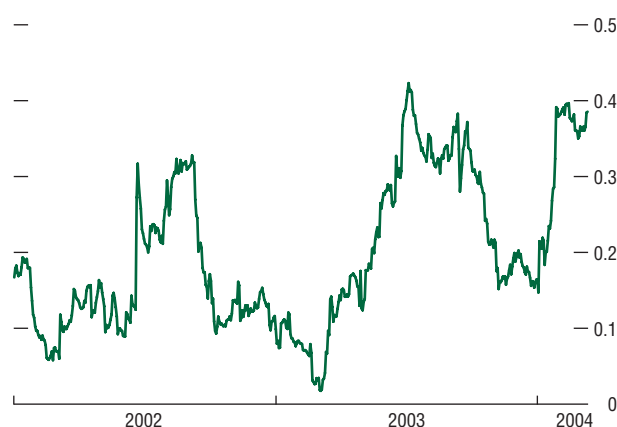
For the present, however, a number of factors mitigate these risks. The global recovery has strengthened and broadened, and global commodity prices have risen strongly. The favorable external financing environment has enabled many countries to prefinance a significant part of their planned issuance. Many countries have also taken advantage of the favorable market conditions to improve their debt profiles by lowering borrowing costs, extending maturities, and reducing the share of debt indexed to short-term interest rates and foreign currencies. While many countries have used the inevitably temporary favorable external financing conditions prudently, others have loosened their fiscal stance and slackened the pace of adjustment. When the

Figure 2.21. Dispersion of Returns Within the EMBI+ (In percent)



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

Figure 2.22. Emerging Market Debt: Average Cross-Correlations



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

Note: Thirty-day moving simple average across all pair-wise return correlations of 20 constituents included in the EMBI Global.

Box 2.2. Bond Market Convergence of EU Accession Countries: Recent Setbacks and Prospects

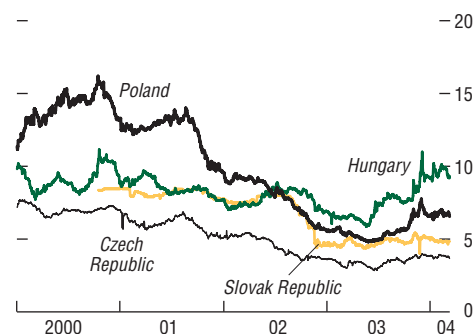
The September 2003 *Global Financial Stability Report* (GFSR) underscored the need for fiscal consolidation in Central Europe to mitigate the risks of exchange rate and interest rate volatility. While prospects of EU accession in May 2004 had spurred a secular broadening of the investor base, the dependence on portfolio inflows to finance large fiscal deficits had risen to unprecedented levels, most notably in Hungary and, to a lesser extent, in Poland. Fiscal laxity overburdened monetary and exchange rate policies in these countries. The June 2003 devaluation in Hungary reinforced concerns over an apparent subordination of inflation targeting to exchange rate considerations. Investor concerns that the timetable for euro adoption might slip—in part on account of warning signals that the Maastricht ceiling on general government debt could be breached in Hungary and Poland—were also emphasized in the September 2003 GFSR. Market developments in late 2003 have highlighted the risks associated with fiscal policy slippages and heavy reliance on foreign investor financing.

Recent Market Setbacks

In Hungary interest rate and exchange rate volatility surged in late 2003. Amid concerns over Hungary's widening twin deficits, foreign investors reduced their holdings of government securities—by an estimated €574 million—during the three-month period ending in November 2003. Faced with heightening pressure on the forint, the National Bank of Hungary raised its policy rate by 300 basis points to 12.5 percent in late November, following a 300 basis point rate hike in June. As a result, the yield of the five-year benchmark bond spiraled up to 11 percent in early December, widening its yield spread over Bunds to more than 700 basis points (see first and second Figures).

At the same time, investor concerns over the sustainability of fiscal policies in Poland rose. The widening of the general government deficit envisaged under the 2004 budget draft was widely seen as an indication that substantial fis-

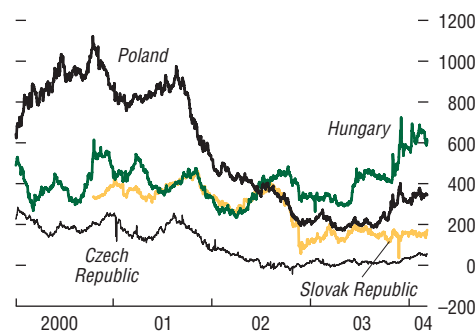
Five-Year Sovereign Benchmark Yields
(In percent)



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

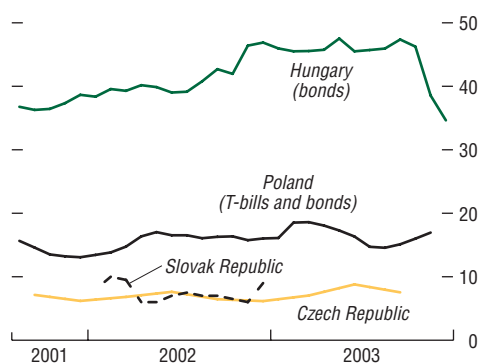
cal reforms were unlikely ahead of Poland's parliamentary elections scheduled for 2005. Against this background, the yield spread of five-year benchmark bonds over Bunds widened substantially, temporarily reaching 400 basis points at the end of November 2003. Continuing the slide that began in mid-2001, the zloty depreciated to a new low of 4.80 zlotys per euro at the end of January 2004. Besides uncertainties about fiscal policy, investors attributed zloty weakness in part

Five-Year Sovereign Spreads Over Benchmarks
(In basis points)



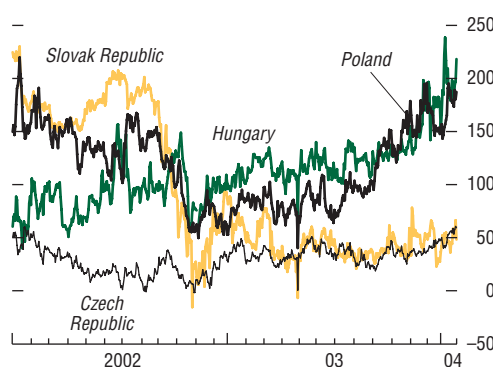
Sources: Bloomberg L.P.; and IMF staff estimates.

Foreign Ownership of Government Securities (In percent)



Sources: National authorities; and IMF staff estimates.

Forward Spreads (In basis points, 5x5 year over euro rates)



Sources: Commerzbank; and IMF staff estimates.

to the perceived uncertainties over the course of monetary policy, following the appointment of a new monetary policy council in January.

The deteriorating investor sentiment toward Hungary and Poland, however, had only negligible repercussions for local markets in the Czech Republic and Slovak Republic. Fiscal reform measures aimed at almost halving their respective consolidated budget deficits by 2006—to 4 percent of GDP in the Czech Republic and 3 percent of GDP in the Slovak Republic—helped shelter these markets from the pressure experienced in the larger markets in Central Europe. The risk of a spillover was further mitigated by the relatively small foreign ownership of securities issued by the government of these countries (see the third Figure). Consequently, yield spreads over Bunds widened only marginally during 2003.

Policy Responses

Following substantial budget overruns in 2003, Hungary introduced further measures to reduce its fiscal deficit in January 2004. Earlier budget cuts—announced in June and December 2003—had proven insufficient to restore investor confidence. At the same time, the National Bank of Hungary abandoned its

focus on a narrow exchange rate fluctuation band and avoided any mention of explicit exchange rate targets. This was widely seen as an attempt to assuage investor concerns that inflation targeting had been subordinated to exchange rate considerations.

Measures to curtail Poland's widening budget deficit were adopted by the government in January 2004. As part of a medium-term fiscal strategy, the government agreed on expenditure cuts equivalent to almost 3 percent of GDP (29.4 billion zlotys) over the period of 2004–07. The minority government still needs to secure parliamentary approval of the necessary legislation. Recognizing the policy challenges lying ahead, the government extended its target for meeting the Maastricht criteria by two years to 2008–09, implying euro adoption in 2010 at the earliest.

Vulnerabilities and Market Outlook

Notwithstanding these initiatives, domestic government financing costs remained elevated in both Hungary and Poland in early 2004. Hungary's yield spread over Bunds was near a four-year high at the end of January, while that in Poland was near a two-year high. Investors emphasized that meeting the tightened fiscal targets was essential to mitigating the risk that

Box 2.2 (concluded)

foreign holdings of local securities could once more become a catalyst for interest rate and exchange rate volatility.

Forward markets underscored the risks of further slippages, while differentiating Hungary and Poland from the Czech Republic and the Slovak Republic. Five-year forward interest rates for Hungary and Poland have risen steadily, reaching about 200 basis points over comparable forward rates for the euro area by end-January, 2004 (see the fourth Figure). The elevated spread over forward rates in the euro area was widely seen as an indication that euro

membership was expected to be delayed beyond 2009 in the case of Hungary and Poland. In contrast, forward markets implied a high probability of euro area entry by the Czech Republic and Slovak Republic in five years' time.¹

¹Assuming a spread of 20 basis points over euro area rates upon euro area entry, forward rates at the end of January 2004 implied a probability of euro area entry by January 2009 of 88 percent for the Czech Republic; 30 percent for Hungary; 41 percent for Poland; and 92 percent for the Slovak Republic.

external financing environment becomes less favorable, underlying vulnerabilities veiled by the earlier ready access to financing are likely to become more apparent.

Surge in Issuance by Emerging Markets Meets Strong Investor Demand

Emerging market borrowers are benefiting from a very favorable external financing environment. Notwithstanding a marked increase in issuance levels, investor appetite still appears strong and the terms for new financing remain relatively attractive to borrowers. Gross financing raised by emerging markets in international capital markets rose in 2003 (Table 2.1 and Figure 2.23). Equity placements, which were facilitated by the strong rally in emerging stock markets, exceeded the levels of the previous two years by a wide margin. Bond issuance was also robust. Following the rebound in issuance in 2003 and the flurry of issues in January 2004, it is estimated that about 40 percent of emerging market sovereign bond issuance plans for 2004 had already been fulfilled. Syndicated loan commitments have been buoyed by a spate of deals in Europe, the Middle East, and Africa (EMEA), reflecting an uptick in corporate borrowing in Russia and lending in the Gulf.

Despite sizable amortizations in the bond and loan markets, net issuance levels recovered in 2003 (Figure 2.24). Net bond issuance, which was negligible in 2002, rebounded. Net flows associated with syndicated loans, which were negative in 2001 and 2002, also turned positive. In early 2004, issuance in the emerging bond and equity markets remained buoyant, and the near-term pipelines looked promising.

Bond Issuance

Bond issuance in 2003 exceeded levels witnessed over the last six years. After a slowdown in issuance during the summer owing to the spike in U.S. treasury yields, issuance was particularly heavy toward the end of the year and in early 2004 (Figure 2.25). Issuance was spurred by low yields and strong investor demand as borrowers sought to lock in low rates and extend maturities. Net issuance in 2003 (\$35.3 billion), although significantly higher than 2002, was moderated by sizable amortization payments, however.

Among sovereigns, the increase in sub-investment grade issuance was noteworthy as it reflected the quest for yield that dominated yield spread developments in the secondary market. Sub-investment grade offerings were

Table 2.1. Emerging Market Financing

	2000	2001	2002	2003	2002				2003				2004				Year-to-date ¹
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Oct.	Nov.	Dec.	Jan.	Feb.
<i>(In billions of U.S. dollars)</i>																	
Gross issuance by asset	216.4	162.1	135.6	195.2	37.0	32.9	32.1	33.6	34.9	45.3	52.9	62.0	24.9	13.7	23.4	22.8	8.1
Bonds	80.5	89.0	61.6	97.1	22.2	15.9	8.8	14.7	20.1	27.6	26.3	23.1	14.8	6.0	2.3	16.3	5.7
Equities	41.8	11.2	16.4	28.0	4.1	4.3	3.8	4.1	1.2	2.0	7.1	17.7	5.2	3.5	9.0	4.0	1.4
Loans	94.2	61.9	57.6	70.0	10.7	12.7	19.5	14.8	13.6	15.7	19.5	21.2	4.9	4.2	12.1	2.6	1.0
Gross issuance by region	216.4	162.1	135.6	195.2	37.0	32.9	32.1	33.6	34.9	45.3	52.9	62.0	24.9	13.7	23.4	22.8	8.1
Asia	85.9	67.5	53.9	81.8	13.3	11.9	14.1	14.6	12.9	15.5	22.9	30.5	13.7	5.4	11.4	7.0	5.6
Latin America	69.1	53.9	33.4	42.4	11.9	8.3	6.1	7.1	7.8	11.7	9.1	13.8	6.0	3.7	4.1	7.6	0.6
Europe, Middle East, Africa	61.4	40.8	48.3	71.0	11.9	12.7	11.9	11.8	14.3	18.1	21.0	17.7	5.1	4.6	7.9	8.2	2.0
Amortization by asset	114.3	148.0	129.3	124.2	27.5	35.6	31.1	35.1	22.1	34.3	29.6	38.2	9.1	10.5	18.6	9.2	10.5
Bonds	52.2	60.0	59.8	61.8	12.6	18.0	14.5	14.7	10.5	17.5	15.6	18.2	3.4	5.6	9.2	5.1	8.1
Loans	62.1	88.0	69.5	62.4	14.8	17.6	16.6	20.4	11.6	16.8	14.0	20.0	5.7	4.9	9.5	4.1	2.5
Amortization by region	114.3	148.0	129.3	124.2	27.5	35.6	31.1	35.1	22.1	34.3	29.6	38.2	9.1	10.5	18.6	9.2	10.5
Asia	57.1	66.5	56.2	49.4	12.3	14.9	13.7	15.3	8.3	12.0	14.5	14.7	2.6	3.8	8.2	6.0	4.4
Latin America	32.3	45.9	41.2	40.8	8.3	11.5	10.5	10.9	7.6	10.1	8.0	15.1	4.4	3.4	7.3	1.2	4.6
Europe, Middle East, Africa	24.9	35.5	31.9	33.9	6.9	9.2	6.9	8.9	6.2	12.2	7.1	8.4	2.1	3.2	3.1	2.0	1.6
Net issuance by asset	102.2	14.2	6.4	71.0	9.6	-2.7	1.0	-1.5	12.9	11.0	23.3	23.8	15.7	3.3	4.8	-9.2	12.3
Bonds	28.3	29.1	1.8	35.3	9.6	-2.1	-5.7	0.0	9.6	10.1	10.7	4.9	11.4	0.4	-6.8	-5.1	8.2
Equities	41.8	11.2	16.4	28.0	4.1	4.3	3.8	4.1	1.2	2.0	7.1	17.7	5.2	3.5	9.0	0.0	4.0
Loans	32.1	-26.1	-11.8	7.6	-4.1	-5.0	2.9	-5.6	2.0	-1.1	5.5	1.1	-0.9	-0.6	2.6	-4.1	0.1
Net issuance by region	102.2	14.2	6.4	71.0	9.6	-2.7	1.0	-1.5	12.9	11.0	23.3	23.8	15.7	3.3	4.8	-9.2	12.3
Asia	28.8	0.9	-2.3	32.4	1.0	-3.0	0.4	-0.7	4.6	3.6	8.4	15.8	11.1	1.5	3.2	-6.0	2.7
Latin America	36.9	7.9	-7.8	1.5	3.6	-3.2	-4.4	-3.8	0.2	1.6	1.0	-1.3	1.6	0.3	-3.2	-1.2	3.0
Europe, Middle East, Africa	36.5	5.3	16.4	37.1	5.0	3.5	5.0	3.0	8.1	5.9	13.9	9.2	3.0	1.4	4.8	-2.0	6.6
Secondary Markets																	
Bonds																	
EMBI+ (spread in basis points) ²	756	731	765	418	598	799	903	765	671	547	506	418	470	455	418	432	445
Merrill Lynch High Yield (spread in basis points)	871	734	802	368	623	809	890	802	696.1	554	482.6	368	415	401	368	360	381
Salomon Broad inv. Grade (spread in basis points)	89	78	62	45	69	73	75	62	55	51	57	45	50	48	45	44	43
U.S. 10 yr. Treasury yield (yield in percent)	5.12	5.051	3.816	4.248	5.396	4.799	3.596	3.816	3.798	3.515	3.939	4.248	4.295	4.334	4.248	4.134	3.973
<i>(In percent)</i>																	
Equity																	
Dow	-6.2	-7.1	-16.8	25.3	3.8	-11.2	-17.9	9.9	-4.2	12.4	3.2	12.7	5.7	-0.2	6.9	0.3	-3.1
Nasdaq	-39.3	-21.1	-31.5	50.0	-5.4	-20.7	-19.9	13.9	0.4	21.0	10.1	12.1	8.1	1.5	2.2	3.1	-0.1
MSCI Emerging Markets Free	-31.8	-4.9	-8.0	51.6	10.7	-9.0	-16.8	9.8	-6.8	22.2	13.5	17.3	8.3	1.0	7.1	3.3	0.0
Asia	-42.5	4.2	-6.2	47.1	14.9	-6.3	-17.0	4.9	-9.3	21.4	14.9	16.3	10.1	-1.5	7.2	4.9	-0.3
Latin America	-18.4	-4.3	-24.8	67.1	7.1	-22.0	-24.7	19.6	-0.9	22.6	12.4	22.4	7.3	3.1	10.6	0.5	-0.1
Europe/Middle East	-23.4	-17.7	-9.1	62.7	0.2	-11.0	-6.5	9.1	-1.4	35.2	9.3	11.7	1.0	2.2	8.2	4.6	-0.7

Sources: Bloomberg L.P.; Capital Data; J.P. Morgan Chase & Co.; Morgan Stanley Capital International; Salomon Smith Barney; and IMF staff estimates.

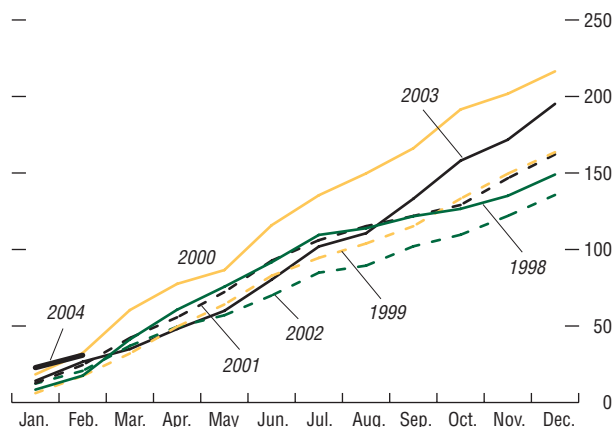
¹Issuance data (net of U.S. trust facility issuance) are as of February 17, 2004 close-of-business London and secondary markets data are as of March 8, 2004, c.o.b. New York.²On April 14, 2000 the EMBI+ was adjusted for the London Club agreement for Russia. This resulted in a one-off (131 basis point) decline in average measured spreads.

heavily oversubscribed and many were upsized, indicating strong investor demand. The market was also supported by strong cash flows of coupon and amortization payments, which increased the supply of funds available for

reinvestment. By October, sovereigns, including Mexico, Brazil, and Poland, started to pre-finance some of their 2004 funding needs.

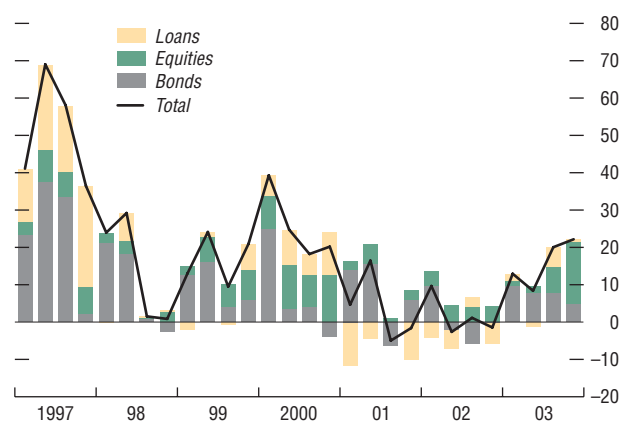
Liability management was also an important feature in 2003. Many countries took advan-

Figure 2.23. Cumulative Gross Annual Issuance of Bonds, Loans, and Equity
(In billions of U.S. dollars)



Source: Capital Data.
Note: 2004 data as of February 17.

Figure 2.24. Quarterly Net Issuance
(In billions of U.S. dollars)



Sources: Capital Data; and IMF staff estimates.

tage of the favorable external financing environment to improve the maturity profile of their debt and to release collateral. Mexico retired all its Brady bonds in an exchange. Panama, Poland, the Philippines, and Venezuela bought back some of their Brady bonds. On the domestic front, liability management activities included measures to address potentially volatile debt structures arising from short maturities and indexation to short-term interest rates and foreign currencies (Box 2.3).

Investor appetite also accommodated the issuance on a small scale of international bonds denominated in local currency. Uruguay issued 5.6 billion pesos of three-year inflation-linked bonds under New York law in October, its first foray into international bond markets since its 2002 debt exchange. While the issue was noteworthy given its currency denomination, the size of the issue was small, and secondary market liquidity quite limited as most investors appear to plan to hold the issue to maturity. Most investors were attracted to the deal by the prospect of a real appreciation of the peso. Others saw the opportunity to lock in relatively high real yields while the indexation to inflation would hedge out at least part of the accompanying currency risk. There appears to be some scope to increase the issuance of local currency debt internationally, and some large institutional investors have expressed a willingness to invest in such paper.

Corporate bond issuance rebounded in 2003, supported by an increase in global risk appetite and a search for yield as bond yields declined and spreads compressed across credit products (Figure 2.26). Latin American corporate issues were up nearly 150 percent from 2002, amid a plethora of deals from Mexico and Brazil. In Brazil, banks were the first to tap international markets, arbitraging between onshore and offshore rates, while nonfinancial corporates soon followed as investor sentiment turned unambiguously positive. Corporate issuance in EMEA was strong

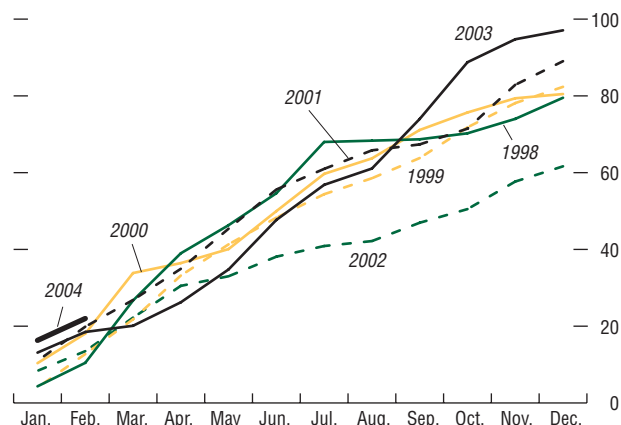
in early 2003, with Russian issuers particularly prominent, but supply tailed off in the latter part of the year in the aftermath of the corporate investigations starting in the summer. Issuance by Asian corporates gathered pace through the year as SARS-related concerns dissipated.

Dollar-denominated issuance picked up during the course of 2003. In the first half of 2003, over 25 percent of total issuance was euro-denominated, as the European investor base made its comeback after an 18-month absence following the Argentine default. However, amid an easing in access, cost considerations dominated funding decisions, so that the share of dollar-denominated issuance rose from to 87 percent in the second half of the year from roughly 70 percent in the first half.

Another salient development in 2003 was confirmation that the inclusion of collective action clauses (CACs) has developed into an industry standard for bonds issued under New York law. Investment grade credits blazed the trail at the outset of the year, followed by the sub-investment grade credits (Box 2.4). An exception, however, was the \$1 billion global bond issued in October by China.

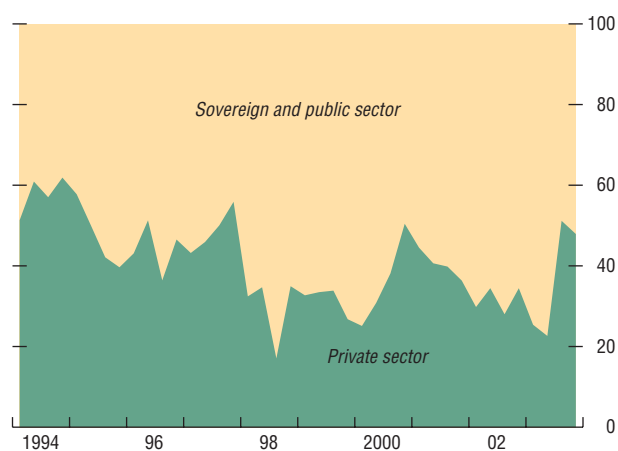
January 2004 witnessed a burst of activity in the primary debt market, following December's lull. Issuers rushed to market to take advantage of low borrowing costs and strong investor appetite. Inflows into the asset class by both institutional and retail investors were also supportive. The total volume of debt, the total number of issuers, and the weighted average maturity of issuance in January were all significantly higher than in previous years. On the sovereign side, Brazil, Turkey, and Venezuela came to market with 30-year deals. The long average maturities are particularly impressive given the number of corporate deals. Notably, two Brazilian corporates successfully sold 10-year paper, while one-third issued into the 30-year sector. More recently, however, the market has showed some signs of indigestion, exacerbated by the

Figure 2.25. Cumulative Gross Annual Issuance of Bonds
(In billions of U.S. dollars)



Source: Capital Data.
Note: 2004 data as of February 17.

Figure 2.26. Share of Bond Issues
(In percent)



Source: Capital Data.

Box 2.3. Emerging Market Borrowers Improve Debt Structures: Case Studies

Past issues of the *Global Financial Stability Report* (GFSR) have highlighted the importance for emerging market borrowers of taking advantage of a favorable financing environment to improve the structure of their domestic and external obligations and to deepen local bond markets. Such measures are particularly important in countries with potentially volatile debt structures. Debt structures with short average maturities or a high share of outstanding debt linked to short-term interest rates or foreign currencies can be particularly problematic. Even countries with relatively stable debt structures have taken steps to deepen domestic financial markets and achieve a better debt profile. To illustrate these benefits, this box reviews the liability management operations of two large emerging market borrowers—Mexico and Brazil. Mexico, an investment grade credit, and Brazil, whose credit rating is sub-investment grade, have each taken steps to improve the profile of both their domestic and external debt while deepening their domestic bond markets.

Mexico: Recent Liability Management Operations

In an effort to reduce debt-service costs and to improve the financial conditions of future borrowing, Mexico undertook several liability management operations in 2003. These efforts have focused on prepaying debt obtained under less favorable market conditions, broadening its investor base, and diversifying its external financing sources. Since February 2003, the authorities have included collective action clauses in all dollar-denominated bonds issued under New York law.

In April 2003, Mexico prepaid \$3.8 billion of outstanding dollar-denominated Brady Par Bonds, with maturity in December 2019. The bonds contained a call provision that gave Mexico the right to retire the bonds, and were guaranteed with principal and interest collateral. The resources to finance the operation were obtained from the federal government's liquidity position and from a one-year credit facility of \$2 billion. Official estimates indicate the prepayment resulted in an external debt

reduction of \$1.8 billion, generated an estimated net present savings of \$327 million, and led to the release of collateral of \$1.9 billion.

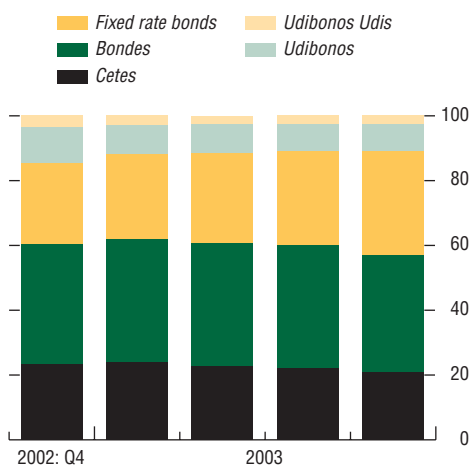
In June 2003, Mexico prepaid its remaining Brady Par Bonds denominated in Dutch guilders, German marks, Italian lira, and Swiss francs, which amounted to \$1.3 billion. The bonds contained a call provision that gave Mexico the right to retire the bonds, and had an original expiration date of December 2019. The resources to finance the prepayment were obtained from the federal government's liquidity position. Official estimates suggest that the operation led to an external debt reduction of \$1.3 billion, generated net present savings of \$283 million, and led to the release of collateral of approximately \$694 million.

After the buyback of the Brady Bonds, Mexico took steps to extend its investor base. On January 6, 2004, Mexico issued a \$1 billion Global Floating Rate Note (FRN) with a five-year maturity, Mexico's first ever FRN. The bond has a floating interest rate in dollars of the three-month LIBOR rate plus 70 basis points. At the current level of LIBOR rates, the annualized financing cost of Mexico is 1.85 percent. The transaction put Mexico in touch with a new buyer base at a competitive cost, as 25 percent of the FRN was purchased by high-grade pension and bank funds and others that were not previously part of Mexico's traditional investor base.

Domestic debt management has aimed at increasing the average maturity of government debt, reducing refinancing risks for the federal government, and promoting the development of capital markets. During 2003, the stock of long-term fixed rate bonds with maturities between three and ten years increased significantly to around 50 percent of the outstanding stock in December 2003, while the stock of inflation-linked bonds decreased to around 10 percent (see first Figure). The amount auctioned of the 28-day Cetes was reduced, offset by increases in 91- and 182-day Cetes.

Favorable market conditions and increased investor confidence allowed Mexico to intro-

Mexico: Government Securities by Type (In percent, outstanding at end of period)



Source: Secretaria de Hacienda y Credito Publico.

duce a new 20-year fixed-rate bond in October 2003. The bond should provide a long-dated government benchmark that facilitates the extension of corporate bond maturities in the local market. The increase in the auctioned amounts of long-term bonds and reduction in the amounts of shorter-term bonds should help increase liquidity in the secondary market and complement other recent efforts in this regard, including measures to improve the market-maker program, change the auction schedule, and reopen outstanding issues in primary auctions.

Brazil: Recent Liability Management Operations

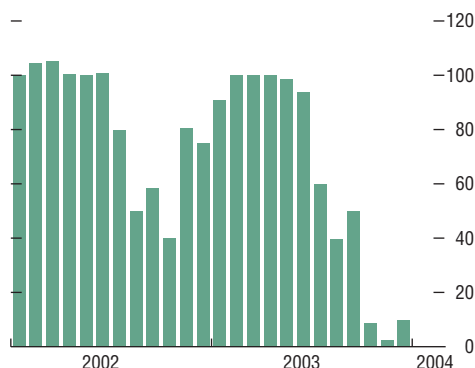
After a 12-month hiatus, Brazil returned to international debt markets with a five-year \$1 billion global bond in late April 2003 followed by a ten-year \$1.25 billion global bond in June. The new bonds contained CACs, with a 85 percent threshold in the majority restructuring provision. All subsequent external issuance has contained similar provisions.

Brazil raised over \$600 million through a debt swap augmented with new issuance at the

end of July. The Republic offered bondholders to swap existing Par and Discount Bradies and the benchmark C-bond, for new sovereign debt maturing in 2011 and 2024. Nearly \$1.3 billion of principal was exchanged, releasing approximately \$490 million in collateral. Furthermore, \$123 million was subsequently added in new issuance to the Global '11 for improved liquidity and additional financing, bringing the total issue size to \$500 million. However, Brazil did not accept any offers for the C-bond as bondholders were unwilling to exchange out of the liquid benchmark bond for a longer-dated maturity during a period when U.S. treasury rates were under pressure. The exchange was essentially market-value neutral for bondholders.

Brazil completed external issuance for October 2003 and began pre-financing for 2004 with a \$1.5 billion global bond with maturity in 2010. This brought total external issuance to \$4.4 billion for the year or \$3.9 billion, excluding the principal unlocked from the Brady swap. The favorable external environment continued into 2004 as Brazil was able to tap external debt markets in January with a 30-year \$1.5 billion global bond at only 377 basis points above comparable U.S. treasuries.

In domestic markets, Brazil has made significant strides in reducing the amount of U.S. dollar-linked domestic debt while gradually improving the maturity profile. After rolling over 100 percent of principal on foreign exchange-linked debt during the first half of 2003, Brazil announced a policy to reduce the rollover rate beginning in June. The rollover rate fell quickly to 60 percent in July and has remained below 10 percent since October, allowing the withdrawal of some \$6 billion in maturing principal as of end-January 2004 (see second Figure). As a result of this policy, and the steady appreciation of the currency throughout the year, the share of foreign exchange-linked debt (including foreign exchange swaps) in total domestic public sector debt has fallen from 37 percent in December 2002 to 22 percent at the end of 2003. The

Box 2.3 (concluded)**Rollover Rate of U.S. Dollar-Indexed Federal Domestic Debt, Including Swaps**
(In percent of total principal coming due)

Source: Central Bank of Brazil.

withdrawal of foreign exchange-linked domestic debt has been primarily replaced by fixed-rate nominal coupon debt and inflation-indexed debt.

The maturity profile of domestic debt improved as Brazil sought to gradually lengthen

the maturity of newly issued debt while simultaneously increasing average size and addressing gaps in the domestic yield curve. The average maturity of newly issued debt increased from a low of one year during the peak of market uncertainty in September of 2002 to three years in December 2003. As a result, the share of domestic debt maturing in the ensuing 12 months fell from 41 to 33 percent.

Brazil has also sought to strengthen domestic liability management practices by implementing new arrangements for primary and secondary dealers and expanding the domestic investor base. The aim of the new primary and secondary arrangements is to increase both liquidity and competition in domestic debt markets. The new arrangements will be bolstered by a new electronic trading platform on the Brazilian Mercantile and Futures Exchange in early 2004. The domestic investor base was expanded in late 2003 through the introduction of a Treasury Direct system, which allows direct access by individual accounts to Treasury auctions of domestic debt. Investor participation through this program has increased nearly fourfold since its introduction.

January 28 FOMC statement that temporarily reduced investor demand. Issuance slowed in February. However, almost 40 percent of expected sovereign issuance for 2004 had been completed by the end of January.

Equity Issuance

The surge in emerging market equity prices since April has triggered a sharp pickup in primary market activity, with the fourth quarter of 2003 far surpassing levels recorded prior to the bursting of the high-tech bubble (Figure 2.27). The distribution of issuance across regions differed starkly. After lying dormant for the better part of the year, Asia's equity market erupted with new stock issues from a wide array of companies in the final

months of the year. Firms in China and Hong Kong SAR were particularly active, issuing \$8 billion in the fourth quarter. The China Life IPO was noteworthy. At \$3.46 billion, it was the largest IPO worldwide for 2003 and was 25 times oversubscribed. In Southeast Asia, Indonesian issuers were active, with stakes sold in Bank Mandiri, Bank Rakyat Indonesia, and PGN. Thailand's government successfully divested stakes in Krung Thai Bank and Thai Airways. By contrast, issuance in Latin America remained low, notwithstanding \$540 million in issuance by Mexico's Cemex. New equity issuance was also limited in EMEA, where activity was dominated by the Central European telecom sector and a \$300 million American Depositary Receipt (ADR) issue by Russia's Norilsk Nickel. Amid ongoing inflows

by international equity investors, there is no sign of the deal flow drying up. In particular, issuance by Asian companies continued at a fast pace in the first few weeks of the year, and several large deals are in the pipeline for the remainder of the year.

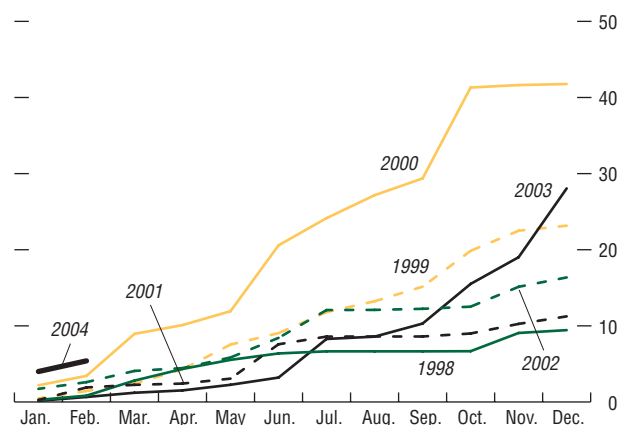
Syndicated Lending

Gross bank lending to emerging markets in 2003 exceeded levels of the previous two years. Net syndicated lending to the emerging markets was positive in 2003, marking a turnaround from the net contraction of the last two years (Figure 2.28). Amid ample global liquidity, borrowers eagerly refinanced, while international banks' appeared especially prepared to lend to Central and Eastern European borrowers and to the Middle East. Russian corporates were prominent borrowers in the fourth quarter, with a wide array of corporate facilities arranged on attractive terms prior to the unfolding of developments at Yukos. Market participants, however, reported that the extremely fine margins on some of the Central European credits, largely reflecting the abundance of liquidity in local markets, drove some of the international banks further afield. Gulf states benefited from increased risk appetite by international banks, manifested in a rise in both project financing and lending to financial institutions. Latin America witnessed a pickup in loan volumes, primarily due to Mexican corporates.

Foreign Direct Investment

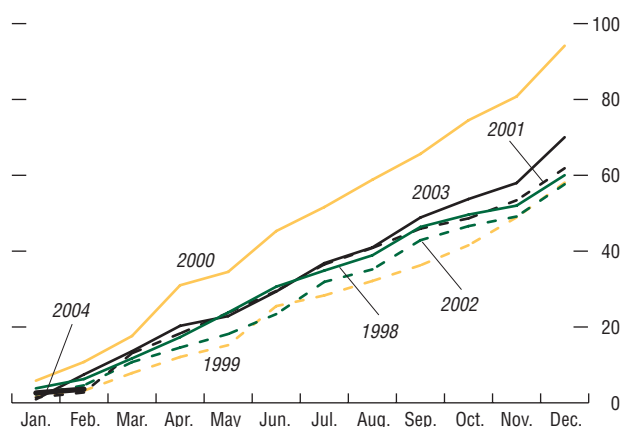
The declining trend in total private external financing for emerging market countries that had been in place since 1997 was reversed in 2003 (Figure 2.29). Foreign direct investment (FDI) to emerging market countries has been more resilient but has also declined in recent years, owing in large part to a sharp reduction in flows to Latin America and reduced privatizations of state-owned assets in the service sector. Nevertheless, FDI has remained the most

Figure 2.27. Cumulative Gross Annual Issuance of Equity
(In billions of U.S. dollars)



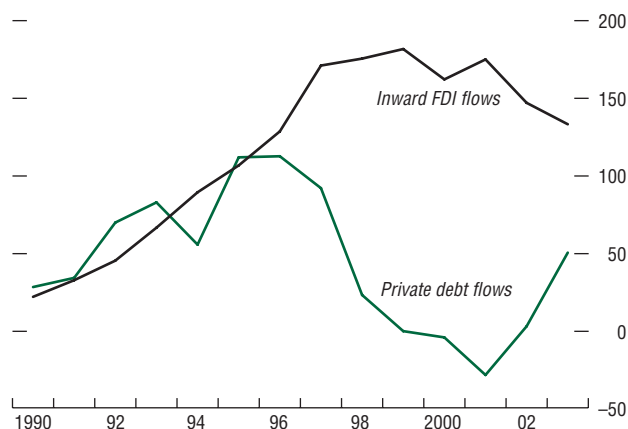
Source: Capital Data.
Note: 2004 data as of February 17.

Figure 2.28. Cumulative Gross Annual Issuance of Loans
(In billions of U.S. dollars)



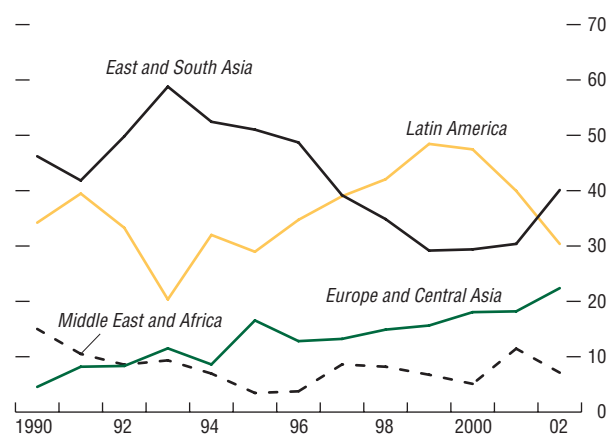
Source: Capital Data.
Note: 2004 data as of February 17.

Figure 2.29. Private Flows to Emerging Market Economies
(In billions of U.S. dollars)



Source: World Bank, *Global Development Finance*, 2004.

Figure 2.30. Geographic Distribution of FDI Flows
(In percent of total)



Source: World Bank, *Global Development Finance*, 2004.

important net source of private external capital for all regions.

Preliminary information indicates that FDI flows to emerging market countries continued to fall in 2003. However, the decline was smaller than in the previous year and largely reflected reduced FDI in Brazil and the EU accession countries. The outlook for FDI is expected to improve in 2004 with the strengthening growth prospects of the global economy.

In Latin America, FDI flows fell in 2003 by less than in the previous year with declines in Brazil (43 percent) and Mexico (15 percent) largely accounting for the regional drop (Figure 2.30). The decline in Brazil reflects, in part, the winding down of large-scale privatization in the telecommunication and energy sectors. FDI to Chile increased by over \$1 billion reflecting the country's ongoing economic recovery and strong institutional base. FDI in Argentina appears to have stabilized at very low levels.

Asia increased its dominance as the main recipient of FDI to emerging market countries, with aggregate inflows increasing for the third year in a row. FDI to China continued to increase and now represents 86 percent of total FDI to emerging market countries in Asia. Elsewhere in Asia, FDI also increased in India (reflecting the easing of foreign investment restrictions in the automobile, private banking, and telecommunications sectors) and Thailand.

FDI flows to emerging Europe declined in 2003 reflecting a 50 percent decline to the EU accession countries (Czech Republic, Hungary, Poland, and Slovak Republic). FDI rose in Russia by almost 100 percent, mainly to the oil sector.

Results from a recently completed survey conducted by a working group of the Capital Markets Consultative Group (see CMCG, 2003) emphasized the importance of regional economic, structural, and institutional factors in influencing FDI prospects. The direct investors participating in that working group

Box 2.4. Collective Action Clauses: Update on Market Practice

An increasing number of emerging market countries have included collective action clauses (CACs) in their international sovereign bonds issued under New York law, where these clauses had not previously been the market standard. During the latter part of 2003 and early 2004, sovereign issues containing CACs grew to represent more than 70 percent of total volumes issued (see the Table).

In September 2003, Turkey included CACs in its bonds governed by New York law, followed shortly by Peru. These were the first two sub-investment grade countries that issued New York law bonds with CACs that included a voting threshold of 75 percent of outstanding principal for majority restructuring clauses. This represented a change in market practice with respect to previous non-investment grade issuers that had included higher voting thresholds (e.g., 85 percent in the case of Belize, Brazil, and Guatemala). Both issues were priced very tightly along the yield curve and there was no evidence of a yield premium as a result of the lower voting threshold.

In the latter part of 2003 and early 2004, Chile, Colombia, Costa Rica, Panama, the Philippines, Poland, and Venezuela also issued global bonds governed by New York law that included CACs. All issues were heavily oversubscribed and priced broadly along the yield

curve.¹ With respect to majority restructuring provisions, recent New York law bonds differ on the voting threshold for amending key terms. Chile, Colombia, Italy, Mexico, Panama, Peru, Poland, and Turkey used a 75 percent voting threshold while the issuances of Brazil and Venezuela relied upon a 85 percent voting threshold. Regarding majority enforcement provisions, all of the recent bond issues governed by New York law except Poland used a 25 percent threshold for acceleration.² However, they differ on the threshold for de-acceleration: in the case of Chile, Colombia, Mexico, Peru, and Venezuela, the threshold is set at more than 50 percent of outstanding principal while the issuances by Brazil, Italy, Panama, and Turkey included a 66⅔ percent threshold for de-acceleration. All recent bond issues used a fiscal agency structure. In general, there was no evidence that the issue prices

¹In the sole case of Colombia, prices were somewhat above the existing sovereign yield curve. However, market participants reported this was the result of high volumes of emerging market debt placed in the same week.

²The Polish bond allows each bondholder to accelerate its claim upon a payment default or declaration of moratorium by the sovereign issuer and does not provide for de-acceleration with respect to these events of default.

Emerging Market Sovereign Bond Issuance by Jurisdiction¹

	2001				2002				2003				2004 ²
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2 ³	Q3	Q4	Q1
With collective action clauses⁴													
Number of issuance	14	10	2	10	6	5	2	4	9	31	10	5	15
of which: New York law		1							1	22	5	4	12
Volume of issuance	5.6	4.8	1.8	2.2	2.6	1.9	0.9	1.4	5.6	18.0	6.4	4.3	12.8
of which: New York law		1.5							1.0	12.8	3.6	4.0	9.1
Without collective action clauses⁵													
Number of issuance	16	17	6	18	17	12	5	10	14	4	7	7	2
Volume of issuance	6.7	8.5	3.8	6.1	11.6	6.4	3.3	4.4	8.1	2.5	3.5	4.2	1.5

Source: Capital Data.

¹Number of issuance is in number. Volume of issuance is in billions of U.S. dollars.

²Data for 2004:Q1 are as of February 17, 2004.

³Includes issues of restructured bonds by Uruguay.

⁴English and Japanese laws, and New York law where relevant.

⁵German and New York laws.

included a premium for CACs, an opinion generally shared by private market participants who have lately been disregarding the inclusion of CACs in market reports on sovereign issues.

A number of international sovereign bonds were issued under English and Japanese law including CACs, as has been the practice in these markets. The emerging market issuers included Hungary, Poland, Slovak Republic, and

Ukraine and mature market issuers included Austria and Sweden. Bond issues under German law continued to lack CACs, although legislative work aiming at the elimination of perceived legal risk in the usage of CACs under German law is underway. International bond issues under German law have been rare in the last three years, however, which may partly be due to lost or reduced market access of important traditional issuers.

reported that there was no large-scale withdrawal from Latin America and that the effect on FDI from the Argentina crisis was concentrated in the banking and utilities sectors.

The CMCG report also notes that FDI in emerging market countries is increasingly being undertaken to service domestic demand in the host country, which highlights the importance of large markets and promising growth prospects. Consequently, emerging market countries with good governance practices and improving infrastructure and institutions are likely to secure greater amounts of FDI.

Banking Sector Developments in Emerging Markets

The improved economic climate is supporting the recovery of banking systems in the major emerging market countries despite slow progress in fundamental restructuring. For the most part, banking systems in Asia continue to recover, although growing credit risk exposure to certain sectors, in conjunction with persistent balance sheet weaknesses, deserves close attention by the supervisors in a few countries. In Latin America, severe liquidity pressures on distressed banking systems are receding, but less-than-robust economic growth and political factors are exacerbating financial distress in some countries. Banking

systems in emerging Europe have coped well with weak macroeconomic conditions and now stand to benefit from improved economic prospects. Nonetheless, fast credit growth in some countries needs to be closely monitored. The authorities are making efforts to address long-standing structural problems in the banking systems in some countries in Africa and the Middle East.

Capacity in emerging markets to absorb shocks from mismatches in the external asset-liability positions of banks has improved. Banks in emerging market countries now have on average a more balanced external position vis-à-vis BIS reporting banks than in 1997–98. Official reserves coverage of the banking systems' net liability positions has generally increased (Table 2.2). And supervisory and regulatory efforts have intensified, although significant improvement in effectiveness in this area will take time. The focus of regulations in several countries is shifting toward requirements for improved risk management by individual institutions. Regulatory authorities are also seeking to harness market discipline through greater disclosure and provision of accurate financial information to markets.

Asia

The financial systems of the major emerging market countries in Asia are being bolstered

Table 2.2. Individual Countries' Bank Net Asset/Liability Position vis-à-vis BIS Banks as a Ratio of Official Reserves¹

	1997	1998	1999	2000	2001	2002	2003:Q2
Asia							
China	-0.1	0.0	0.1	0.3	0.2	0.2	0.1
Indonesia	-1.1	-0.3	-0.2	-0.2	-0.1	-0.1	0.0
Korea	-2.0	-0.5	-0.4	-0.2	-0.2	-0.2	-0.3
Malaysia	-0.6	-0.3	-0.3	-0.1	-0.2	-0.2	-0.3
Philippines	-0.5	-0.1	0.2	0.0	-0.2	-0.2	-0.2
Thailand	-2.2	-1.1	-0.5	-0.3	-0.1	-0.1	-0.1
Emerging Europe							
Czech Republic	0.0	0.0	0.3	0.3	0.5	0.1	0.0
Hungary	-0.4	-0.5	-0.3	-0.4	-0.3	-0.5	-0.6
Poland	0.5	0.2	0.2	0.2	0.3	0.1	0.1
Russia	-2.3	-3.9	-2.3	-0.1	0.1	0.4	0.3
Turkey	0.2	-0.3	-0.2	-0.3	0.0	0.1	-0.1
Ukraine	0.2	-0.3	-0.1	-0.1	0.0	0.3	0.4
Latin America							
Argentina	0.2	0.3	0.2	0.3	-0.5	-0.5	-0.4
Brazil	-0.3	-0.3	-0.3	-0.9	-0.7	-0.7	-0.3
Chile	0.3	0.4	0.6	0.5	0.5	0.3	0.3
Costa Rica	0.7	0.5	0.3	0.3	0.5	0.4	-0.2
Ecuador	-0.1	-0.4	0.0	0.3	0.6	1.5	0.9
El Salvador	0.3	0.1	0.0	-0.3	-0.3	-0.4	-0.2
Guatemala	0.1	-0.1	-0.1	0.2	0.1	0.3	0.2
Honduras	1.2	1.3	1.0	1.4	1.3	1.2	0.3
Mexico	0.0	0.1	0.3	0.5	0.6	0.4	0.4
Nicaragua	-0.6	-0.7	0.1	-0.3	-0.5	-0.5	-0.5
Uruguay	2.5	0.7	1.0	1.0	1.2	3.6	3.0
Venezuela	0.2	0.3	0.3	0.5	0.7	0.8	0.2
Middle East							
Egypt	0.8	0.7	0.7	0.8	0.7	0.8	0.9
Jordan	2.2	2.8	2.2	2.1	2.2	1.8	1.4
Lebanon	1.6	1.5	1.2	1.8	2.0	1.6	1.2
Morocco	0.6	0.7	0.5	0.5	0.3	0.3	0.2
Pakistan	-0.6	-0.7	-0.2	0.1	0.5	0.8	0.8
Tunisia	0.4	0.5	0.3	0.4	0.3	0.5	0.6
Sub-Saharan Africa							
Côte d'Ivoire	-0.4	0.4	0.4	-0.1	0.2	0.1	0.1
Ghana	0.7	0.8	0.4	1.0	0.7	0.7	0.6
Kenya	1.0	1.0	0.8	1.1	1.1	1.3	1.1
Nigeria	0.2	0.1	0.3	0.3	0.4	0.6	0.5
South Africa	-1.2	-1.3	-0.5	-0.3	-0.1	0.4	1.3
Zimbabwe	-2.5	-1.3	0.1	0.9	2.0	1.6	...

Sources: Bank for International Settlements; IMF, *International Financial Statistics*; and IMF staff estimates.¹A negative ratio indicates a net liability position (liabilities exceed assets).

by the economic recovery. Soundness indicators on average point to solid rates of return on assets and sustained improvement in capital adequacy and asset quality (Table 2.3). Bank ratings by private analysts and market valuation of bank stocks relative to overall stock indices also continue to improve (Figures 2.31 and 2.32).

In *India*, low interest rates have further boosted bank soundness and performance

indicators as the authorities have adopted measures to contain credit risk, including legal and regulatory changes. The banking systems in *Thailand* and *Malaysia* are benefiting from restructuring and reforms. In *Korea*, the financial system has had to absorb the effects of the bankruptcy of the chaebol SKGlobal, an affiliate of SK, Korea's third largest chaebol, and substantial losses at some credit card companies—the latter prompting the authori-

Table 2.3. Selected Financial Soundness Indicators for Emerging Markets*(In percent)*

	Return on Assets				Nonperforming Loans to Total Loans				Capital to Assets				Moody's Financial Strength Index ¹		
	2000	2001	2002	2003*	2000	2001	2002	2003*	2000	2001	2002	2003*	2001	2002	2003
Latin America															
Mean	0.7	0.6	0.3	0.9	9.3	9.1	8.6	10.5	10.9	10.9	10.5	11.1	27.8	19.7	18.7
Median	0.9	0.7	1.3	1.3	8.6	8.1	8.1	9.6	10.1	10.0	10.9	11.1	26.9	19.4	15.8
Standard deviation	1.6	2.2	3.4	1.3	6.7	6.6	5.2	6.9	2.1	2.4	4.2	2.9	12.2	17.0	18.7
Emerging Europe²															
Mean	0.7	0.2	1.4	1.6	12.0	12.4	10.0	8.8	10.8	11.6	11.3	10.1	29.2	28.9	29.8
Median	0.9	1.1	1.2	1.5	9.4	8.2	8.5	6.4	9.8	9.5	9.8	9.6	29.8	32.1	32.1
Standard deviation	1.1	2.9	0.8	0.5	8.8	9.4	6.5	7.3	4.3	5.9	5.1	2.6	12.9	13.6	13.3
Asia³															
Mean	0.6	0.7	0.7	0.9	16.5	14.6	13.4	12.1	7.3	7.6	8.1	9.9	25.9	26.7	27.5
Median	0.4	0.7	0.8	1.0	15.4	11.9	15.4	14.4	5.3	5.4	7.3	8.5	16.7	18.5	19.4
Standard deviation	1.4	0.9	0.4	0.3	8.6	9.3	8.6	7.0	4.6	4.5	4.2	4.4	25.4	24.0	23.5
Middle East															
Mean	1.1	1.0	1.1	...	16.3	16.4	15.4	...	8.5	8.6	8.7	...	29.8	28.6	28.6
Median	0.9	0.8	0.7	...	15.8	16.1	13.9	...	8.5	8.5	8.9	...	31.7	29.2	29.2
Standard deviation	0.6	0.7	0.7	...	6.4	6.0	6.9	...	3.1	2.9	2.8	...	8.9	9.6	9.6
Sub-Saharan Africa															
Mean	3.7	3.8	2.9	...	15.7	13.3	12.2	...	9.2	9.4	9.3	...	...	...	...
Median	3.2	3.3	2.3	...	14.6	11.7	8.9	...	9.1	9.1	9.4	...	...	...	...
Standard deviation	3.1	2.6	2.0	...	9.2	8.3	9.6	...	1.4	1.4	1.3	...	...	...	...

Sources: National authorities; EDSS; and IMF staff estimates.

Note (*): Data for 2003 is for various quarters and for a more limited sample.

¹Constructed according to a numerical scale assigned to Moody's weighted average bank ratings by country. Zero indicates the lowest possible average rating and 100 indicates the highest possible average rating.²Includes Central and Eastern Europe, Israel, Malta, and Turkey.³Excluding Japan.

ties to announce steps to strengthen prudential supervision of credit card companies. While the banking system has remained stable, the urgency of enhancing reform of the insolvency regime and instituting tighter oversight of nonbank institutions has been brought into focus. The financial systems of *Hong Kong SAR* and *Singapore* have weathered the effects of SARS and are well positioned to take advantage of the region's economic recovery.

The process of bank restructuring in *Indonesia* has been completed and overall indicators of bank soundness continue to improve. Some concerns remain related to state-owned banks' lending growth, notwithstanding measures to strengthen the banking system, including careful monitoring. In the *Philippines*, banks' reported capital adequacy exceeds regulatory requirements and prof-

itability is improving somewhat. Asset quality, however, remains a problem and strategies are being devised to reinforce the capacity of the banking system to cope with shocks. In *China*, the recent capital injection into two large state-owned banks may represent an important step toward strengthening the banking system, provided restructuring plans, improved governance, and oversight of the two banks are promptly implemented (see Box 2.5).

Latin America

Although some aggregate indicators of banks' financial soundness for the region as a whole deteriorated further in 2003, the situation in countries recently in financial crisis has begun to stabilize. Moreover, banking soundness indicators have continued to

slowly improve in the other countries in the region.

Financial conditions in *Argentina's* banking system stabilized during 2003, but credit growth remains marginal, while past policy-related losses have not been fully compensated and bank assets are concentrated in low-yielding government assets. Progress in restructuring the banking system in *Uruguay* has been limited.

Macroeconomic uncertainty, often coupled with political uncertainties, cloud the prospects for the banking system in several countries, including *Bolivia*, *Ecuador*, and *Paraguay*, where the ratio of nonperforming to total loans has continued to edge up without an offsetting increase in provisions. In the *Dominican Republic*, questions about the solvency of individual institutions have had a marked impact on market confidence.

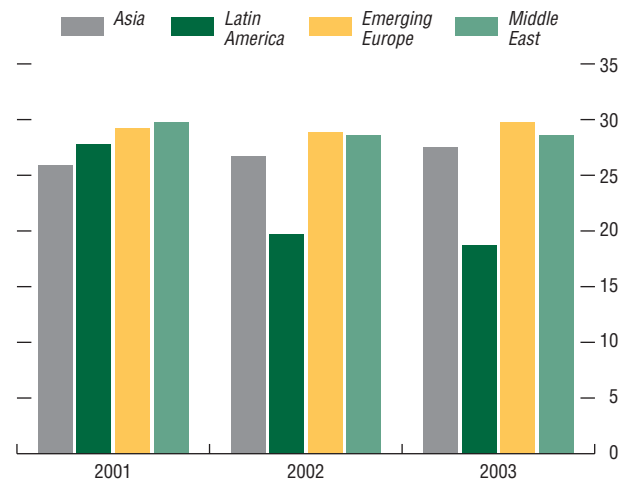
By contrast, despite slow economic growth, banking sector performance has improved in *Brazil*, *Chile*, *Colombia*, and *Mexico*. Returns on assets have firmed and compare favorably with international norms, while excess provisioning and comfortable capitalization levels continue to provide a buffer against potential deterioration in credit quality.

Emerging Europe

Banking systems are enjoying improved rates of return and asset quality, and strong capital positions. This good performance is also reflected in private analysts' ratings of banks, which were on average raised in 2003 (Figure 2.31). After strengthening sharply in mid-2002, relative market valuations of bank stocks have receded somewhat, although they still stand above the average levels in the previous two years (Figure 2.32).

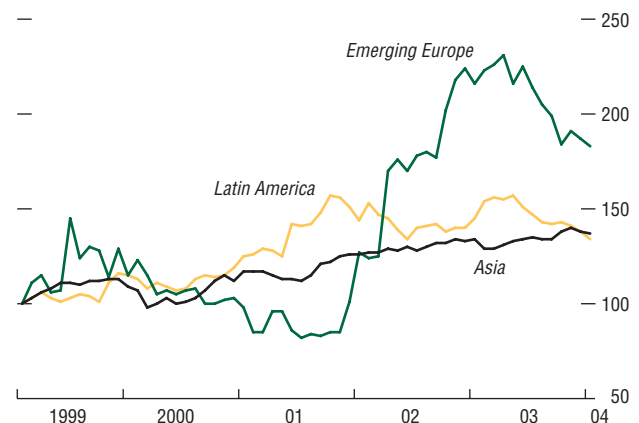
In *Turkey*, while the banking system has successfully coped with the effects of the Imar Bank scandal, the episode has again raised questions about the supervisory framework. In addition, a variety of structural issues—resolution of Pamukbank, sale of assets of

Figure 2.31. Moody's Financial Strength Index



Sources: Moody's; and IMF staff estimates.

Figure 2.32. Emerging Market Countries: Banking Sector Market Valuation¹
(February 1999 = 100)



Sources: Datastream; and IMF staff estimates.

¹Ratio of banking sector stock prices to total market stock prices, simple average.

Box 2.5. State Bank Recapitalization in China

On the basis of a decision by China's State Council, \$45 billion (about 4 percent of GDP) of China's international reserves were used on December 30, 2003 to recapitalize two of China's four major state-owned commercial banks—the Bank of China and China Construction Bank. The capital injection was split equally between the two banks. The recapitalization was executed by the central bank (the People's Bank of China—PBC) transferring the funds from its international reserves holdings to a newly created holding company, owned by the State Administration of Foreign Exchange (SAFE), which was established to facilitate the recapitalization. The holding company exchanged the foreign currency assets (mostly in the form of U.S. treasury securities) that it received for equity positions in the two banks. The banks will retain these foreign currency assets in their original form.

The authorities have stated that the recapitalization is part of a broader overall reform

strategy for these banks. As part of this strategy, they have suggested that additional steps will be taken, including (1) adopting stricter auditing requirements; (2) requiring the banks to move more quickly to fully meet provisioning requirements; and (3) boosting capital adequacy ratios to 8 percent, in line with international standards. If these steps are taken, the recapitalization may significantly improve the health of these two banks and that of the banking system as a whole, since these banks constitute about one-third of the assets of the banking system. However, to maximize the chances of a successful outcome, of immediate importance is the need to develop and begin implementing concrete restructuring plans for the two banks. In particular, substantial improvements in the internal operations and governance of the banks are required, accompanied by efforts to further improve oversight by the supervisory authorities.

other distressed banks, and privatization of state banks—are yet to be addressed adequately. Elsewhere in the region, risks have generally receded and banking systems maintain confidence and stability. Several countries, however, have experienced fairly rapid credit expansion, which warrants rigorous credit evaluations and close monitoring of credit quality.

Middle East and Africa

Banking systems in these regions are characterized by highly divergent financial performance and balance sheets.

Banks in the wealthy oil producing countries of the Middle East are generally strong and their positions strengthened further in 2003. In particular, the banking system in *Saudi Arabia* remains highly liquid, profitable, and well capitalized. The main risks stem from an economic slowdown and geopolitical uncertainties.

Elsewhere in the region banks continue to suffer from structural weaknesses that are being addressed. In *Egypt*, large public sector banks received a capital injection in early 2003 and efforts are under way to improve performance through changes in management. In *Morocco*, growing weaknesses in state-owned specialized banks are being addressed, while commercial banks generally have a strong capital base and prudent provisioning policies. Financial conditions in *Lebanon* have eased considerably, but asset quality and bank exposure to the sovereign, whose debt is very high, remain important issues. Bank restructuring and privatization efforts have also progressed in *Pakistan*, and banks' balance sheets have strengthened.

The financial system in *South Africa* has stabilized and undergone consolidation, following serious difficulties at some banks in 2001. The authorities are now turning to measures

to broaden access to financial services for the population.

Structural Issues Should Be the Focus in Mature Markets

The relatively benign conditions in both mature and emerging markets described earlier have allowed further progress in reducing balance sheet vulnerabilities in mature markets. In large part, this represents the continuation of the trend reported in the September 2003 GFSR and earlier issues:

- *Corporate and household sectors have continued to build up liquidity.* In the United States in particular, strong corporate cash flow has reduced borrowing needs, while in Europe household savings continued to be directed into money market instruments.
- *Rising asset values have strengthened net worth across a wide range of sectors.* This is true not only for the corporate and household sectors but also for banks and for institutional investors such as insurance companies (discussed in detail in Chapter III).
- *Over the last six months, hedging activity in the U.S. mortgage market has become somewhat less of an influence on interest rate volatility.* As most borrowers who could refinance their mortgages have done so, refinancing levels are unlikely to rise to the peaks of 2003. However, the market has given increased attention recently to the possibility that, if 10-year yields fall much further, mortgage hedging activity could grow and thus accentuate the decline in yields.
- *Nevertheless, debt levels remain high in many sectors and remain a vulnerability if interest rates rise.* The stock of debt in Europe in particular continues to rise for both households and corporates. Although the debt service requirements are currently modest and many corporates and households (especially in the United States) have locked in low interest rates, rising interest rates would still increase the debt service burden.

During recovery points in a cycle it may be appropriate to focus on some of the longer-term topics of interest for financial stability:

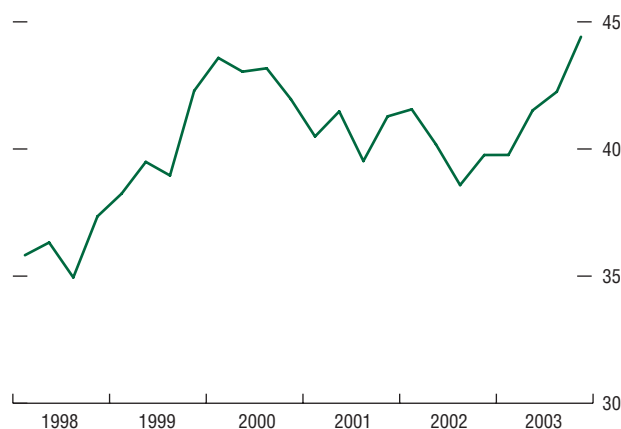
- *The hedge fund industry has been growing rapidly and institutional investor participation has substantially increased.* Although leverage and counterparty exposures are better monitored (due in part to greater oversight by institutions), it would be helpful to have more consistent disclosure standards.
- *Corporate governance initiatives need to be pursued.* Although progress has been made in particular countries and multilaterally, the cases of Parmalat and of late trading and market timing in the U.S. mutual fund industry serve as a reminder that more can and should be done.
- *The Basel II Accord is due to be finalized by mid-2004.* It is likely to improve financial stability. However, some questions remain, particularly concerning its implementation. This section discusses these issues in more detail.

Sectoral Balance Sheets

As the global economic recovery took hold and interest rates remained low, the balance sheets of household, corporate, and bank sectors strengthened over the course of 2003, extending the trend identified in the September 2003 GFSR. However, some fragilities and sources of potential vulnerabilities remain.

In most European countries and in the United States, buoyant housing and equity markets have contributed to the improvement in household balance sheets and increased net worth. Together with the low interest rate environment, this has led at the same time to a continuing growth in mortgage debt. Household balance sheets could thus prove sensitive to a turnaround in house prices, which could be triggered by a larger-than-expected rise in interest rates or disappointing income or employment growth. Consumer credit growth has been less strong and, in contrast to the United States, European consumer credit

Figure 2.33. United States: Household Net Worth
(In trillions of U.S. dollars)



Source: Board of Governors of the Federal Reserve System, *Flow of Funds*.

growth has slowed, perhaps reflecting the lag in continental Europe's economic recovery.

Corporate balance sheet restructuring in the major mature markets progressed in 2003 as the economic recovery significantly strengthened cash flow. This factor, together with low interest rates, allowed corporates to lengthen debt maturities and reduce debt servicing costs. The degree of balance sheet improvement, however, differs between countries, largely reflecting the uneven pace of the global economic recovery. European nonfinancial corporations, for example, are still burdened by very high levels of debt and could be vulnerable to a rise in interest rates or a disappointing pace of recovery. In the United States, on the other hand, cash flow has been particularly strong. In Japan, rising profits have allowed corporates to reduce leverage.

Banks overall have benefited from improvements in the economic and financial background and in their own risk management. Strong mortgage lending in the United States and in many European countries has increased bank income. Simultaneously, the quality of their corporate credit portfolios benefited from the improved financial condition of borrowers. However, the current high exposure of banks to real estate, notably in Europe, represents a continuing risk. In Japan, progress is being made in reducing nonperforming loans but the large amount still outstanding and the slow restructuring of the stock of subperforming loans continue to leave bank balance sheets fragile.

Household Balance Sheets

UNITED STATES

The net worth of U.S. households increased 12 percent in 2003, due primarily to rising home and equity prices. These gains lifted household net worth above its previous peak in 2000 (Figure 2.33).

Household debt continued to expand throughout 2003. Although borrowing decelerated somewhat following the end of the

mortgage refinancing boom in August 2003, mortgage debt during the second half of 2003 grew at an 11 percent annualized rate. Consumer credit has continued to grow at about a 5 percent annual rate.

EURO AREA

In the euro area, consumer credit growth has slowed since late 2002. Despite rebounding in the fourth quarter of 2003, its 3 percent annual growth rate in 2003 remained below that for 2002. Mortgage borrowing has remained buoyant for several years, and it accelerated further in 2003 to an 8 percent growth rate. The 7 percent rise in house prices in 2003 also contributed to healthier household balance sheets. Euro area households continued to build liquidity during 2003, favoring short-term, low-risk instruments, although demand for money market funds and bank deposits slowed later in the year.

UNITED KINGDOM

Overall household borrowing in the United Kingdom remained strong at the end of 2003, with mortgage and consumer credit both growing at annual rates above 10 percent, despite slowing consumer borrowing over the course of the year. Past house price increases, on the other hand, may keep fueling mortgage borrowing in the coming months, despite the recent tightening of monetary policy. In the third quarter of 2003, mortgage equity withdrawal stood at 7 percent of disposable income, 2 percentage points above its level a year earlier (Figure 2.34). At the same time, U.K. households' debt-to-income ratio stood at 126 percent, compared to 119 percent in 2002 and 104 percent in 2000.

JAPAN

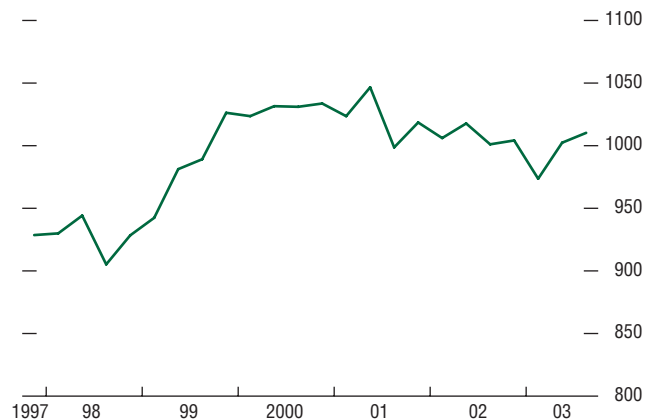
During the second and third quarters of 2003, the Japanese household sector's net worth improved, reflecting primarily valuation gains in equity holdings (Figure 2.35). Total financial assets rose by 2 percent during the same period.

Figure 2.34. United Kingdom: Mortgage Equity Withdrawal
(As a percent of disposable income)



Source: Bank of England.

Figure 2.35. Japan: Household Net Worth
(In trillions of yen)



Source: Bank of Japan, Flow of Funds.

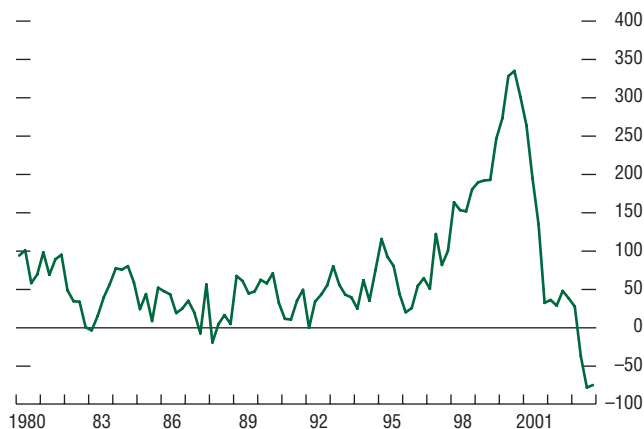
Figure 2.36. United States: Debt to Net Worth Ratio of Nonfinancial Corporations



Source: Board of Governors of the Federal Reserve System, *Flow of Funds*.

Figure 2.37. United States: Financing Gap of Nonfinancial Corporations

(In billions of U.S. dollars)



Source: Board of Governors of the Federal Reserve System, *Flow of Funds*.

Corporate Balance Sheets

UNITED STATES

U.S. nonfinancial corporate balance sheets continued to improve. Net worth rose steadily in 2003 and leverage declined, as the ratio of debt to net worth dropped from its recent peak in 2002 of 51.4 percent to 49.3 percent by the end of 2003 (Figure 2.36). Corporate leverage is below the average since 1990, as improvements in net worth since the early 1990s have outpaced debt growth, but remains higher than earlier periods.

Nonfinancial corporate debt grew slowly in 2003, as surging cash flow eliminated the need to borrow for many firms. Corporate cash flow rose sharply by 21 percent over the course of 2003, and is now 35 percent above its pre-recession peak. Corporations had a surplus of cash flow over capital spending, despite the latter's double-digit growth rate in the third and fourth quarters, as the financing gap—the difference between these two amounts—was a record low and profit growth continued to be robust (Figure 2.37). Firms thus entered the new year with high liquidity. Strong cash flow also allowed corporations to reduce net bond issuance.

EURO AREA

In the euro area, nonfinancial corporations continued to limit their bank borrowing in recent months and increasingly turned to the securities market to restructure their balance sheets. As of November 2003, debt securities issuance by nonfinancial corporations was growing at 9 percent annually (Figure 2.38). Although cost-cutting efforts and asset disposals allowed some strengthening of nonfinancial corporate balance sheets in 2003, they remain burdened by relatively high levels of debt, with their debt/GDP remaining near 65 percent in the third quarter, a level last seen in the early 1980s.

UNITED KINGDOM

U.K. nonfinancial corporations' debt reached a historical high in the third quarter

of 2003, rising to more than 75 percent of GDP, from 50 percent in the mid-1990s (Figure 2.39). However, balance sheet adjustment seems to be under way in the sector, aided by the financial surplus since mid-2001, and the progressive decline in the ratio of interest payments to gross operating surplus (18 percent in the third quarter of 2003, from 22 percent in 2000) as interest rates declined.

JAPAN

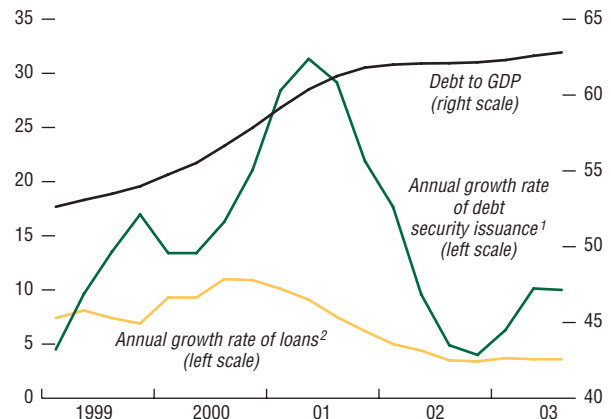
Continued profit growth allowed the Japanese corporate sector to further improve its balance sheet, including steady debt reduction during the second and third quarters of 2003 (Figure 2.40). Nevertheless, average debt levels remain high compared with other mature markets. Meanwhile, corporate pension funds returned assets that they had traditionally managed to the government pension fund. Under a prior arrangement, corporate pension funds could retain any surplus above target returns required by the government, but needed to compensate for any shortfalls from their own funds. The protracted period of poor stock market performance since 1990 and low interest rates have forced corporate pension schemes to continuously pay to the government compensation for losses, thus eroding their own funds. (The implications of global pension fund developments for financial stability will be the topic of a chapter in the September 2004 GFSR.)

Bank Balance Sheets

UNITED STATES

U.S. commercial banks posted strong earnings through the end of 2003, largely reflecting continued strong mortgage demand and a pickup in capital market activities among money-center banks. However, demand for business loans remained weak, and the volume of commercial and industrial loans fell further through the fourth quarter of 2003, although there are signs that demand for borrowing may improve in 2004 as economic activity strengthens.

Figure 2.38. Euro Area: Nonfinancial Corporations—Financial Situation
(In percent)

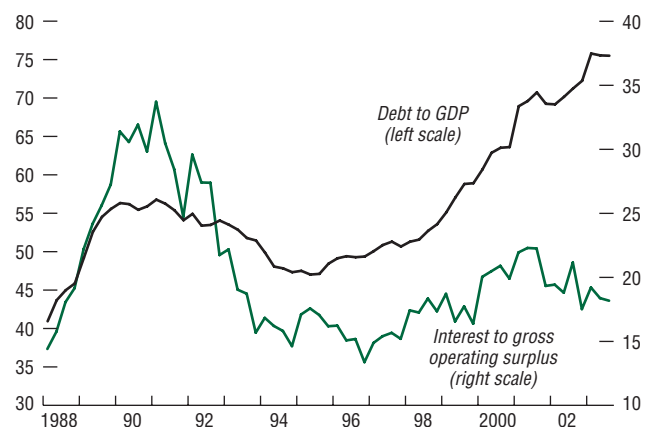


Sources: European Central Bank; and IMF staff estimates.

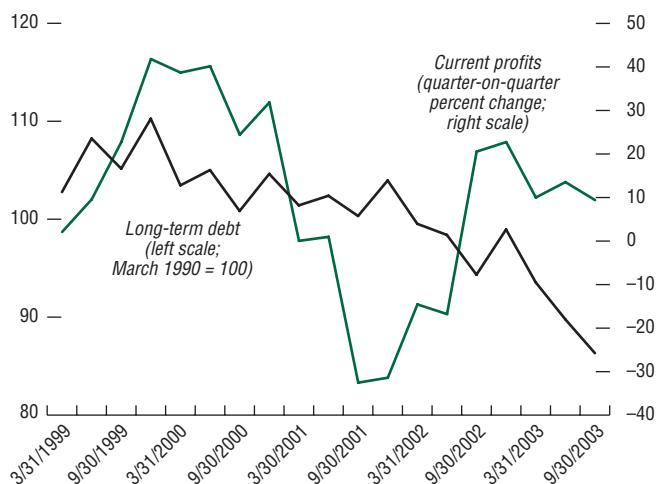
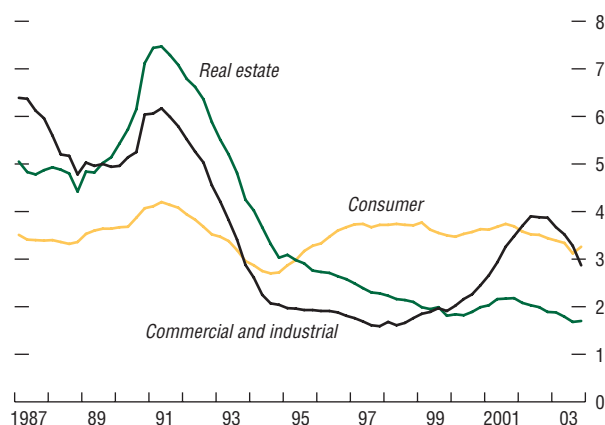
¹Data up to end-November 2003.

²From monetary and financial institutions.

Figure 2.39. United Kingdom: Nonfinancial Corporations—Financial Situation
(In percent)



Source: United Kingdom, Office of National Statistics, *United Kingdom Economic Accounts*.

Figure 2.40. Japan: Corporate Profitability and IndebtednessSource: Bank of Japan, *Flow of Funds*.**Figure 2.41. U.S. Commercial Banks: Delinquency Rates (In percent)**Source: Board of Governors of the Federal Reserve System, *Flow of Funds*.

The credit quality of bank loan portfolios has continued to improve. Delinquency rates on commercial and industrial loans, which at their recent peak in early 2002 remained well below the levels of the previous recession, fell further throughout 2003 (Figure 2.41).

Delinquencies on real estate loans are at an extremely low 1.7 percent. The credit quality of consumer loans has also improved somewhat, but delinquency rates are only slightly below their peak in late 2001.

EUROPE

Banks in the European Union appear to have contained loan losses reasonably well compared with previous economic slowdowns. Banks were helped by the ongoing low interest rate environment and continued improvement in bank credit risk management. Indeed, after two years of increases, provisioning seems to have declined during 2003, as corporate asset quality has stabilized.

The credit quality of European banking groups improved in 2003. Among the 20 largest European banking groups, Fitch took nine positive and only four negative rating actions in 2003, with most positive rating actions taken toward the end of the year. By contrast, it took three positive and eight negative rating actions in the second half of 2002.

Exposure to real estate remains significant. Mortgage lending now represents on average two-thirds of total bank lending to households and up to 35 percent of total loans to the non-financial private sector. European Union banks' exposure to the construction and real estate sectors comprised 36 percent of banks' own funds at the end of 2002, up from 33 percent a year earlier.

Overall, the profitability of large European Union banks increased in 2003, but part of this improvement came from nonrecurring items such as cost cutting, elimination of non-core activities, and declining loan-loss provisions. Banks' capacity to use one-off factors to offset another episode of weakened activity is accordingly diminished. This could potentially

lead some European Union banks to raise fresh capital.

JAPAN

Japanese banks' balance sheets have improved significantly through the six-month period ended September 30, 2003. A strengthening economic recovery and a rising equity market supported bank profitability. In addition, Japanese banks reduced nonperforming loans by 10.5 percent during the six months ending September 2003, particularly among the major banks. A recovery in corporate profitability and some progress in corporate restructuring reduced new nonperforming loans, while banks accelerated write-offs. Major bank and supervisory officials are increasingly confident of achieving the supervisory requirement of halving the nonperforming loan ratio by March 2005. However, reductions in nonperforming loans by regional banks have lagged the major banks. During the first half of FY2003, regional banks reduced their nonperforming loans by only 5 percent, compared to major banks' 14 percent, and regional banks now account for 44 percent of total nonperforming loans in the Japanese banking system.

The nationalization of Ashikaga Bank, the eleventh largest regional bank, in December 2003, drove home the magnitude of the nonperforming loans problem of regional banks. The government took tough action in the case of Ashikaga and, unlike the previous Resona Bank case in which the government bailed out shareholders in full, it assessed the bank to be insolvent and wiped out shareholders' equity in Ashikaga (the first such occasion for a regional bank). The market initially reacted to the news favorably, and some industry observers thought it provided a precedent for future bank failures. However, many observers have since interpreted the Ashikaga

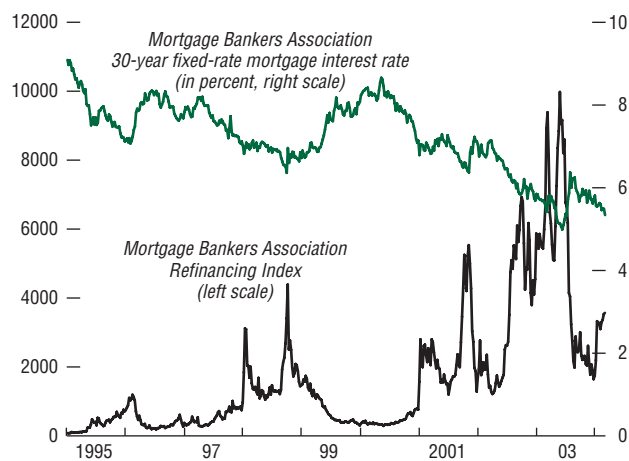
case as an isolated and special situation. The Japanese Financial Services Agency (FSA) is currently considering legislation to establish a new framework for temporary injections of public funds into solvent banks, in order to strengthen their operations. Under the proposed new scheme, public funds would be injected, accompanied by management reforms, without eliminating shareholders' stakes.

While welcoming the improvement in balance sheets, private sector observers point to several remaining risks in the Japanese banking system. The stock of subperforming (but not yet nonperforming) loans in the banking system stands at 10 percent of GDP. These credits benefit from the current low interest rate environment, but their restructuring remains slow.⁵

Mortgage Markets

Refinancing of mortgages by borrowers fell abruptly last summer as mortgage interest rates reversed part of their earlier decline. Accordingly, mortgage hedging activity in the United States has been sharply lower since the third quarter of 2003. As such, there has been no repetition of the events seen last July and August and discussed in the September 2003 GFSR, when strains from the mortgage market apparently added to volatility in other fixed-income markets. However, recent falls in long-term yields have led to some increase in refinancing activity. A further fall in treasury yields could be amplified as investors in mortgage-backed securities (MBSs) adjust their hedges to offset their changed convexity risk. There have been further calls for regulatory changes for the U.S. government-sponsored housing enterprises (GSEs), Fannie Mae and Freddie Mac. Freddie Mac's accounting problems remain unresolved, and have led to a

⁵The Industrial Revitalization Corporation of Japan, a government agency mandated to rehabilitate distressed corporates in cooperation with banks, has so far received only 12 candidates since its inception in April 2003 because of a lack of demand by banks to use the facility.

Figure 2.42. United States: Mortgage Market and Hedging

Source: Bloomberg L.P.

tightening of the regulatory requirements on it. Meanwhile, the European mortgage-related securities market is growing rapidly, although it remains much smaller than in the United States.

U.S. Mortgage Markets

There have to date been no further amplifying pressures on U.S. bond market volatility from mortgage hedging since last summer, as mortgage refinancing activity has slowed. The Mortgage Bankers Association's index of refinancing volumes peaked in May 2003, well above previous high points, but fell abruptly during the third quarter as long-term interest rates rose. Refinancing levels have risen in 2004 as long-term interest rates gradually declined toward the levels of March and April 2003, but to date the pace of refinancing is no more than half of the average level in the first half of 2003 (Figure 2.42). Thus, up to now, the adjustments to hedges required by investors in mortgages and mortgage-backed securities (including the GSEs) so as to match changes in the expected duration of their mortgage-related assets have been much smaller than last summer. (The duration of mortgage-related assets depends heavily on the likely future tendency of borrowers to pre-pay their mortgages. See the September 2003 GFSR for a detailed discussion of mortgage hedging and market volatility.)

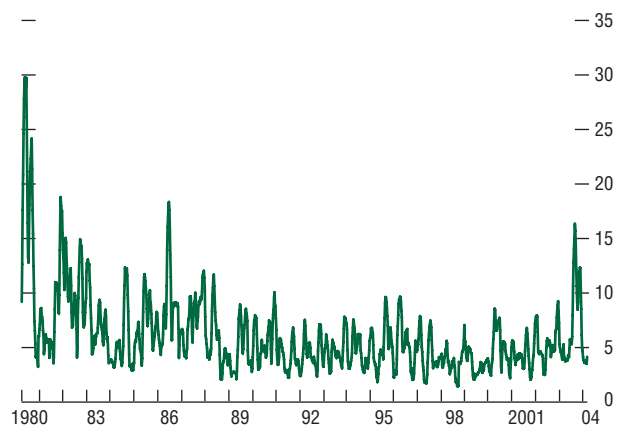
The fall in 10-year U.S. treasury yields to below 3.8 percent following the February employment report on March 5, 2004, sparked market speculation that interest rates were close to a point requiring further MBS convexity hedging, which in this case would amplify the downward move in yields rather than the upward move last summer. The degree of hedging depends on the coupon structure of outstanding mortgages, which has changed significantly, as a large fraction of higher-coupon mortgages were refinanced during 2002–03. In May 2003, for example, about 75 percent of the MBSs securitized by Fannie Mae (which reflect the distribution of

coupons on the underlying mortgages) had coupon rates of 6 percent or more, and these mortgages were the most frequently prepaid. By February 2004, however, the amount outstanding of these higher-rate MBSs had fallen by more than \$250 billion, and they now represent only 40 percent of the total market. The remaining 60 percent of MBSs have coupons of 5.5 percent or less. With the interest rate for new 30-year mortgages falling to 5.3 percent on March 5, mortgage rates are back at a level where future changes will strongly affect MBS investors' expectations of future prepayment levels and hence their immediate hedging needs.

While there is some risk of amplified interest rate volatility in the future, MBS investors are better equipped to manage the risks involved than in earlier periods, such as 1994. Longer-term treasury returns in the third quarter of 2003 were, by some measures, the most volatile since 1986, as the previous steady reduction in yields reversed direction sharply (Figure 2.43). While mortgage hedging activity contributed to volatility in the short term, improved sophistication of risk management over the years helped to avoid the insolvencies among MBS investors that occurred in 1994. In particular, improvements in risk measurement of structured products and the use of a greater variety of hedging instruments helped investors to manage the risks arising from the mortgage market, which has grown at a 9 percent annual rate over the last decade.⁶

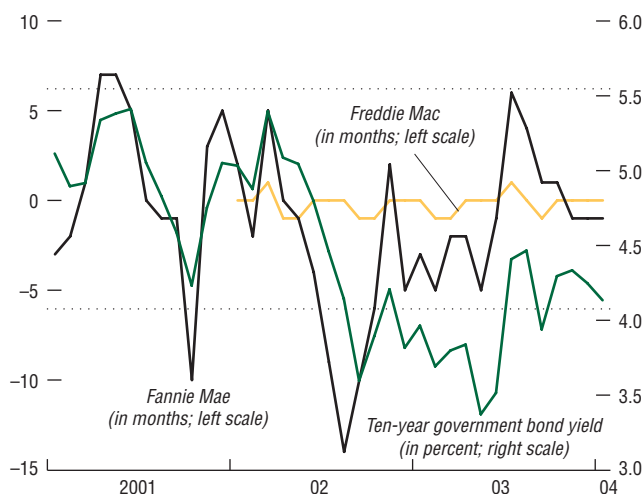
Despite calmer conditions in the mortgage market, the U.S. mortgage agencies have remained in the public eye. Freddie Mac, which announced in January 2003 that it would restate earnings and capital for prior

Figure 2.43. United States: Government Bond Index, Three-Month Return Volatility
(In percent)



Source: Datastream.

⁶In 1994, many pools of MBSs were repackaged into Collateralized Mortgage Obligations with some tranches having very unusual payment patterns and interest rate elasticities so complex that it was difficult or impossible to predict how they would behave under volatile market conditions. Many investors did little or no hedging of the prepayment option risk embedded in the instruments.

Figure 2.44. United States: Agency Duration Gaps

Sources: Fannie Mae; Freddie Mac; and Bloomberg L.P.

Note: The horizontal dotted lines show the boundaries of a six-month duration range.

years, has published restated financial statements for the years 2000 to 2002, but has not yet been able to complete its accounts for 2003. As previously predicted by Freddie Mac, the 2000–2002 accounts increased regulatory core capital, while also creating greater income volatility (see the September 2003 GFSR). In January 2004, the agencies' regulator, the Office of Federal Housing Enterprise Oversight (OFHEO), imposed a 30 percent capital surcharge on Freddie Mac until the accounting irregularities are resolved and placed additional restrictions on its ability to buy back shares or increase dividends. Freddie Mac already has sufficient surplus capital to meet the surcharge without raising fresh capital, but it may limit Freddie's ability to grow in the near term. Freddie Mac says that the accounting changes themselves, once they are implemented, will raise its capital levels, thus helping relax a capital constraint should the surcharge be longer lasting. Meanwhile, OFHEO is also conducting a special examination of accounting policies and practices at Fannie Mae, and has raised concerns about extensive reliance on manual systems.

Fannie Mae continues to keep the duration gap between its assets and liabilities in a narrower range, since being required to do so by OFHEO in November 2002. Although it continues to run a larger duration gap than Freddie Mac, it has kept the gap within a six-month duration range (Figure 2.44). The gap is very closely correlated from month to month with movements in treasury yields, suggesting a policy of not fully adjusting the hedge for movements in interest rates, and thus avoiding some of the hedging costs of continual full adjustment.

Senior U.S. officials recently made public statements calling for regulatory changes regarding the GSEs. Gregory Mankiw, chairman of the Council of Economic Advisers, called for legislation to reform the supervision of the GSEs, such as increasing the authority of the GSEs' regulator, including additional powers to set both risk-based and minimum

capital standards, and removing some of the special privileges enjoyed by the GSEs that help convey the implicit guarantee of the federal government. In addition, in testimony before the Congress, Federal Reserve Board Chairman Alan Greenspan called for a stronger regulator (on a par with banking regulators) and for limits on the size of the GSEs' own debt as a proportion of the amount of debt they securitize, so as to limit their systemic impact while enhancing the liquidity of the securitization market.

We support moves such as these to strengthen regulation and to restrain the growth of the GSEs' portfolios, as well as to improve transparency and address the implicit government guarantee.

Mortgage and Securitization Markets in Europe

The market for European mortgage-related securities is much smaller than in the United States, but growing. Over \$4 trillion of loans have been securitized in the United States, while European MBSs have grown to €310 billion and covered bonds (many of which are mortgage-related, as described below) to €1.5 trillion.⁷ The remainder of this section reviews the European mortgage markets and the True Sale Initiative aimed at facilitating the development of securitization markets in Germany.

The variety of national taxation, property, and consumer protection frameworks helps to explain the differing structures of housing markets in Europe, and has contributed to the slow integration of the European securitization and, to a lesser extent, covered bond markets. However, these markets have grown rapidly in recent years, particularly with the adoption of the euro, and have benefited from growing demand for credit by some institutional investors (see Chapter III) and in

the short run by the search for yield in a low interest rate environment. According to the European Mortgage Association, the size of the covered bond market is around 18 percent of the total euro-denominated bond market (Figures 2.45 and 2.46).

In some European countries, the legal framework for the issuance of mortgage bonds has been enhanced. In Germany, amendments to the Mortgage Bank Act strengthened the position of Pfandbriefe creditors, including an overcollateralization requirement and better protection in case of bankruptcy of the issuer. Similarly, in Spain, a new insolvency law, expected to be effective in September 2004, would clarify the existing framework of legal prioritization, reinforcing the position of Cedula holders. Sweden recently introduced regulations that allow collateralization of mortgage bonds by a designated pool of assets. HBOS Treasury Services made the first U.K. issue of covered bonds, perhaps opening the door to the development of a new mortgage product in that country.

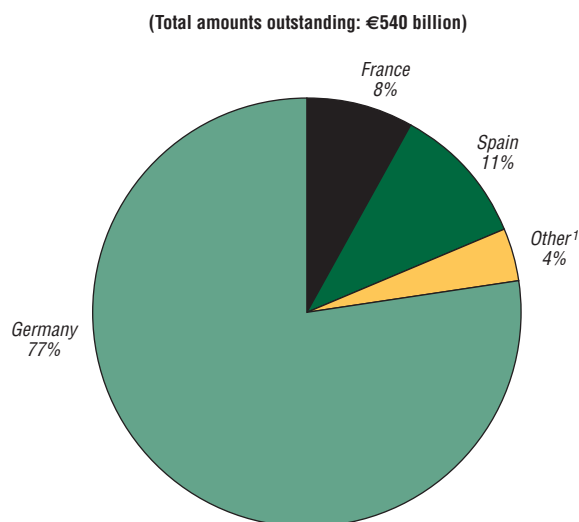
The European securitization market reached a record level of new issuance in 2003 (above €200 billion, up 30 percent from the previous year).⁸ Four countries (the United Kingdom, Spain, the Netherlands, and Italy) represented 75 percent of the issuance volume (Figure 2.47). Overall, the fastest-growing component of the securitization market appears to be retail mortgages, believed to represent close to 60 percent of total issuance volume.

Initiatives have been proposed recently aimed at fostering further integration of the European securitization markets. Among them is a proposal by a small group of European banks for a European Mortgage Finance Agency to be created, modeled on

⁷Covered bonds are debt securities issued by credit institutions specifically backed by a pool of either mortgage assets or public sector assets, which remain on the balance sheet of the issuer. Pfandbriefe in Germany, Obligations Foncières in France, and Cédulas in Spain all belong to this class of fixed-income securities.

⁸The estimate of securitization issuance given here is larger than the estimate made by the European Commission, mostly because it includes currencies of issuance other than the euro, such as the U.S. dollar and sterling.

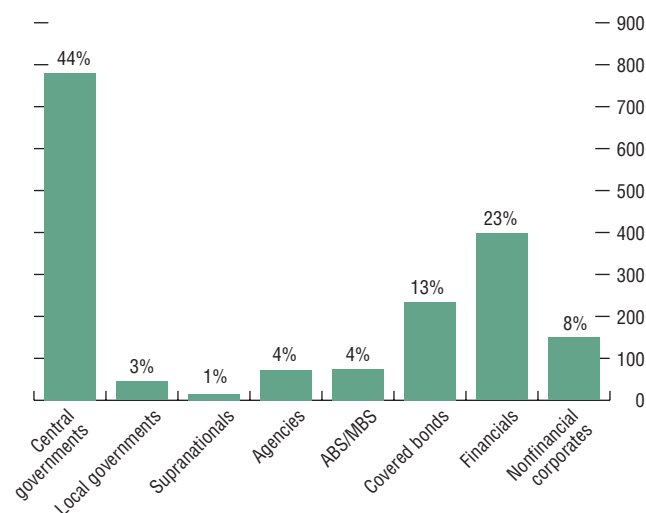
Figure 2.45. Euro Area: Jumbo Covered Bonds, November 2003



Source: CDC-ixis.

¹Includes Austria, Luxembourg, and United Kingdom.

Figure 2.46. Euro-Denominated Bond Market: Gross Issuance Volumes, 2003¹
(In billions of euros)



Source: EU Commission.

¹Percentages refer to shares of total issuance volume.

the U.S. agencies. According to its sponsors, such an agency would help create a homogeneous single European market for mortgage-backed securities. Some suggest that this would increase market liquidity and facilitate the introduction of longer-term, fixed-rate mortgages. Others (echoing the debate on the U.S. market mentioned above) are concerned that implicit public sector guarantees would distort competition, and may encourage excessive lending in a sector that is already experiencing significant growth.

In July 2003, 13 banks launched the True Sale Initiative to help foster the development of a cash securitization market in Germany, where synthetic securitizations have been the norm in recent years.⁹ The securitizations, at least initially focused on small- and medium-sized enterprise loans, would provide banks with a balance sheet management tool and diversify their funding sources. The project has been spearheaded by KfW, the German industrial development bank.

In summary, structural initiatives in individual European countries have been helpful in developing the mortgage-related and asset-backed markets, and there has been some convergence between different national markets. It is welcome that public sector guarantees have not been needed. Investor demand has grown rapidly, but the liquidity of these markets may be constrained in the future and the benefits to investors of diversification not fully realized, unless the legal and regulatory frameworks converge further.

Hedge Funds

The hedge fund industry has gone through significant growth and structural changes in recent years. Driven by increased institutional investor participation and related market discipline, transparency in the industry has

⁹Cash securitization involves the pooling of actual claims on various borrowers, whereas synthetic securitizations involve pools of derivative exposures.

improved. In addition, the use of leverage and counterparty exposures seem to be better monitored today. In general, hedge funds may have a positive effect on market stability, but macro-strategy and similarly styled funds active in smaller, less liquid markets may continue to present stability concerns. In general, better and more consistent disclosure standards for leverage, liquidity, and asset valuation would be helpful.

Assets under management within the global hedge fund industry have grown substantially, by \$100 billion–\$150 billion since early 2000, to above \$700 billion by most current estimates.¹⁰ U.S.-based hedge funds represent the bulk of the industry, with assets under management estimated at approximately \$600 billion. Asian and European funds have also grown substantially, and are estimated to have \$30 billion to \$40 billion, and \$75 billion to \$100 billion assets under management, respectively. The growth primarily reflects a broadening of the investor base, which today includes more institutional investors, such as pension funds and insurance companies, and, in many markets, more retail investors.

The increasing popularity of hedge funds can be attributed to a variety of factors. The decline in bond yields and falling equity markets from 2000 to early 2003 have led investors to search for alternative investments, often seeking absolute performance and less correlation to broader markets. This is especially true of institutional investors. The performance of individual hedge funds is believed to result largely from the skill or strategy of the specific asset manager, with less influence from general market trends. As such, the popularity of so-called “alternative investment management” has grown significantly in recent years.

The structure of the hedge fund industry has also changed, with many more strategies

Figure 2.47. European Securitization, Quarterly Issuance¹
(In billions of euros)



Sources: European Securitization Forum; Deutsche Bank; and IMF staff estimates.

¹ABS and MBS issues placed in European markets with underlying collateral from Europe.

¹⁰A recent survey by Greenwich Associates estimated the size of the industry at \$745 billion at the end of 2003.

Table 2.4. Performance of Selected Hedge Fund Strategies¹
(In percent)

	2001	2002	2003
Emerging markets	5.8	7.4	28.8
Event driven	11.5	0.2	20.0
Of which:			
Distressed debts	...	-0.7	25.1
Risk arbitrage	...	-3.5	9.0
Global macro	18.4	14.7	18.0
Long/short equity	-3.7	-1.6	17.3
Convertible arbitrage	14.6	4.1	12.9
Fixed income arbitrage	8.0	5.8	8.0
Equity market neutral	9.3	7.4	7.1
Dedicated short bias	-3.6	18.1	-32.6
CSFB/Tremont Hedge Fund Index	4.4	3.0	15.4

Source: CSFB/Tremont.

¹Based on CSFB/Tremont hedge fund database, methodology, and classification.

available to investors today. The industry is increasingly composed of small- and medium-size funds, implementing a variety of investment strategies (Table 2.4).¹¹ In recent years we have also seen the development of new vehicles, “funds of hedge funds,” which allow investors to obtain a more diversified hedge fund exposure within a single investment product. Funds of funds are believed to be the fastest-growing segment of the industry and, according to market sources, account for approximately \$200 billion in assets under management. As the institutional investor base grows, many investors prefer a fund of funds, in order to benefit from the manager’s ability to create diversified portfolios and to monitor investments. Globally, insurance companies and pension funds are reported to have grown to about 7 and 8 percent, respectively, of the client base of funds of funds. High net worth investors account for about 70 percent of such investment activity, with

most of these investments directed by professional advisors (family offices and private banks).

The rapid growth of the hedge fund industry has refocused official attention on financial stability issues. Hedge funds operate with a significantly higher degree of flexibility than other market participants. For example, they apply more leverage, depart from traditional diversification and liquidity requirements, and impose greater constraints on investors (who often accept only limited disclosure and liquidity).¹² The diversity of hedge fund styles and strategies and the limited information available on their investment and risk management practices make it difficult to assess the impact of hedge funds on financial stability. This lack of transparency has created its own pressure for more information, particularly regarding the use of leverage.

As a whole, hedge funds may contribute positively to the functioning of financial markets. It is generally agreed that hedge funds contribute to better pricing information, enhance market liquidity, and actively arbitrage price discrepancies between financial assets. Moreover, concerns related to investor herd behavior would seem no more true for, or even less applicable to, hedge funds than other investors, given that many hedge fund strategies seek to exploit market inefficiencies.

Macro-strategy funds, which take global positions on mature and emerging markets based on analysis of a wide range of factors, such as economic policies, interest rates or exchange rates, and aggressive trend-following trading strategies, may present a

¹¹According to market estimates, less than 20 percent of hedge funds have assets under management above \$100 million.

¹²Measuring use of leverage is difficult. Market sources estimate that close to 75 percent of hedge funds use leverage on an ongoing basis. The magnitude of leverage appears, however, to be limited overall (a ratio of 2 to 1 for the industry as a whole, and often less if provided by prime brokers). Furthermore, the use of leverage appears to differ significantly from one strategy to another; for example, most global macro funds leverage their portfolios by more than 2 to 1, but nearly half of the funds specializing in distressed securities do not leverage at all, according to Van Hedge Fund Advisors International Inc.

different profile. Global macro-strategies have become popular again in 2003; however, they represent a small part of the industry. Their investment style, often including higher turnover and more leverage, may contribute to amplifying market volatility. Of course, any destabilizing impact of such strategies will significantly depend on the structure of the markets in which they are executed. Smaller and more closed markets that lack liquidity and depth will be more prone to financial instability from such hedge fund activity.

The growth of institutional investor participation and the development of funds of funds have contributed to significantly greater market discipline. Because they impose a more rigorous investment process and stricter reporting requirements, institutional investors have greatly improved market discipline, directly and via funds of hedge funds. Moreover, industry representatives have proposed codes of practice and governance guidelines, addressing issues such as asset valuation and risk management.

Credit institutions and prime brokers are central to the function of the industry, particularly as providers of leverage.¹³ As such, these institutions have a key role to play in monitoring their hedge fund clients (e.g., developing market standards and improving public sector understanding, including through existing regulatory reports). Since the Long-Term Capital Management crisis, the degree of leverage seems more closely managed, counterparties demand more balance sheet information, and many hedge funds are transparent with prime brokers and other service providers. However, information tends to be reported bilaterally to investors and counterparties, rather than in a more systematic manner. The question remains, therefore, from a financial stability standpoint, whether

such market discipline is a sufficient substitute for regulation.

The trend toward greater retail participation has led policymakers in certain countries to adopt or consider new regulatory approaches. Traditionally, retail access to hedge funds has been restricted. But recently, regulations in various countries have been adopted to allow greater retail participation. For example, funds of funds have been made available to retail investors in France, Germany, Ireland, and Italy. Eligibility requirements for investors in these funds are generally lower than the “accredited investor” or similar standards in the United States. In the United Kingdom, the FSA has decided to maintain regulations preventing the sale of hedge funds to retail investors, and in the United States, the SEC has embarked on a similar discussion, again primarily focused on protecting retail investors.

IMF staff will continue to monitor closely hedge fund developments as the industry and its regulatory structure evolve.

Corporate Governance

Corporate Governance for Complex Corporate Structures: The Parmalat Case

After being shaken by the bankruptcies of Enron and WorldCom, investor confidence in recent years has been bolstered by continued progress in addressing weaknesses in accounting, auditing, and corporate governance. Although the size of the Enron and WorldCom losses were large (\$19 billion and \$40 billion, respectively), financial stability problems did not arise. This reflected the diversification of exposure through the markets, including the use of credit derivatives by some to reduce concentrations of credit risk, notwithstanding operational questions about the credit derivatives markets that surfaced at

¹³Prime brokers provide a wide range of services to hedge funds, including the financing, execution and back office support for transactions and positions, and securities borrowing and lending. Due to these functions, they monitor daily the leverage, liquidity, and other risk factors of their fund clients.

the time.¹⁴ While no reforms can eliminate fraud or mismanagement, there is a need to strengthen the institutions and frameworks that are meant to guard against it. Legislation has been enacted to improve oversight on corporate management by strengthening corporate governance, disclosure, and accountability (e.g., the Sarbanes-Oxley Act, the European Union's Financial Services Action Plan (FSAP), and reforms to the Corporate Law of Japan). More recently, there has been important follow-through in implementing these initiatives. Notable examples include the creation of the Public Company Accounting Oversight Board (PCAOB) and the implementation of the part of the European Union's FSAP concerning Company Law and Corporate Governance.¹⁵ Further work is also under way in many jurisdictions.

The Parmalat scandal, involving false billings and the creation of fictitious assets among its offshore subsidiaries, illustrates the need to ensure accounting, auditing, and corporate governance practices are consistent with legislative, regulatory, and supervisory principles and can be effectively applied to various local corporate structures. Parmalat was a large, closely held, family-controlled business with a complex corporate structure operating in multiple jurisdictions, which posed challenges for auditing and corporate governance as well as for implementation of adequate management checks and balances. This case raises general questions concerning corporate governance, the degree to which rating agencies and investors can provide adequate market discipline, and the role of financial auditors, regulators,

and supervisors. Because Parmalat operated under Europe's principles-based accounting system, this episode shows that both principles-based and rules-based (as in the United States) accounting and regulatory systems can be vulnerable to fraudulent activities. Parmalat also illustrates the importance of effective accounting and auditing practices that would adequately disclose the activities of complex ownership and capital structures, especially the importance of coordination among multiple auditors.

The credit markets handled smoothly the news in early December that Parmalat's investors and auditors had begun to question Parmalat's ability to repay €150 million in debt due December 15, 2003. The spread on Parmalat's credit default swaps (CDS) began to rise rapidly as the company's credit ratings fell from investment grade to default (Figure 2.48).¹⁶

Traders reported that buyers of credit protection for Parmalat debt rushed to settle several billion euros of outstanding credit derivative contracts. While most of these contracts were settled without dispute, some of the expiring contracts raised questions about what constituted a credit event. Some argued that Parmalat's actions in the weeks leading up to its bankruptcy filing constituted steps "in furtherance of" bankruptcy. The clause was part of the 1999 ISDA definition of bankruptcy but was dropped under pressure from investors, and this question should arise much less in the future.

The Parmalat bankruptcy will likely have more impact among structured portfolio products, such as collateralized debt obliga-

¹⁴The March 2002 GFSR discussed the operation of the over-the-counter (OTC) credit derivative markets after the Enron crisis emerged and implications for strengthening financial oversight, market discipline, disclosure, corporate governance, and auditing.

¹⁵PCAOB was created by the post-Enron legislation (the Sarbanes-Oxley Act) to oversee auditors of public companies and is empowered with broad scope for creating accounting and auditing rules, and investigative and enforcement powers.

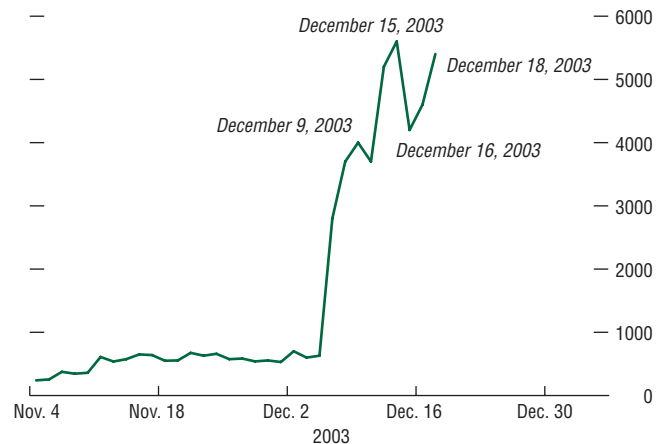
¹⁶Parmalat had a long-term debt rating of BBB- since 1999, until it was downgraded to B+ on December 9, and ultimately to D on December 22.

tions (CDOs), than in the cash market.¹⁷ As Parmalat was an investment-grade company in a sector traditionally with little debt outstanding, many CDOs included Parmalat to provide diversification. Nevertheless, individual CDOs contained relatively small Parmalat exposure, ranging from 0.2 to 5 percent, with the average approximately 1 percent. According to Moody's, the largest exposure to Parmalat is among European investment-grade synthetic CDOs, and the aggregate exposure is €602 million. Because CDOs are sold in tranches of different credit quality, it is likely that the purchasers of the junior (riskier) portions would have suffered most of the losses. Nevertheless, market analysts have noted that CDOs with even 1 percent exposure to Parmalat may find that the AAA-rated tranches could be downgraded if Parmalat defaults. Rating agencies have also reminded investors that individual corporate defaults can affect synthetic CDOs, because the reference CDOs tend to have widely overlapping portfolios. Moreover, monoline insurers, who provide credit guarantees to financial instruments, including CDOs, will have to make payment as a result of the Parmalat default.

Although many questions remain to be answered concerning the Parmalat case, the following are a few of the preliminary lessons that can be drawn:

- Complex ownership and capital structures may require additional reforms to provide adequate corporate governance, transparency, and disclosure.
- Rating agencies may have to adapt their assessment procedures to adequately monitor complex ownership structures with global operations and relatively more sophisticated treasury operations compared to industry norms.
- Investors should not become complacent in their due diligence, particularly concern-

Figure 2.48. Parmalat: Credit Default Swap Spread
(In basis points)



Source: CreditTrade.

¹⁷Parmalat was reported to be the fourth most active name among the reference entities in the underlying securities for CDOs.

ing auditing and corporate governance issues.

- There is a case for more public oversight of auditing practices.
- Strengthening national securities regulators should help improve supervision and move toward the goal of reciprocal acceptance of regulation and supervision standards.

Proposed Strengthening of OECD Principles of Corporate Governance

Earlier corporate bankruptcies spurred the international community to address corporate governance failures. OECD members have been working to revise their Principles of Corporate Governance and draft revisions were posted on the OECD website on January 12, 2004. The following are some of the more notable proposed revisions: (1) to allow shareholders to question not only the Board but also directly the external auditor; (2) to allow shareholders the opportunity to review board members' remuneration and to decide equity-related pay (the principles stress the need for remuneration to be consistent with a company's long-term interests); (3) to encourage greater involvement of institutional shareholders in corporate governance; (4) to have auditors accountable to shareholders in addition to the board of directors; (5) to develop policies to manage potential conflicts of interest among analysts, brokers, rating agencies, and other market participants; and (6) to require the board of directors to uphold high ethical standards and to commit themselves to their responsibilities as directors.

The proposed tightening of the principles of corporate governance is welcome. Still, there is room for encouraging further transparency and disclosure. For example, the

principles should encourage whistle-blowers to reveal unethical or illegal practices not just to the company board (as proposed) but, if the issue is not dealt with there, to minority shareholders, creditors, and other stakeholders. More generally, protecting the rights of minority shareholders through the dissemination of information would also help encourage investment and improve transparency.

In strengthening the principles of corporate governance, it is important to not unduly stifle management's discretion and ability to make business decisions. Qualified individuals must not be unduly discouraged from serving as directors for fear of shareholder lawsuits, for instance.

Corporate Governance and Financial Institutions

Financial institutions have been a particular focus of the corporate governance debate. For example, the New York Stock Exchange has separated the functions of CEO and Chairman of the Board in order to reduce actual or perceived conflicts of interest. Most recently, there have been prosecutions of some U.S. mutual funds. The investigations of inappropriate trading practices were initiated by the New York Attorney General and have led to charges against mutual funds, hedge funds, and other financial institutions and their executives involving "late trading" (which is illegal) and "market timing" (which is contrary to declared mutual fund policies).¹⁸ Subsequent investigations were conducted abroad, including by regulators in France, Germany, Switzerland, and the United Kingdom, but have not found evidence of additional wrongdoing. More recently, a group of mutual funds was fined for overcharging on commissions.

¹⁸"Late trading" is an illegal practice that involves trading mutual funds shares at the closing price after the market has closed, and puts the customer in a position to profit from any price-relevant information that has emerged after the close. "Market timing" involves holding funds for only a short period of time—most funds do not allow shareholders to make frequent trades based on market timing strategies because it could take advantage of the fact that fund prices are not continuously updated. The opportunity for profits is greatest among funds investing in foreign shares, where differences in time zones can be exploited for short-term arbitrage gains.

There has been no sign of outflows from the mutual fund industry as a whole, even as the list of mutual funds involved in corporate governance issues has grown. Recent data indicate that net inflows to equity mutual funds overall have in fact increased, while there have been flows out of funds involved in the scandals and into other mutual funds (Figure 2.49). Some of those individual funds that were implicated in the scandal, but are perceived to have taken prompt and strong remedial measures, have seen renewed inflows, which suggests that the potential erosion of investor confidence in the mutual fund industry in general can be limited by similar actions by other funds.

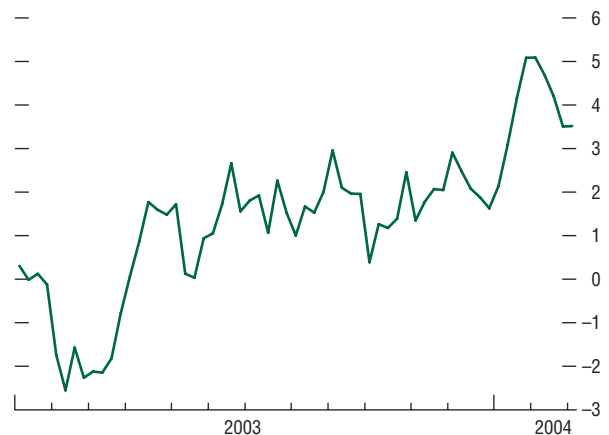
Update on Basel II Developments

The Basel Committee on Banking Supervision continues its work to revise the international accord on bank capital (Basel II). The work aims (in part) to incorporate improved bank risk management systems and more closely align regulatory capital standards with banks' economic capital modeling processes. Recent discussions have focused on issues such as the treatment of expected and unexpected credit losses (including accounting treatment), and credit risk mitigation techniques, as well as a variety of implementation topics. In January 2004, the Committee reported significant progress on some of these issues. In that report, the Committee emphasized, through the supervisory review process (Pillar II), the importance of maintaining appropriate capital buffers beyond the minimum capital requirement (Pillar I). A variety of such supervisory (Pillar II) and implementation issues remain outstanding, including coordination between home and host supervisors. Finalization of Basel II is tentatively planned for mid-2004.

From the point of view of financial stability, the work on Basel II has brought renewed focus on a few key capital markets-related issues:

Figure 2.49. U.S.-Based Equity Mutual Funds: Weekly Net Flows

(In billions of U.S. dollars; four-week moving average)



Source: AMG Data Services.

- How can the potential procyclical effects of a closer dependence of capital requirements on credit evaluation be mitigated?
- Do the proposed rules better achieve a level playing field, with minimum distortions stemming from regulatory incentives?
- With the ever increasing reliance on “appropriate supervision” under Pillar II, do national supervisory authorities have sufficient resources?

A closer dependence of capital requirements on credit risk evaluation implies some degree of procyclicality. This has several components, including the built-in procyclicality stemming from rising risk weightings as credit quality falls, and the behavior of banks’ excess capital over the economic cycle. Basel II could be calibrated to provide banks with incentives to estimate the underlying risk parameters through the cycle and thereby reduce potential procyclical behavior. There has been a healthy dialogue between some of the larger banks and the Committee in this regard, but some degree of procyclicality is likely to persist in a risk-based capital regime.

Leveling the playing field has remained an elusive goal, but such issues are unlikely to overly concern capital market participants. A level playing field has long been a goal of the Basel principles; however, the “menu approach” allows much national discretion and complicates uniform application. One important example in Basel II is the measurement of operational risks, given that it can represent a relatively large share of the overall capital requirement, and any attempt to employ a uniform measure is difficult. Such issues have existed since Basel I, and some degree of national discretion seems appropriate. Nevertheless, the market can be expected to continue to scrutinize the use of supervisory discretion, and thereby differentiate among banks and banking systems, impacting relative costs of capital.

Basel II should improve financial stability; however, the real test will be the final adoption and implementation. Basel II tries to

strike a balance between specific regulatory standards and general supervisory principles. More than under Basel I, Pillar II of Basel II makes clear the key role of supervision, as opposed to regulation and mere written standards. We support this emphasis, and mature market participants have long recognized the importance of supervision relative to regulation. Basel II has the potential to further improve bank risk management systems and banking supervision, and encourage greater market discipline. All of this should improve financial stability. However, particularly outside the G-10 countries, implementation and pursuit of the Basel II principles may stretch supervisory resources.

This section is intended as a brief update on some of the issues, and we intend to conduct a more thorough review in the September 2004 GFSR on the capital market implications of Basel II after the mid-2004 target date for completion of the revised framework.

Appendix I: Determinants of the Rally in Emerging Market Debt—Liquidity and Fundamentals

During the 2003 rally, spreads on emerging market bonds tightened by 347 basis points and the EMBI+ returned 28.8 percent. Improving country-specific fundamentals clearly played an important role in driving this performance. However, low mature market interest rates, buoyant global liquidity, and increased risk appetite have also strongly influenced spread movements. While improvements in fundamentals are, it is to be hoped, a secular trend, the monetary stance driving liquidity is a cyclical phenomenon, and risk appetite is subject to change. It is critical for both investors and policymakers to understand the relative roles of these factors to form a view on the sustainability of low spreads.

The academic literature on emerging market bond spreads has generally found that

country-specific fundamentals (so-called “pull” factors) have played a major role in explaining differences in spreads, especially across countries at a specific point in time. The possibility that “push” factors, such as low interest rates in mature markets, could also be an important determinant of emerging market spreads has been understood for some time. Nevertheless, early empirical studies were unable to detect their influence. However, a number of recent studies have found that mature market interest rates do play the role theoretically expected of them. Furthermore, econometric investigation of the most recent data appears to point to a more important role for U.S. interest rates and risk preference than during earlier periods.

As monetary policies return to more cyclically neutral stances, the role of external drivers is likely to diminish and the role of fundamentals is likely to reassume its historical predominance. This highlights the importance of early and sustained efforts at improving creditworthiness by those countries that wish to maintain access to international capital markets at reasonable cost. This finding also underscores the importance of taking advantage of favorable external financing conditions to improve the maturity profile and composition of debt.

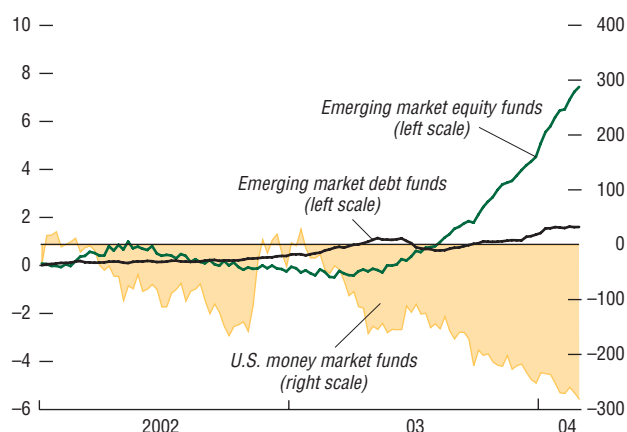
Global Liquidity Versus Fundamentals

Ample liquidity stemming from the looseness of monetary policy in the financial centers was a key driver of the emerging market debt rally in 2003. Negative real short-term rates in the United States catalyzed a broad search for yield that led to portfolio reallocations toward riskier assets throughout the year, including to emerging markets (Figure 2.50).

Earlier, the accelerated easing of monetary policy in the United States following the events on September 11, 2001, had spurred a rally in the emerging bond markets that began in late 2001. Falling policy rates boosted the “carry” offered by emerging bond

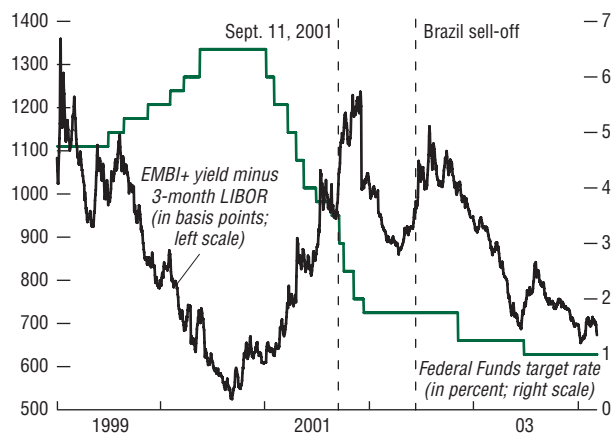
Figure 2.50. Cumulative Flows into U.S.-Based Mutual Funds

(In billions of U.S. dollars, cumulative since January 2002)



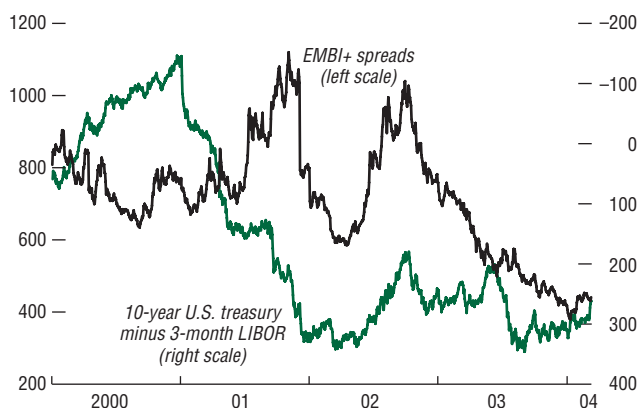
Sources: AMG Data Services; and IMF staff estimates.

Figure 2.51. Federal Funds Rate and Excess Emerging Market Bond Market Yield over Three-Month LIBOR



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

Figure 2.52. EMBI+ Bond Spreads and the Slope of the U.S. Yield Curve
(In basis points)



Sources: Bloomberg L.P.; J.P. Morgan Chase & Co.; and IMF staff estimates.

markets, defined as the differential of the emerging market bond index (EMBI+) yield over short-term borrowing costs (three-month LIBOR). This differential spiked in late 2001, creating incentives for leveraged positions. The ensuing rally, however, was interrupted in mid-2002 by a sell-off triggered by concerns ahead of the presidential elections in Brazil (Figure 2.51).

The emerging bond market rally resumed in late 2002 as investor concerns over the course of policy in Brazil dissipated and amid continued monetary easing in the United States. Throughout the rally, market participants commonly emphasized the risk that a sharper or earlier-than-expected rise in U.S. interest rates could trigger a de-leveraging and sell-off in the emerging debt markets. This view was given weight by the sudden reversal of net inflows to dedicated emerging market debt funds when treasury rates rose during June and July 2003. Again, the FOMC's surprise dropping of the "considerable period" language in its January 2004 statement, widely interpreted as a harbinger of eventual rate rises, sparked an immediate 25 basis point rise in emerging market debt spreads.

At the same time, a secular trend of improving domestic fundamentals in emerging market countries and firmer prospects for global growth have been posited as important drivers of the market's performance. This gives rise to the question of how much of the spread compression in emerging market debt was due to improvements in fundamentals and how much was due to low U.S. interest rates or other factors.

Prima Facie Evidence

The *prima facie* case for the importance of liquidity relative to fundamentals is illustrated by a number of developments.

- The rally in emerging market debt was preceded by an easing of monetary policy in mature markets. For example, the steepness

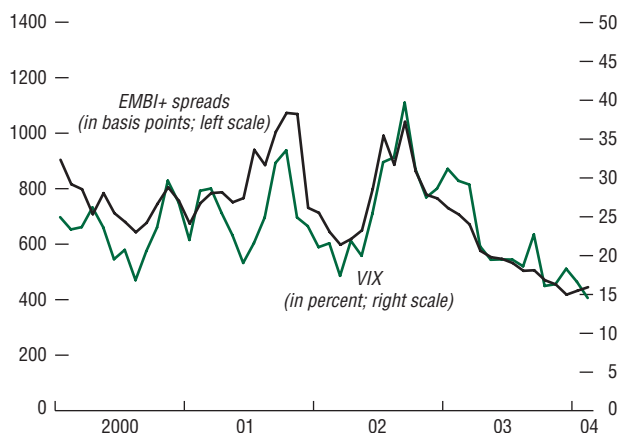
of the U.S. yield curve, a measure of the looseness of U.S. monetary policy, has tracked movements in emerging market spreads reasonably well since late 2001 (Figure 2.52).

- The emerging market rally also appears to coincide with indicators of reduced investor risk aversion. A widely used measure of equity market volatility is also well correlated with emerging market spreads (Figure 2.53).
- Notwithstanding the broader trend of improvements in emerging market creditworthiness and the abatement of concerns over Brazil's policy framework following the 2002 election, the average sovereign rating of emerging market borrowers, weighted by market capitalization, has remained stable since the beginning of the emerging market rally in the fourth quarter of 2002. There have been a number of ratings upgrades during this period, notably Russia, which was upgraded to investment grade, as well as Bulgaria, Malaysia, Poland, and Turkey. At the same time, there have been some downgrades elsewhere, such as the Philippines and Venezuela, as well as an overall shift in the weight of the index toward lower-rated, higher-yielding credits, which have outperformed during the course of the rally (Figure 2.54).
- Increases in average cross-correlations and reductions in the dispersion of returns within the emerging market universe suggest investors became less discriminating, implying a relatively greater role for common factors in driving returns.

The Literature on the Determinants of Emerging Market Spreads

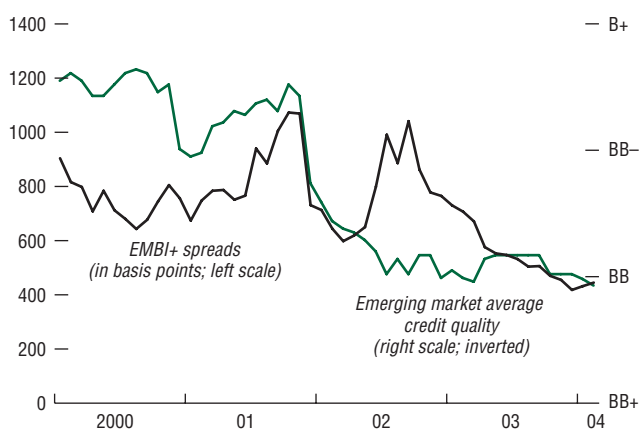
In the last decade, a burgeoning literature has considered the determinants of emerging market spreads. However, earlier work on balance of payments crises and the determinants of capital flows to emerging markets first shed light on many of the pertinent theoretical

Figure 2.53. EMBI+ Bond Spreads and Equity Market Implied Volatility



Sources: Bloomberg L.P.; J.P. Morgan Chase & Co.; and IMF staff estimates.

Figure 2.54. EMBI+ Bond Spreads and Credit Fundamentals



Sources: Bloomberg L.P.; J.P. Morgan Chase & Co.; Moody's; Standard & Poor's; and IMF staff estimates.

issues.¹⁹ While much of this early literature focused on fundamentals in emerging markets as “pull” factors, Calvo, Leiderman, and Reinhart (1993) drew early attention to the potential role of “push” factors in stimulating capital flows.²⁰

The literature on the determinants of emerging market bond spreads was largely stimulated by the rise of the market for Brady bonds in the early 1990s and the subsequent development of widely tracked indices of secondary market bond spreads. In particular, economists sought an explanation for the massive decline in Brady bond spreads in the three years following the Mexican crisis. During this period, spreads fell from a peak of over 1,500 basis points in March 1995 to under 400 basis points by the third quarter of 1997, when the Asian crisis began to push them up again.

On a theoretical basis, it was recognized that lower world interest rates could lower emerging market bond spreads for a number of reasons:²¹

- The possibility of non-repayment of the risky emerging market bond drives a wedge between the riskless return and the return on the emerging market bond that, in equilibrium, is positively correlated with the riskless return. Thus, arbitrage should drive spreads lower when the riskless rate falls.
- A fall in world interest rates lowers debt-servicing costs on floating rate debt, and hence improves creditworthiness of emerging markets. It also lowers the rates at which existing debts must be rolled over.
- A fall in world interest rates should increase investor risk tolerance, which should drive spreads on risky bonds lower.

Nevertheless, early empirical literature on emerging market bond spreads failed to find the predicted relationship between world interest rates and emerging market bond spreads. Studying launch spreads on emerging market bonds, Cline and Barnes (1997) and Min (1998) failed to find significant relationships between U.S. treasury yields and emerging market spreads. Using both a broader sample of launch spreads and secondary market Brady bond spreads, Kamin and von Kleist (1999) also failed to find the expected relationship, either finding no significance, or in some cases, finding that industrial country interest rates were negatively related to spreads.

Eichengreen and Mody (1998) postulated that a selectivity bias could lead to a failure to find the proposed relationship, since at a time of high interest rates, lower-quality borrowers would be unlikely to issue, biasing launch spreads down during such times. They used a two-step process to first estimate the impact of fundamentals and U.S. treasury yields on the probability that an emerging market borrower would issue, and then studied separately the impact of fundamentals and treasury yields on launch spreads. They found that higher U.S. yields did indeed significantly reduce the probability of an issue. However, they found that spreads tended to move in the opposite direction to treasury yields, so that a decrease (increase) in treasury yields actually increased (decreased) spreads. They attributed this finding to the fact that supply considerations were outweighing demand considerations. While, say, lower U.S. rates may have increased the demand for emerging market bonds, the influence of such rates in inducing emerging markets to issue additional supply more than

¹⁹See Kaminsky, Lizondo, and Reinhart (1998) for an overview of the theoretical and empirical literature on balance of payments crises.

²⁰The authors note that “falling interest rates, a continuing recession, and balance of payments developments in the United States” were common external factors that had helped stimulate flows to a wide swathe of Latin American countries in the early 1990s.

²¹See Kamin and von Kleist (1999) for a more detailed exposition.

compensated for the additional demand, thus increasing spreads.

Most studies found statistically significant influences (and generally of the expected sign) for fundamental factors in determining spreads. For instance, Min (1998) found that improved indicators of domestic solvency and liquidity (debt/GDP, foreign exchange reserves/GDP, and debt service ratios) and better macroeconomic fundamentals (such as lower inflation rates and better terms of trade) tended to reduce spreads. Eichengreen and Mody (1998), Kamin and von Kleist (1999), and Sy (2002) all found that improved credit ratings were correlated with lower spreads.²²

Studies however have tended to find that fundamentals are better at explaining differentials in spreads across countries at a given point in time than they are the changes in spreads over time. Eichengreen and Mody (1998) found that a significant component of spread movements over time could be explained neither by fundamentals nor external factors such as U.S. interest rates or oil prices. Thus, for example, factors that may be difficult to observe directly, such as changes in investors' risk appetite or herding behavior resulting from imperfect information, may have explained episodes of significant spread movements over time, such as the 1995–97 period when spreads fell dramatically (see, for example, Ferrucci, 2003).²³

The existence of moral hazard has been cited as one potential explanation for spread

compression not related to directly observable factors. This theory posits that investors may not need to be greatly concerned with the creditworthiness of sovereign borrowers if they believe that official lending would allow such borrowers to continue to service their debt, even though the country might be insolvent in the absence of such official support.²⁴ Dell'Ariccia, Schnabel, and Zettelmeyer (2002) tested this theory by trying to ascertain if emerging market spreads behaved differently after the Russian default. They interpreted that event as a largely unanticipated episode that reduced investors' expectations of future bailouts by the IMF. They found evidence of permanent and significant increases in spreads following the IMF "non-bailout," as well as a significantly higher dispersion of cross-country spreads, suggesting investors were subsequently paying closer attention to country fundamentals. At the same time, they noted that it is not possible to distinguish between the existence of moral hazard from IMF lending, and the possibility that IMF lending raises expectations for improved policy, which could lead to an improved assessment of fundamental creditworthiness.

More recent work has tended to find a greater role for industrial country interest rates in explaining emerging market spreads. Econometric work undertaken by Arora and Cerisola (2001) used a range of domestic fundamentals and U.S. interest rates on a sample period covering the second half of the 1990s.

²²Eichengreen and Mody used the residual from a regression of spreads on fundamentals since they wished to avoid multicollinearity issues that would stem from including both credit ratings and fundamentals in the same regression. Kamin and von Kleist and Sy excluded such domestic fundamentals from their regressions, using ratings as a proxy for them.

²³Calvo and Mendoza (1995) explain how costly information can lead to such behavior. If investors are highly diversified, their holdings of a given credit may be quite small, and thus it may not be worth incurring the information costs to be well informed about that credit's fundamentals. Therefore, incremental deterioration in creditworthiness may not come to the attention of such investors. But when an important piece of information does become widely known, it may trigger a large, discrete reassessment of the credit's prospects, as well as other credits with at least superficially similar characteristics (on which it is also not worth incurring the monitoring costs). This may lead to large jumps in spreads and contagion among apparently similar credits.

²⁴Dell'Ariccia, Schnabel, and Zettelmeyer (2002) distinguish such "investor moral hazard" from "country moral hazard," which would refer to a deterioration of domestic policy because of the "insurance" function provided by official assistance.

Consistent with previous literature, they found an important role for country-specific fundamentals in determining spreads. However, in contrast to previous findings, notably Eichengreen and Mody, they found that U.S. interest rates and emerging market spreads were positively correlated (so that lower U.S. rates lower spreads).²⁵ They attribute the difference to a combination of the use of secondary market spreads, which avoid the selectivity bias problem noted above, and the fact that Eichengreen and Mody included in their sample period 1991–93 when selectivity bias may have been particularly strong due to the nascent nature of the emerging bond market.

More recent work by Ferrucci (2003) finds that while short-term U.S. treasury rates tend to be positively correlated with spreads, long-term rates (10-year treasury yields) are actually negatively correlated with spreads. Put another way, Ferrucci finds that a steeper U.S. yield curve is associated with lower emerging market spreads, a result he suggests may be attributable to the presence of leveraged investors, who borrow at short-term rates to lend at longer-term rates.²⁶

Applying common factor analysis, McGuire and Schrijvers (2003) found a significant role for a single common external factor underlying the variation of spreads across the constituents of the EMBI Global index.²⁷ This factor accounted for about one-third of the variation of emerging bond market spreads,

with the remainder driven by factors that were unique to a country's circumstances. The authors find that the best fit for the common factor is investors' attitude toward risk as proxied by the VIX (the volatility implied by options on the S&P 500 index). Given that volatility has fallen sharply since the recovery in the equity markets that began in late 2002, this suggests at least one important factor behind the recent rally is declining risk aversion.²⁸

Recent Empirical Evidence

Very recent empirical work, including some undertaken by IMF staff for this report, appears to reinforce the widespread market view that liquidity and an increase in risk appetite have become relatively more significant influences on spreads than fundamentals in the emerging market debt rally that began in late 2002. Models based purely on fundamentals have found that recent emerging market bond spreads are generally tighter than can be justified by the models (Figure 2.55).

For example, an update of Sy (2002), which reports on univariate regressions of spreads on ratings from credit agencies, finds that even after the sell-off induced by the FOMC statement of January 2004, market spreads were considerably tighter than could be justified by current ratings. In previous instances in which spreads were tighter than suggested

²⁵They find this not only for three-month and 10-year treasury rates, but also for the Fed funds target rate, which they view as a more direct measure of U.S. monetary policy.

²⁶Ferrucci uses secondary market spreads like Arora and Cerisola, but uses panel data over the longer period 1992–2003. Like Eichengreen and Mody, he finds that spreads in 1995–97 fell too much to be explained by measured fundamentals, thus pointing either to some degree of mispricing during that period or to the importance of unmeasured fundamentals. His work also confirms the importance of country-specific macro-fundamentals.

²⁷This result is derived by applying common factor analysis and builds on earlier work by Litterman and Scheinkman (1991). Common factor analysis seeks to construct a single abstract series that explains some portion of the common factor of variations in correlated series. After identifying the abstract common factor, McGuire and Schrijvers seek economically meaningful explanations, which they do by seeing which among a range of candidate data series are best correlated with the common factor.

²⁸McGuire and Schrijvers also find a significant, but smaller, correlation with 10-year U.S. treasury yields, but the correlation is negative. They suggest one possible interpretation is that a steepening yield curve is associated with expectations of future industrial country growth, which, by increasing the creditworthiness of emerging market borrowers, could reduce spreads.

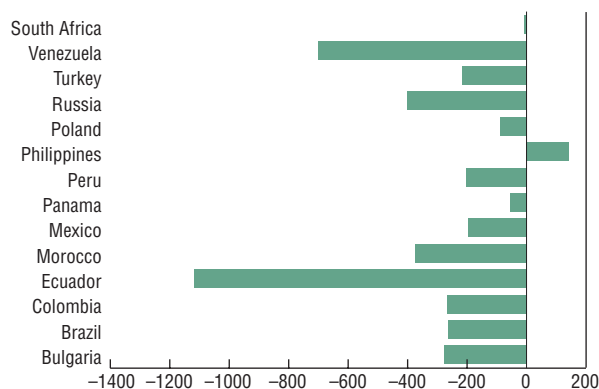
by the model, Sy found that, subsequently, credit upgrades were more likely than spread widening, suggesting ratings may lag spread developments. While this may again be a possibility, almost all of the deviations of actual compared to predicted spreads were considerably larger than could be explained even by a future two-notch upgrade.²⁹

Work undertaken by IMF staff for this report suggests that global liquidity has become the most important determinant of emerging market spreads following September 2001. A simple econometric model was devised with a view to identifying the drivers of the latest emerging bond market rally. Theoretical predictions suggested the model should include relevant measures of country-specific fundamentals, global liquidity as represented by mature market interest rates, the expansion of demand through the widening investor base, and risk preference.

The specific model used is described below. The main conclusions are that the variables are significant and the signs are as expected, with improved fundamentals, greater global liquidity, higher investor demand, and lower volatility all lowering spreads. However, while improving fundamentals are found to have been a significant factor driving the contraction of emerging bond market spreads, the estimation results indicate that liquidity stemming from the U.S. interest rate easing cycle has become a more important influence than fundamentals in the emerging bond market rally. While the small sample size warrants caution, this finding gives weight to the commonly expressed market view that the push factor of ample global liquidity has been a key driver of the latest emerging market rally. This result also underscores the potential vulnera-

Figure 2.55. Deviations of Actual Spreads from Ratings-Based Spreads

(In basis points, actual spreads as of February 3, 2004)



Sources: J.P. Morgan Chase & Co.; Standard & Poor's; Moody's; and IMF staff estimates.

²⁹Sy found that a one-notch upgrade tended to reduce spreads by 14 percent, which for a 500 basis point spread would amount to a tightening of 70 basis points. However, most of the actual spreads in early February 2004 were more than 200 basis points tighter than suggested by the model.

bility of emerging bond markets in case of monetary tightening.

The variables considered for the model were:

- *Spreads (S)*: The dependent variable, emerging bond market spreads, were captured by the spread on the EMBI index for the period 1994–97 and thereafter by the EMBI+ index.
- *Fundamentals (F)*: Country-specific fundamentals were modeled using sovereign credit ratings. Although ratings are a useful general indicator of country-specific fundamentals, they are subject to the criticism that they may also be influenced by global variables such as those included in the regression, which could lead to some bias in the estimates. Nevertheless, credit ratings impact investment decisions, given that institutional investor policies are often tied to credit quality. In order to get a summary measure of ratings for the EMBI+ universe, the specific variable used was a weighted index of the average credit quality of the constituents of the EMBI/EMBI+ universe. The ratings are an average of those assigned by S&P, Moody's, and Fitch, while the country weights correspond to those in the EMBI/EMBI+.³⁰
- *Global Liquidity (GL)*: Interest rates provide a measure of global liquidity to the extent that they impact asset prices by catalyzing borrowing to finance investment positions. A number of interest rate variables were considered in order to capture the incentives for emerging bond market investors to undertake leveraged trades, including the level of short-term rates, the level of long-term rates, and the steepness of the yield curve as measured by the spread between short- and long-term rates. However, only the short-term interest rate was significant in the regressions. The particular short-term rate used was the three-month dollar LIBOR rate, since this interest rate serves as a benchmark in determining the costs of borrowing for investors seeking to build leveraged positions.³¹
- *Demand (D)*: The secular broadening of the emerging market investor base is difficult to quantify. Data series on flows to dedicated emerging market bond mutual funds are available. However, investment flows from retail investors are likely to be a poor proxy for total flows, particularly during times when the investor base has broadened significantly. More specifically, this data would fail to capture net flows from institutional investors, trading accounts, and local investors, all of which represent important components of the changes in the investor base.³² However, primary market issuance could provide a reasonable proxy measure for overall demand. In the process of building the order book for a new bond, underwriters go through a careful process of ascertaining demand for the new issue before deciding whether to bring it to the market. Thus, new gross supply of bonds appears likely to serve as a reasonable proxy for the changing size of the investor base, and the model uses a 12-month moving average of gross primary issuance as a proxy for this demand.³³

³⁰The model was also estimated for lagged ratings, but the coefficients were broadly similar to those shown below, in part reflecting the high serial correlation embedded in the ratings series.

³¹Other measures of short-term rates, such as the Fed Funds target rate or three-month treasury bill rates, are very closely correlated with the three-month LIBOR rate.

³²Nonetheless, net inflows to dedicated emerging market funds were tested in the regression but were insignificant.

³³One caveat to the assumed broad equilibrium of demand and supply is that there may be times of insufficient demand in which lead managers may absorb a sudden and unanticipated excess supply of bonds. However, the compression of issuance fees and a cautious approach to the deployment of capital suggests that the ability of lead managers to absorb unwanted supply is limited.

Table 2.5. Results of Estimate*(t-statistics in parentheses)*

Variable	Estimation Period		
	Jan 1994–Sep. 2001	Oct. 2001–Dec. 2003	Jan. 1994–Dec. 2003
Fundamentals	–30.24 (–0.93)	–131.56 (–2.98)	–52.15 (–1.90)
Global liquidity	27.54 (0.75)	276.90 (2.90)	53.12 (2.16)
Demand	–161.11 (–6.66)	–29.60 (–0.87)	–140.60 (–6.77)
VIX	101.54 (5.88)	133.65 (7.13)	95.23 (6.74)
Crisis dummy	115.37 (6.84)		109.54 (7.71)
R ²	90%	89%	90%

Source: IMF staff estimates.

- *VIX*: The model tested two possible proxies for investors' attitude toward risk. During times of reduced risk aversion, investors are more likely to move out the credit quality spectrum. Thus, one possible measure of changing investor attitude toward risk is the spread between high-yield and high-grade corporate bonds. In addition, increased risk taking is likely to lead to less hedging against volatility. This is most commonly proxied by using the VIX. This index measures the volatility implied by options contracts on the S&P 500 index. In all specifications of the regression, the VIX proved a strong explanatory variable and was included in the final regression. However, the spread between high-yield and high-grade bond yields did not add significantly to the explanatory power of the regressions, and was dropped from the final specification.
- *Crisis dummy (CD)*: The model corrects for crisis periods with spreads exceeding 1,000 basis points by introducing a dummy variable for such periods.

In a first step, the model is estimated for the period from January 1994 through December 2003 using monthly data.³⁴ In a second step, the model is estimated for two sub-periods: the period from 1994 to

September 2001; and the period from October 2001 to end-2003 (see Table 2.5). The beginning of the latter period coincided with the onset of an emerging bond market rally, which, however, faced a temporary reversal in mid-2002.³⁵ All independent variables are standardized, allowing for comparisons of the relative impact of these variables on spreads.

$$S_t = \alpha_0 + \alpha_1 F_{t-1} + \alpha_2 GL_t + \alpha_3 D_t + \alpha_4 VIX_t + \alpha_5 CD_t + \varepsilon_t,$$

where $\varepsilon_t = \rho\varepsilon_{t-1} + \eta_t$.³⁶

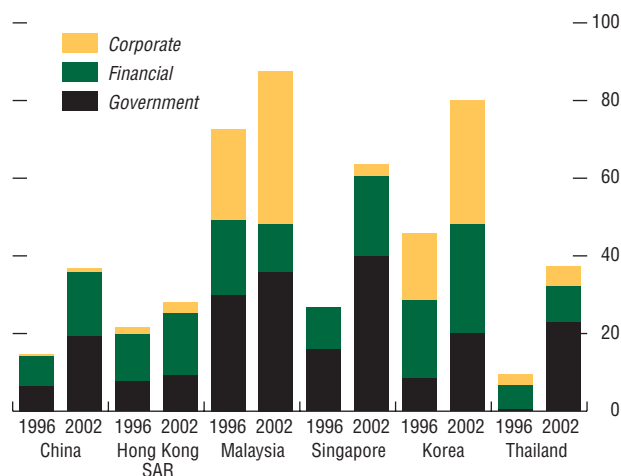
- *Fundamentals* are found to be a statistically significant driver of emerging market bond spreads for the sub-period starting October 2001 and for the entire time period of 1994 to 2003, although at a lower level of significance for the latter. However, fundamentals are not found to be statistically significant for the sub-period of 1994 to 2001. This result may in part reflect the high incidence of crises during this period as captured by the crisis dummy.
- *Global liquidity* is a statistically significant explanatory variable for the entire estimation period and for the sub-period beginning in October 2001. However, the impact of global liquidity on spreads exceeds that of any other variable since October 2001. In

³⁴The analysis of the properties of the time series data and estimation results shows that the model is not subject to shortcomings associated with nonstationarity.

³⁵Estimating the model since the onset of the leg of the rally that began in October 2002 would have excessively reduced the sample size.

³⁶This formulation controls for possible problems associated with autocorrelated errors.

Figure 2.56. Selected Asian Countries: Outstanding Amounts of Domestic Bonds
(In billions of U.S. dollars)



Sources: Bank for International Settlements; and IMF, *World Economic Outlook*.

contrast, global liquidity is not found to be statistically significant during the sub-period of 1994 to 2001.

- *Demand* is a statistically significant driver of spreads for the entire period. However, demand is not found to have had a statistically significant impact on spreads during the sub-period beginning in October 2001. One possible explanation is that primary issuance may not be a good proxy for the additional demand that has been generated by the secular broadening of the investor base during this period.
- *VIX* and investors' attitude toward risk is found to have been a significant driver of emerging bond market spreads during all periods, underscoring the vulnerability of the asset class to a reversal in risk tolerance.

Appendix II: Current Status of the Asian Bond Markets and Initiatives

Development of the Asian Bond Markets Since the 1998 Crisis

Local bond markets in Asia grew rapidly after the financial crisis in the late 1990s, in part reflecting a desire to develop an alternative source of financing to bank lending and foreign borrowing (Figure 2.56). Local bond markets have been viewed as mitigating the impact of lost access to international capital markets, as well as reducing the inherent currency and maturity mismatch in the borrowing of emerging market countries.

The share of Asian bonds outstanding in the total world bond market went from 2.9 percent of GDP in 1998 to 3.4 percent in 2002 (Table 2.6). Government bonds account for more than 45 percent of the total bonds outstanding in Asia.

Despite the rapid growth of its bond market, Asia remains heavily dependent on bank financing (Table 2.7). Moreover, Asian bond markets suffer from limited liquidity and depth. As a result, the authorities in a number of countries have started to take steps to

Table 2.6. Size and Structure of the Global Bond Market in 2002*(Nominal value in billions of U.S. dollars)*

Country	Total Bonds Outstanding	Percent of World Bond Market	Domestic							
			Government		Financial institutions		Corporate		International ¹	
			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	19,049.3	44.5	4,530.3	23.8	9,382.2	49.3	2,418.3	12.7	2,718.5	14.3
Euro area ²	10,199.4	23.8	3,818.7	37.4	2,269.2	22.2	548.8	5.4	3,562.7	34.9
Japan	6,914.6	16.2	4,837.5	70.0	1,145.8	16.6	683.0	9.9	248.3	3.6
Other mature markets	4,257.6	9.9	1,284.7	30.2	933.2	21.9	491.3	11.5	1,548.4	36.4
Subtotal	40,420.9	94.4	14,471.2	35.8	13,730.4	34.0	4,141.4	10.2	8,077.9	20.0
<i>Emerging Markets</i>										
Asia	1,448.7	3.4	645.1	44.5	387.1	26.7	262.8	18.1	153.7	10.6
Latin America	527.9	1.2	272.5	51.6	56.3	10.7	27.0	5.1	172.1	32.6
Eastern Europe, Middle East, Africa	403.5	0.9	260.4	64.5	12.7	3.1	8.0	2.0	122.4	30.3
Subtotal	2,380.1	5.6	1,178.0	49.5	456.1	19.2	297.8	12.5	448.2	18.8
Total	42,801.0	100.0	15,649.2	36.6	14,186.5	33.1	4,439.2	10.4	8,526.1	19.9

Source: Bank for International Settlements.

¹Includes bonds issued by governments, financial institutions, and corporates in international markets.²Euro area includes a total of 11 members of the euro zone, excluding Luxembourg.

strengthen both local and regional bond markets.

Regional Initiatives Promoting the Development of Local Bond Markets

A number of initiatives in various regional fora have been taken to further the development of local and regional bond markets. These include the Asian Bond Funds (ABF) and Asian Bond Market initiative (ABMI), from the Executive's Meeting of East Asia Pacific Central Banks (EMEAP), and APEC and ASEAN+3, respectively.³⁷

These initiatives aim at developing both the demand and supply sides of Asian bond markets. On the demand side, the aim is to move away from both bank financing and U.S. dollar financing and to develop the local currency bond markets as an alternative source of funding. On the supply side, these initiatives seek to develop better bond market infrastructures and to synchronize rules and regulations

on cross-border flows so that local issuers can raise funds across the region. In particular, the Asian Bond Funds aim to increase the demand for Asian bonds and to facilitate the development of the regional bond market by using some foreign exchange reserves to invest in regional instruments. The ABMI focuses on addressing some of the supply-side impediments that exist in Asia and make local bond markets more accessible to Asian issuers.

Asian Bond Funds

On June 2, 2003, EMAEP announced the launch of the Asian Bond Fund I (ABFI) to “channel the resources held by Asian economies back into the region.” ABFI had an initial funding of \$1 billion contributed by the 11 members of the EMEAP to invest only in U.S. dollar-denominated sovereign or quasi-sovereign bonds issued by eight of the EMEAP members (excluding Japan, Australia, and New Zealand). To maintain these contributions as reserve assets, ABFI invested in bonds

³⁷The 11 members of EMEAP are: Australia, China, Hong Kong SAR, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, the Philippines, Singapore, and Thailand. ASEAN+3 refers to countries under the Association of South East Nations plus China, Japan, and Korea. More information on EMEAP can be found at <http://www.emeap.org>.

Table 2.7. Structure of Financing in Selected Countries

	GDP	Bank Loans	Stock Market Capitalization	Bond Market
<i>(In billions of U.S. dollars)</i>				
China	1,266	1,728	463	465
Hong Kong SAR	162	242	463	68
Indonesia	173	39	30	2
Korea	477	510	216	381
Malaysia	95	101	123	83
Philippines	78	25	18	22
Singapore	87	94	102	55
Taiwan Province of China	282	354	261	141
Thailand	126	103	45	53
<i>(In percent of GDP)</i>				
China		136	37	37
Hong Kong SAR		150	287	42
Indonesia		22	17	1
Korea		107	45	80
Malaysia		107	130	88
Philippines		32	23	28
Singapore		109	117	63
Taiwan Province of China		126	93	50
Thailand		81	36	42

Sources: Bank for International Settlements; IMF, *International Financial Statistics*; Hong Kong Monetary Authority; Indonesian Central Bank; The Thai Bond Dealing Centre; and World Federation of Exchanges.

with a composite investment grade rating. The fund is passively managed by the BIS according to an unpublished benchmark, and the BIS has agreed to redeem the investments at market value to the member countries at any time to safeguard their liquidity as official reserves.

Since the launch of ABFI in June 2003, discussions on ABFII have started but details are still not finalized. In contrast to ABFI, ABFII will invest in the participating countries' local currency sovereign and quasi-sovereign bonds and aims to generate more investor interest in local bond markets. Countries that are ready to open up their bond markets to foreign investment will participate, while those still facing significant hurdles in taxation, legal, and capital account restrictions will need to work to eliminate those obstacles over time to eventually allow for foreign investment in their bond markets.

In setting up ABFII, private sector participation is regarded as important both as potential future investors in the fund and as potential managers for the fund. It is likely that the private sector will be involved in structuring, marketing, and listing the fund and that the ABFII will likely be managed by the private sector (rather than the BIS as in the case of ABFI).³⁸

Asian Bond Market Initiative

The Asian Bond Market Initiative (ABMI) is a broad umbrella covering many areas of bond market development. It has focused on facilitating access to bond markets, and enhancing market infrastructure for local and regional bond market development. In particular, six elements of market infrastructure are receiving particular attention: creating new securitized instruments, credit guarantee mechanisms, settlement and exchange regulations, issuance of local currency bonds by non-domestic issuers, local and regional rating agencies, and technical assistance coordination. The goal is to identify measures that can address some of the deficiencies in the current Asian bond markets, such as low liquidity, narrow investor bases, and limited high grade issuance. For example, securitization and credit guarantee will help Asian issuers with low credit ratings to issue high-grade bonds to gain access to the market. With the exception of Hong Kong SAR and Singapore, most countries do not have a settlement and clearing system conforming to international standards. Local credit rating agencies have different rating standards, and there is no regionally accepted credit rating system. Developing a settlement and clearing system consistent with international best practices and a uniform credit rating standards throughout the region would help reduce issuance costs, and improve market efficiency and liquidity.

³⁸As reported in *Euroweek* (2003) and *International Financing Review* (2003).

New securitized instruments, especially asset backed securities (ABS), have been developing rapidly in Asia. In Korea, ABS issuance has risen sharply following the Asian crisis. ABS now represent almost 44 percent of corporate issuance largely reflecting securitization of nonperforming loans and credit card receivables (Figure 2.57). In Malaysia, the growth of the ABS market is expected to double from RM5.6 billion (\$1.5 billion) in 2004. The strong growth has been spurred by a supportive legal environment and regulatory regime; a well functioning capital market infrastructure; and strong investor interest. Moreover, Hong Kong SAR is becoming a regional center for securitization activity in Asia.

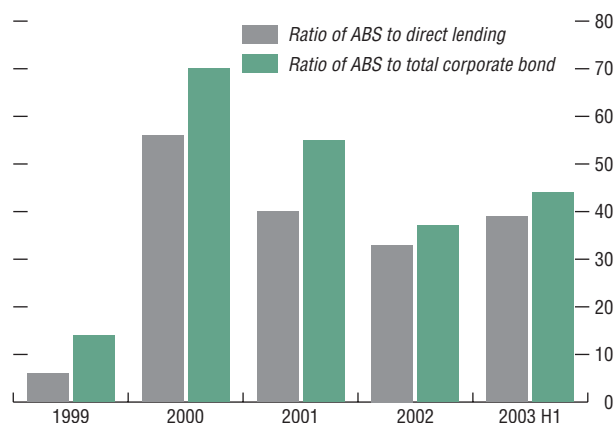
Asian rating agencies have formed an association to enhance cooperation.³⁹ Most countries now have local rating agencies as well as limited participation of the international rating agencies in the local market (Table 2.8). The two regional financial centers, Hong Kong SAR and Singapore, on the other hand, do not have local rating agencies but rely on international rating agencies to rate local issues. In contrast to the international agencies, many of these regional or national rating agencies have links with their respective governments (or may have been set up as a governmental body), thus their degree of independence is open to question. Moreover, given the differences in rating culture and stage of capital market development, creating a unified credit rating system may not be feasible in the near term. Efforts are being made to raise rating standards and credit evaluation and to adopt best practices in the region.

Assessment of the Initiatives

The small size of the ABFI has limited its market impact, while its objective is well

³⁹The Association of Credit Rating Agencies in Asia (ACRAA) is an association formed by Asian credit rating agencies and assisted by the Asian Development Bank.

Figure 2.57. Korea: ABS Issuance and Direct Financing
(In percent)



Sources: Korea Ratings Corp.; and IMF staff estimates.

Table 2.8. Asian Rating Agencies

Country	Bond Rating Agency		Year Founded	Tie-Ups with International Rating Agencies
India	Investment Information and Credit Rating Agency of India Ltd	(ICRA)	1991	Moody's
	Credit Analysis and Research Limited	(CARE)	1993	
	Credit Rating Information Services of India Limited	(CRISIL)	1987	S&P
	Duff and Phelps India	(DCR India)	n.a.	Joint Venture with Fitch
Pakistan	JCR-VIS Credit Rating Company Limited	(JCR-VIS)	1997	Joint Venture with JCR
	Pakistan Credit Rating Agency (Private) Limited	(PACRA)	1994	Joint Venture with Fitch
Indonesia	PT Pemeringkat Efek Indonesia	(PEFINDO)	1993	S&P
	Kasnic	(KASNIC)	n.a.	Fitch
Taiwan Province of China	Taiwan Rating Corporation	(TCR)	1997	S&P
Philippines	Philippine Rating Service Corporation (PhilRatings)	(PRS)	1998	S&P
Japan	Japan Credit Rating Agency, Limited	(JCR)	1985	Independent
	Japan Rating and Investment Information Inc	(R&I)	1998 ¹	Independent
Korea	Korean Investor Services	(KIS)	1985	Moody's
	Korean Management Consulting and Credit Rating Corporation	(KMCC)	1987	Fitch
	National Information and Credit Evaluation	(NICE)	1986	R&I
	Seoul Credit Rating & Information Inc.	(SCI)	1992	JCR
Malaysia	Rating Agency Malaysia	(RAM)	1990	Independent
	Malaysia Rating Corporation	(MARC)	1996	Fitch
Thailand	Thailand Rating Information Services	(TRIS)	1993	Fitch
Bangladesh	Credit Rating Information & Services	(CRIS)	2002	—
Hong Kong SAR	No local rating agencies		—	—
Singapore	No local rating agencies		—	—

Source: Japan Credit Rating Agency, Ltd.

¹Union of NIS and JBRI in 1998.

grounded. ABFI has generated interest in Asian bond markets and paved the way for ABFII. In particular, ABFII could be an important investor in local Asian bond markets. The ABFs could have a catalytic role in encouraging countries in the region to harmonize regulatory regimes and improve legal infrastructure to allow more private sector participation in the local bond markets.

Careful consideration should be given when designing the ABFII. First, ABFI by virtue of design and the liquidity guarantee provided by BIS permits assets invested in it to be classified as reserve assets. Future funds will need to provide a similar level of liquidity if assets invested were to be counted as reserve assets. Moreover, safeguards could be useful to minimize any perception of moral hazard and governance risks. To this end, outsourcing the

management of ABFI to the BIS and inviting private sector managers for ABFII (which is likely to be designed as an indexed or passively managed fund) can ensure transparency, gain public support, and establish credibility vis-à-vis investors. It would also be desirable for the authorities to continuously disclose sufficient information to assure the public that funds are properly managed and invested.

No matter what form the ABFII fund takes, the authorities and other future investors will face the issue of whether and how to hedge the underlying credit and currency risks. This may be difficult since derivatives markets in Asia are still at an early stage of development. Moreover, if both ABF funds are buy-and-hold investors, their purchases of the bonds issued by the regional governments

could even reduce the liquidity of those markets.

The ABMI could play a key role in promoting both the development of the infrastructure and access to the regional bond markets. Discussions surrounding ABMI have successfully focused the attention of policymakers in Asia on the various obstacles to developing local bond markets and generated discussions about adopting best practices in various areas of bond market development. Initiatives on providing credit enhancements to small- and medium-sized firms that otherwise are denied access to capital markets are a step forward.

However, an integrated regional bond market will clearly take time to develop. The Asian bond market, while large, remains segmented by regulatory constraints and owing to a lack of regional infrastructure. Country-specific laws, regulations, and market practices present major hurdles to cross-border issuance and investing. Clearing and settlement mechanisms vary from country to country, and there is no regional arrangement. Hedging costs remain relatively high due to illiquid derivative markets and regulatory constraints on access to both local currency funding and to onshore forward and derivatives markets by nonresidents. Taxation differs vastly and withholding tax can raise the cost of investing in local securities. Local credit rating standards vary, and there is no regional credit rating agency. Many countries in the region do not yet have a liquid benchmark yield curve. Finally, capital controls in a few countries have severely limited cross-border capital flows.

References

- Arora, Vivek, and Martin Cerisola, 2001, "How Does U.S. Monetary Policy Influence Sovereign Spreads in Emerging Markets?" *IMF Staff Papers*, International Monetary Fund, Vol. 48 (November), pp. 474–98.
- Asian Development Bank, 2003, "Technical Assistance for the ASEAN+3 Regional Guarantee Mechanism" (October).
- Calvo, Guillermo A., Leonardo Leiderman, and Carmen Reinhart, 1993, "Capital Inflows and Real Exchange Rate Appreciation in Latin America: The Role of External Factors," *IMF Staff Papers*, International Monetary Fund, Vol. 40 (March), pp. 108–51.
- Calvo, Guillermo, and Enrique Mendoza, 1995, "Mexico's Balance-of-Payments Crisis: A Chronicle of a Death Foretold," *Journal of International Economics*, Vol. 41, pp. 235–64.
- Capital Markets Consultative Group (CMCG), 2003, *Foreign Direct Investment in Emerging Market Countries*.
- Cline, William, and Kevin Barnes, 1997, "Spreads and Risk in Emerging Markets Lending," Working Paper 97-1 (Washington: Institute of International Finance).
- Dell'Ariccia, Giovanni, Isabel Schnabel, and Jeromin Zettelmeyer, 2002, "Moral Hazard and International Crisis Lending: A Test," IMF Working Paper No. 02/181 (Washington: International Monetary Fund).
- Eichengreen, Barry, and Ashoka Mody, 1998, "What Explains Changing Spreads on Emerging-Market Debt: Fundamentals or Market Sentiment?" NBER Working Paper No. 6408 (Cambridge, Mass.: National Bureau of Economic Research).
- Euroweek*, 2003, "Central Banks to finalize Asia Bond Fund 2 by December" (October 17).
- Ferrucci, Gianluigi, 2003, "Empirical Determinants of Emerging Market Economies' Sovereign Bond Spreads," Bank of England Working Paper No. 205 (London).
- Goldstein, Morris, and David Folkerts-Landau, 1994, *International Capital Markets: Developments, Prospects, and Policy Issues*, World Economic and Financial Surveys (Washington: International Monetary Fund).
- International Financing Review*, 2003, "Asian Bond Fund 2 Starts to Take Shape" (November 22).
- Kamin, Steven B., and Karsten von Kleist, 1999, "The Evolution and Determinants of Emerging Market Credit Spreads in the 1990s," BIS Working Paper No. 68 (Basel: Bank for International Settlements).
- Kaminsky, Graciela, Saul Lizondo, and Carmen M. Reinhart, 1998, "Leading Indicators of Currency Crises," *IMF Staff Papers*, International Monetary Fund, Vol. 45 (March), pp. 1–48.
- Litterman, Robert, and José Scheinkman, 1991, "Common Factors Affecting Bond Returns," *Journal of Fixed Income*, pp. 54–61.

- McGuire, Patrick, and Martijn A. Schrijvers, 2003, "Common Factors in Emerging Markets," *BIS Quarterly Review* (Basel: Bank for International Settlements, December).
- Min, Hong G., 1998, "Determinants of Emerging Market Bond Spreads: Do Economic Fundamentals Matter?" Policy Research Paper No. 1899 (Washington: World Bank).
- Sy, Amadou, 2002, "Emerging Market Bond Spreads and Sovereign Credit Ratings: Reconciling Market Views with Economic Fundamentals," *Emerging Markets Review*, Vol. 3, Issue 4, pp. 380–408.
- Thailand, 2003, Ministry of Finance, "Asian Bond Market Development."
- Watanabe, Hiroshi, 2003, "Asian Bond Markets Initiative (ABMI)," presentation at the Euromoney conference on "Developing Asian Bond Markets" (October), Bangkok, Thailand.