

In the April 2005 *Global Financial Stability Report* (GFSR), we noted that financial conditions were quite positive, leading risks to be skewed on the down side. Financial market developments since then have reduced risks somewhat, at least for the near term. However, the same forces that have supported buoyant financial markets have also created larger global imbalances and higher levels of debt, thus storing up potential vulnerabilities for the future.

Financial conditions have remained broadly positive over the past six months, but some market developments diverged from consensus expectations of market participants.

First, long-term interest rates, instead of rising, as expected by some investors, have moderated, leading to a further flattening of global yield curves. This reflected cyclical factors, as market participants seemed to expect more moderate global growth and inflation, and structural factors such as a secular portfolio shift toward long-term bonds (and away from equities) by pension funds and life insurance companies. With interest rates remaining low in both real and nominal terms, still-ample global liquidity continues to drive the search for yield, which has reduced credit spreads, including in emerging bond markets, to low levels.

Second, low bond yields, flat yield curves, and tight credit spreads have led market participants to seek returns through “relative value” arbitrage trades and through the leverage embodied in complex financial derivatives, such as credit derivatives. Potential risks in these derivatives surfaced in May 2005 when hedge funds experienced losses from such trades, following a breakdown in expected default correlations in corporate credit markets. As the losses were largely confined to specific hedge funds engaged in

these trades, this episode may have served to remind market participants to avoid complacency and to strengthen counterparty risk management, thus helping enhance financial stability. Nevertheless, risks of corrections in these markets are likely to surface again, demanding vigilance by market participants and supervisors alike.

Third, the U.S. dollar appreciated in the first half of 2005, as market participants focused on growth and interest rate differentials in favor of the United States, rather than on the growing U.S. current account deficit. So far, ample capital flows have accommodated the deficit, although growing global imbalances constitute a growing medium-term vulnerability.

We have probably reached the peak of the credit cycle as corporations have begun to increase the leverage of their balance sheets in a variety of ways. In the mortgage sector, debt levels have continued to rise amid signs of a relaxation of lending standards to attract marginal borrowers, particularly in the United States. Nevertheless, sound and highly liquid corporate balance sheets and accumulated increases in household net worth are likely to delay a general worsening of credit quality. Emerging markets have remained particularly resilient, reflecting ample global liquidity, as well as improving fundamentals and a maturing and broadening investor base. Although risks are on the horizon (including a heavy election calendar in 2006), emerging markets are cushioned by well-advanced external financing, in some cases even including prefinancing for 2006, and self-insurance in the form of large holdings of international reserves.

Against this background, this chapter addresses three key themes:

- the cyclical factors and structural trends that have led to lower long-term bond

yields, flatter yield curves, high equity earnings yields, and a strengthening dollar;

- the implications of this for the continued search for yield and leverage in credit and mortgage markets, and the possible triggers for market corrections as the credit cycle seems to be peaking; and
- the growing resilience of emerging markets attributable to the maturation of the asset class, and the extension of the search for yield into local markets.

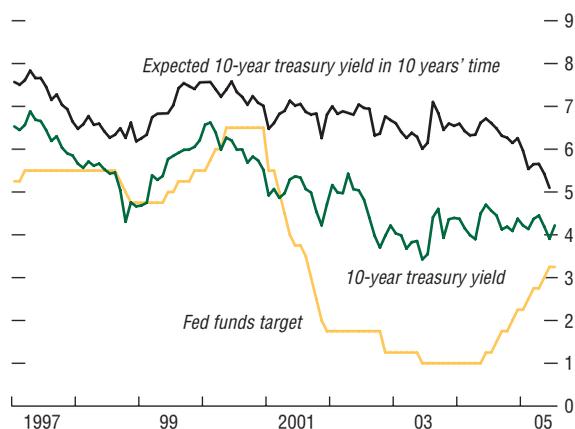
The chapter also examines recent improvements in the balance sheets of key sectors of the major mature economies. Using indicators of market and credit risk, as well as financial strength indicators, the resilience of the banking and insurance industries in mature and emerging markets is underscored.

## Low Bond Yields, High Equity Earnings Yields, and the Recovering Dollar

### Low Bond Yields and Flat Yield Curves

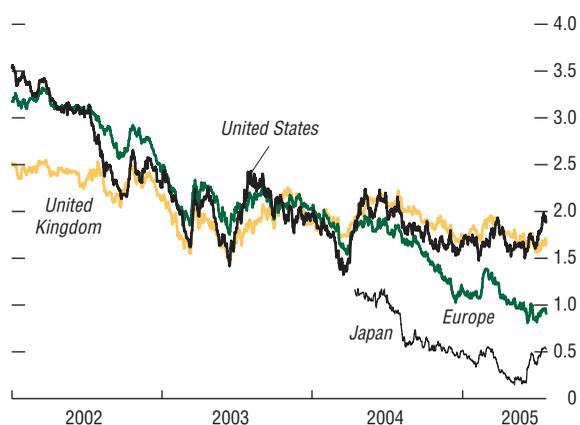
The search for yield remains a dominant theme in financial markets. This has had several effects, including a narrowing of credit spreads, a focus on relative value trades using leveraged credit derivative products, and a flourishing appetite for alternative investments. An important element sustaining the search for yield has been the low level of long-term bond yields. Even as monetary policy rates have increased in some major economies, long-term bond yields have declined, leading to yield curves flattening across mature markets. Moreover, long-run expectations for long bond yields have also declined (Figure 2.1). This section examines the cyclical and structural factors thought to have caused long bond yields to decline and yield curves to flatten, including developments in global savings and investment, the influence of monetary policy, perceptions of inflation risks, and other term premiums, as well as the impact of the asset allocation process.

**Figure 2.1. U.S. Yields**  
(In percent)



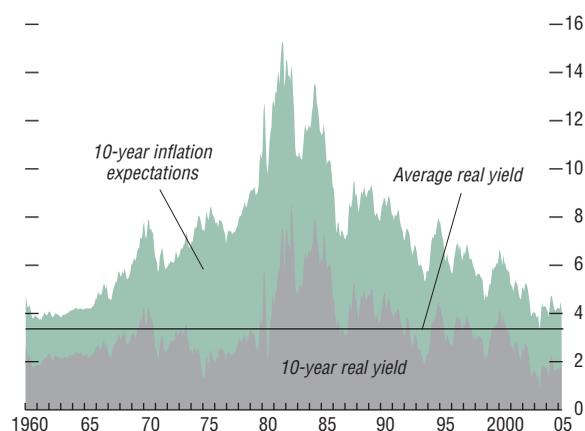
Sources: Bloomberg L.P.; and JPMorgan Chase & Co.

**Figure 2.2. Inflation-Indexed Bond Yields**  
(In percent)



Source: Bloomberg L.P.

**Figure 2.3. U.S. Real Yields and Inflation Expectations**  
(In percent)



Source: JPMorgan Chase & Co.

By most standard criteria, long-term government yields have been surprisingly low over the past few years:

- Real bond yields are low relative to historical levels. Global real yields declined after the equity bubble burst in 2000 and are now near their lowest levels since inflation-indexed bonds were introduced (Figure 2.2). Euro area inflation-linked bonds have fallen in terms of real yields from about 3.5 percent since the end of 2000 to below 1 percent in mid-2005. Measured over a longer period, U.S. real yields are less than half their long-run average—currently 1.6 percent versus 3.3 percent since 1960 (Figure 2.3).<sup>1</sup>
- U.S. real bond yields are low relative to economic growth. Looking at the past two decades—which includes periods of both abnormally low real rates (marked by unexpected and rising inflation in the 1970s) and periods of high real rates (during the U.S. Federal Reserve’s campaign to drive inflation down during the 1980s)—long-term equilibrium real yields consistent with stable rates of inflation have been estimated to be about 25 basis points less than real GDP growth.<sup>2</sup> Thus, real GDP growth of approximately 3–3.5 percent and stable inflation expectations of 2 percent, as seen over the past 12 months, would imply a 10-year nominal U.S. treasury yield of about 4.75–5.25 percent, some 100 basis points higher than at mid-2005.
- U.S. long bond yields are low relative to short-term interest rates—that is, the yield curve is relatively flat. The historically strong correlation between the slope of the yield curve and real short-term rates—reflecting the influence of monetary policy—broke down in 2005 as the spread between 10-year and 2-year bonds narrowed by more than would be expected by the

<sup>1</sup>The real yield is calculated as the nominal yield less inflation expectations derived from the Philadelphia Federal Reserve’s survey of professional forecasters.

<sup>2</sup>See Hooper and Beceren (2005).

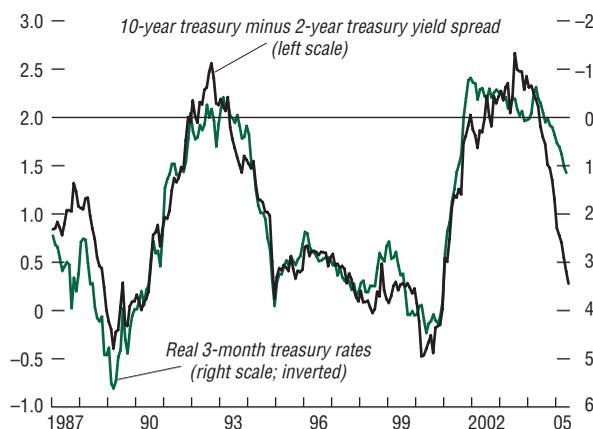
modest rise in real short-term rates, also suggesting that long bond yields are low (Figure 2.4).<sup>3</sup> The flattening of yield curves is also apparent in other major bond markets (Figure 2.5).

- In addition, long-term bond yields appear low relative to equity yields. Since 2000, real bond yields have declined while equity earnings yields have increased (Figure 2.6). As a result, the gap between bond and equity yields is wider now than at any point over the last 20 years.

Policymakers and market participants alike have been seeking explanations for the relatively low yields on long-term global bonds, which has been characterized by U.S. Federal Reserve Chairman Alan Greenspan as a “conundrum.”<sup>4</sup> The answer is important not only for macroeconomic management but for financial stability, since the sustainability of low yields has significant implications for the pricing of credit, the appetite of investors for leverage and risk, and the allocation of capital. Understanding the causes of low long-term yields also sheds light on potential triggers for financial market corrections.<sup>5</sup> Accordingly, work has focused on the fundamental drivers of global long-term yields.

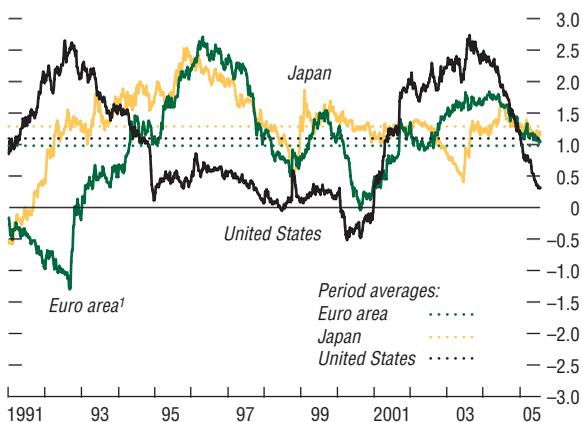
- In the wake of the 1997–98 Asian crisis, investment in emerging markets collapsed, capital flows reversed, and large current account surpluses led to a buildup of reserves. Emerging markets moved from an aggregate current account deficit in 1996 to a large surplus in 2004 (Table 2.1). In mature markets, an investment slowdown in the wake of the bursting of the equity bubble in 2000 has resulted in substantial net savings by the corporate sectors in several countries, most notably in the United States and Japan. The U.S. corporate sector

**Figure 2.4. U.S. Yield Curve Steepness and Real Short-Term Rates**  
(In percent)



Source: Deutsche Bank.

**Figure 2.5. Yield Curve Steepness**  
(10-year minus 2-year; in percentage points)



Source: Bloomberg L.P.  
<sup>1</sup>Deutschemark before 1994.

<sup>3</sup>Real short rates calculated using core inflation.

<sup>4</sup>See testimony of U.S. Federal Reserve Chairman Alan Greenspan to the U.S. Congress on February 16–17, 2005.

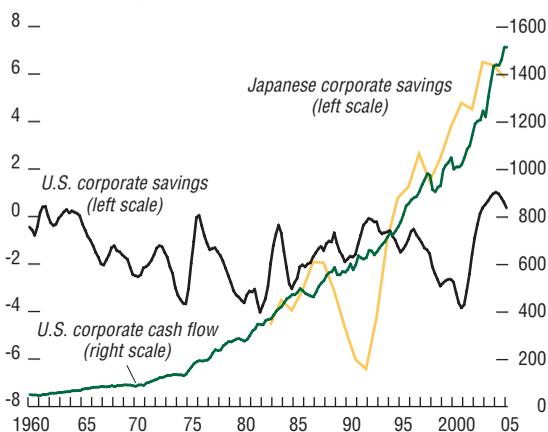
<sup>5</sup>See IMF (2005b, Box 1.2, p. 18).

**Figure 2.6. Global Equity Yields Versus Real Bond Yields**  
(In percent)



Source: Barclays Capital.

**Figure 2.7. Corporate Financial Balances**



Sources: JPMorgan Chase & Co.; and IMF staff estimates.

**Table 2.1. Global Financial Balances by Sector<sup>1</sup>**  
(In billions of U.S. dollars)

	1996	2000	2004
<b>G-6 economies<sup>2</sup></b>	4	-368	-504
Government balance	-795	-114	-1096
Household savings	594	271	26
Corporate savings	206	-525	566
of which:			
United States	39	-442	176
Euro area	50	-201	47
Japan	127	228	271
<b>G-6 current account balance</b>	4	-368	-504
of which: United States	-117	-412	-669
<b>Emerging markets</b>			
<b>current account balance<sup>3</sup></b>	-88	129	337
Emerging Asia	-40	86	193
Latin America	-39	-48	16
Middle East	11	70	113
Africa	-5	7	1
Eastern Europe and Russia	-15	14	14

Source: JPMorgan Chase & Co.

<sup>1</sup>The financial balance for each sector is the difference between gross savings and gross investment.

<sup>2</sup>The G-6 is Australia, Canada, euro area, Japan, the United Kingdom, and the United States.

<sup>3</sup>The change in net savings for the G-6 economies does not equal the change in net savings for emerging market economies because the data presented for G-6 countries are based on national accounts estimates while data for emerging market economies are derived from balance of payments statistics.

shifted from being a net borrower to a net saver in 2003, leading to a sharp fall in the supply of bonds from the nonfinancial corporate sector (Figure 2.7). The Japanese corporate sector also deleveraged during this period. Some have termed the combination of rising global savings and declines in corporate investment a “global savings glut.”<sup>6</sup>

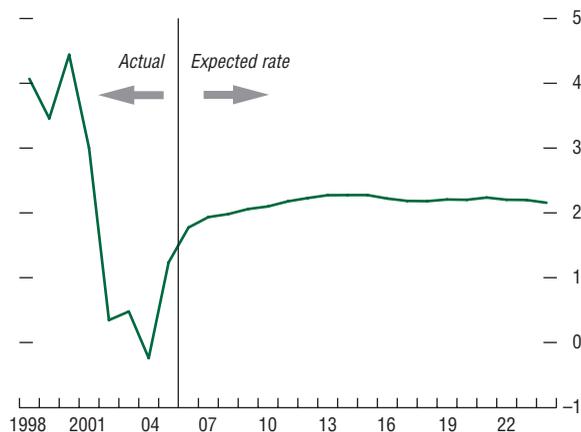
- Risk premiums may have declined as investors appear more certain that inflation surprises and macroeconomic volatility of previous decades are much less likely to occur. Determined central bank action to combat inflation during the 1980s and 1990s, coupled with the adoption of inflation targeting monetary policy regimes in many OECD countries, have contributed to hard-earned inflation-fighting credibility by leading central banks. Expected real inter-

<sup>6</sup>See Bernanke (2005); Loeys and others (2005); and Cassard and Mayer (2005).

est rates implied in the yield curve of inflation-linked bonds indicate that market participants expect real short-term rates to stay low well into the future (Figure 2.8). U.S. Federal Reserve Chairman Alan Greenspan has argued that a significant portion of the decline in expected term rates over the past 12 months owes to falling risk premiums as investors appear to be encouraged by a perceived increase in economic stability, marked by significant declines in measures of expected volatility in equity and credit markets.<sup>7</sup>

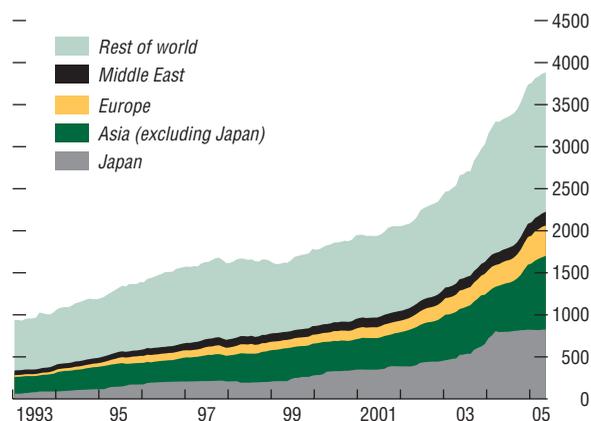
- Foreign central banks, particularly in Asia, have accumulated sizable reserve positions as they have sought to stem appreciation pressures from current account surpluses and inflows of foreign direct investment (Figure 2.9). The accumulation of international reserves, historically held in bonds, has been similar in magnitude to net government bond issuance in the main markets during 2003–04. Foreign private and official investors together now hold close to 65 percent of all available U.S. treasuries from 1- to 10-year maturity.
- Partly in response to regulatory changes, pension funds and insurance companies are increasing their holdings of long-term fixed income securities and reducing the share of equities in their portfolios to match their assets more closely to long-term liabilities. For example, OECD pension funds have increased their holdings of fixed-income securities from 24 percent of total assets in 2002 to 26 percent in 2004, while reducing the share of equities from 55 percent to 42 percent of total assets over the same period (see Chapter III, Module 1, for more details). Estimating how much each factor has contributed to the decline in long bond yields is of course difficult since the direct impact of each is not observable in yields. Going for-

**Figure 2.8. Path for Real U.S. 1-Year LIBOR Discounted in the Term Structure**  
(In percent; as of July 28, 2005)



Source: Goldman Sachs.

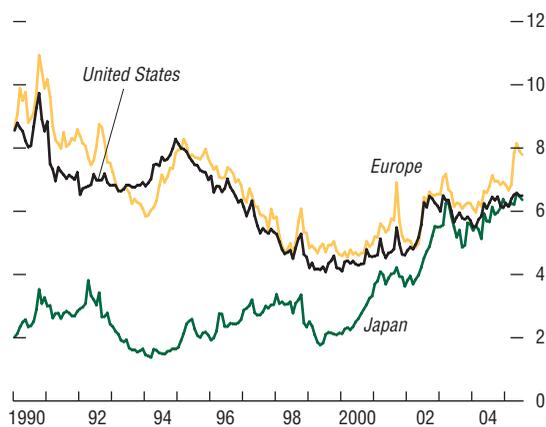
**Figure 2.9. International Reserves**  
(In billions of U.S. dollars)



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

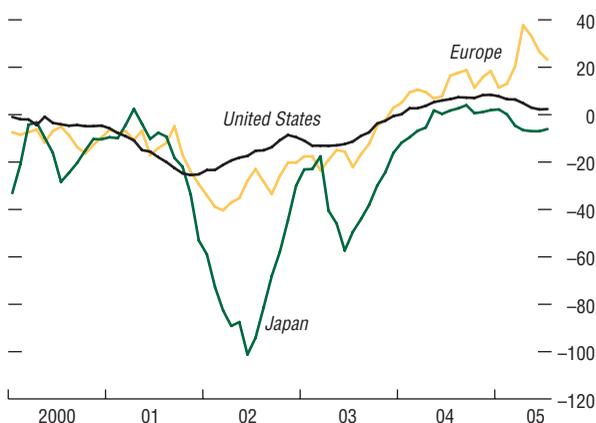
<sup>7</sup>See testimony of U.S. Federal Reserve Chairman Alan Greenspan to the U.S. Congress on July 20, 2005.

**Figure 2.10. Earnings Yield in Major Developed Markets<sup>1</sup>**  
(In percent)



Sources: I/B/E/S; and IMF staff estimates.  
<sup>1</sup>Based on 12-month forward earnings.

**Figure 2.11. Earnings per Share, Actual Minus Forecast<sup>1</sup>**  
(In percent of forecast)



Source: I/B/E/S.  
<sup>1</sup>Actual data refer to 12-month trailing earnings, while forecast are 12-month forward earnings provided 12 months previously.

ward, cyclical factors, including sustained growth and an increase in investment spending, could bring about a rise in long-term yields. In addition, changes in China's exchange regime, and increased flexibility of Asian currencies more generally, could eventually lead to reduced accumulation of foreign reserves, reducing the downward bias that reserve accumulation has exerted on long-term bond yields.

However, longer-lasting developments could act to cap or moderate the increase in long bond yields, keeping yield curves relatively flat. In particular, reduced premiums demanded by markets for inflation volatility may have reduced term premiums reflected in long-term real yields and expected long-term rates. Furthermore, the continuing trend of major institutional investors to increase portfolio holdings of longer-term fixed-income securities is likely to remain a feature of financial markets for many years. For instance, pension funds in the Netherlands are estimated to require some €255 billion of long-term bonds to lengthen the duration of their assets in line with liabilities. More work is needed to ascertain the influence of institutional investors on long-term bond yields.

### Equity Earnings Yields Remain High

The shift in asset preferences since the bursting of the equity bubble in 2000 continues to weigh on equity valuations. Earnings yields indicate that equities are still valued relatively conservatively, with high prices reflecting particularly strong earnings expectations. Earnings yields have continued to rise across major markets, and now stand at or above historical averages (Figure 2.10).<sup>8</sup> Earnings have continued

<sup>8</sup>Earnings yields are measured as the ratio of 12-month forward earnings estimates to share prices. Historical averages are 6.9 for the S&P 500 (January 1985–June 2005), 3.7 for the Topix (February 1988–June 2005), and 7.8 for the FTSE Europe (December 1987–June 2005).

to surprise analysts on the upside in the United States and Europe, though the extent of those positive surprises has been diminishing in the United States (Figure 2.11).

The difference between expected earnings yields on equities and risk-free government bond yields widened during 2000–02 and has remained wide since then (Figure 2.12). This is particularly surprising as the implied volatility of equity prices, derived from option markets, has continued to fall since early 2003. Relatively conservative equity valuations therefore may reflect a shift in investors' preferences for reasons other than risk aversion, including changes in asset and liability management of major institutional investors (see Chapter III).

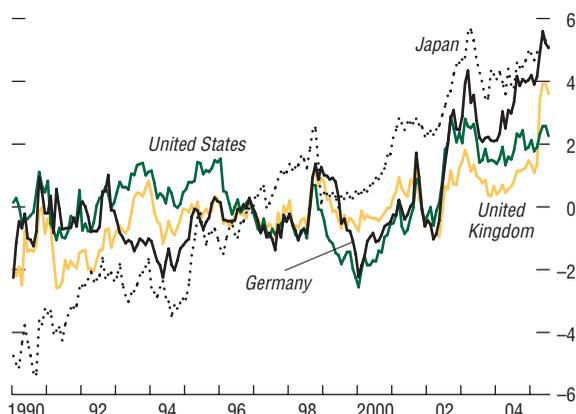
Looking forward, analysts are expecting earnings growth to slow moderately. For the financial sector, the flattening of the yield curve is likely to pose a more difficult earnings environment, and losses from second quarter disturbances in credit markets may also play a role. For example, in the United States, actual 2005 second quarter earnings for financial companies fell more sharply than for other sectors.

### Market Volatility Remains Low

The search for yield has been given added impetus by subdued volatility. Despite the turbulence in the credit markets and large macroeconomic imbalances, investor complacency appears entrenched. As examined in the April 2005 GFSR, structural and cyclical features—including broader market integration and lower macroeconomic volatility—have enabled investors to better diversify risks, have contributed to reduced option premiums, and have reduced implied volatility. Where volatility has picked up, the spikes have been mostly short-lived and confined to specific asset classes (Figure 2.13).

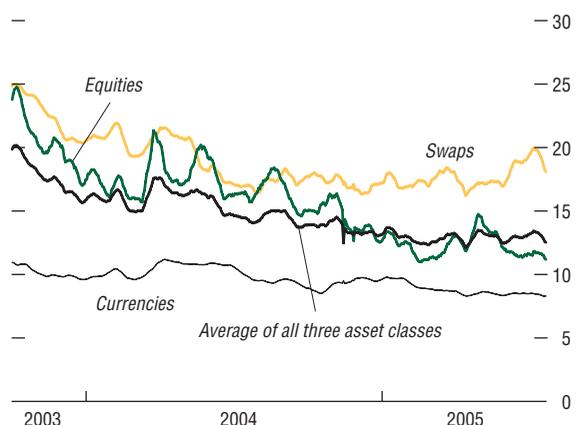
For example, equity implied volatilities picked up briefly in mid-April after turbulence triggered by several high-profile earnings dis-

**Figure 2.12. Earnings Yield Minus 10-Year Bond Yield**  
(In percent)



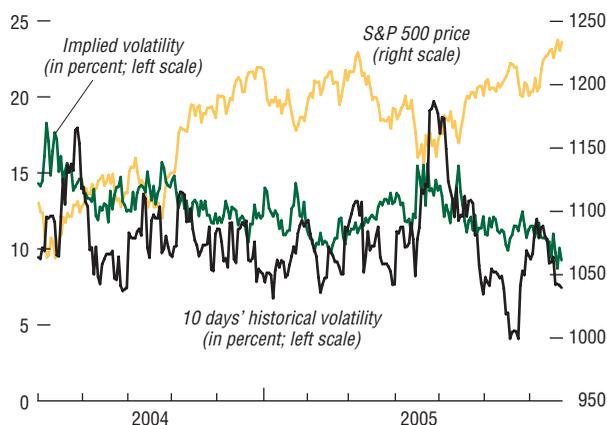
Sources: Bloomberg L.P.; I/B/E/S; and IMF staff estimates.

**Figure 2.13. Implied Volatilities**  
(In percent)



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

**Figure 2.14. S&P 500 Price and Difference Between Implied and Actual Volatility**

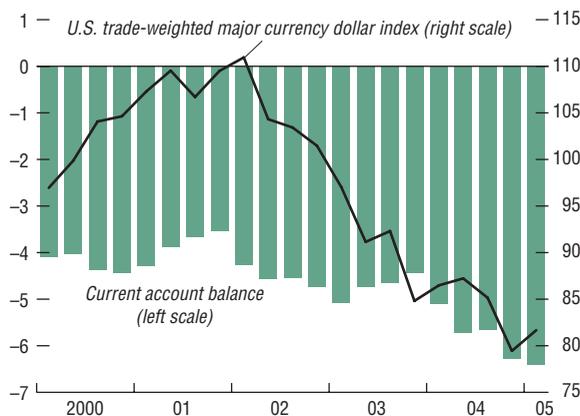


Source: Bloomberg L.P.  
 Note: A similar pattern following the mid-April turbulence is observed in German and Japanese markets.

appointments and the sudden emergence of disruptive developments in credit markets—as well as concerns about the pace of U.S. Federal Reserve policy tightening. However, the pickup in implied equity volatility was modest relative to the rise in actual volatility (Figure 2.14). That is, market participants did not fully incorporate the sudden jump in actual volatility into a new estimate of forward-looking implied volatility as a permanent factor. In the event, equity prices continued to recover and actual volatility stabilized. Another minor surge in implied volatility followed the emergence of uncertainty over the direction of the European Central Bank’s (ECB) interest rate policy in June, which also turned out to be short-lived. As with the equity market turbulence in April, the impact of fixed-income volatility was localized to the euro swaptions markets, and did not affect swaptions volatilities in other major currencies.

**Dollar Rebounded Despite the Widening U.S. Current Account Deficit**

**Figure 2.15. U.S. Current Account Balance**  
*(In percent of GDP)*



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

Despite the growing U.S. current account deficit, the U.S. dollar rebounded against major international currencies, particularly the euro, throughout the first half of 2005 (Figure 2.15). The move broadly reversed the dollar’s weakness during the fourth quarter of 2004 (Figure 2.16). Widening interest rate and growth differentials in favor of the United States supported the dollar, while recurrent speculation that persistent economic weakness could induce the ECB to ease monetary policy weighed on the euro. The euro was also under pressure from market concerns over weak growth, flagging reforms, rising political uncertainty because of the rejection of the new EU constitution in French and Dutch referenda, and weak fiscal discipline of some countries in the euro area. However, the dollar was little changed against a trade-weighted basket of key emerging market currencies, as appreciations by several Latin American cur-

rencies were largely offset by weakness among certain Asian currencies.

In June, speculative positioning for continued dollar appreciation reached record levels. Futures market data from the U.S. Commodity Futures Trading Commission indicated that speculators had assumed the largest net-long position on record (Figure 2.17), although the position subsequently moderated. Currency options markets indicated similar expectations, as the skew in implied volatilities reached extremes in favor of continued dollar appreciation, especially against the euro.

The global appetite for U.S. assets has remained strong. Official reports of private sector foreign investment in U.S. securities—mostly bonds—roughly matched the pace of monthly trade deficits, which averaged close to \$55 billion a month between January 2004 and May 2005 (Figure 2.18). Private purchases of fixed-income securities picked up as central bank purchases subsided in 2005, after monetary authorities—particularly in Asia—had aggressively increased their holdings of U.S. treasury securities throughout 2004. In the 12 months through May, official buying of U.S. securities came to \$156 billion, compared with \$131 billion from Caribbean countries, and \$608 billion from all other private investors.

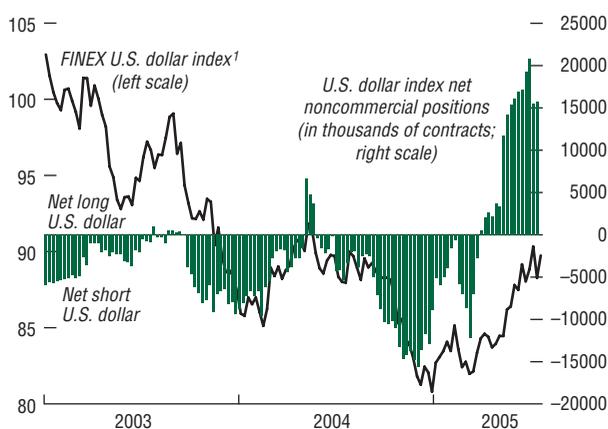
Market analysts have been debating the impact of recent U.S. legislation on the dollar during 2005, but the net effects are difficult to determine. The American Jobs Creation Act, passed in 2004, allows U.S. companies to repatriate profits previously held abroad at a 5.25 percent corporate tax rate during 2005, rather than at the 35 percent rate that would otherwise have prevailed. At issue is whether these tax advantages are leading to substantial flows in favor of the dollar as corporations convert funds held abroad in local currencies into U.S. dollars. During the first half of 2005, repatriation flows were reported to be light in advance of the U.S. administration's clarification of important procedural details in May.

**Figure 2.16. U.S. Dollar Performance**  
(December 31, 2003 = 100)



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

**Figure 2.17. U.S. Dollar Index: Net Noncommercial Positions**

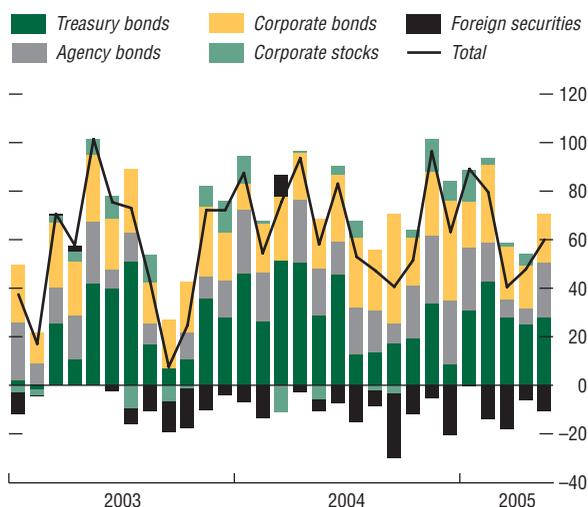


Sources: Bloomberg L.P.; and IMF staff estimates.

<sup>1</sup>The U.S. dollar index is an exchange-traded contract on the New York Board of Trade representing an average of six major international currencies against the U.S. dollar.

**Figure 2.18. Net Foreign Purchases of U.S. Assets by Type**

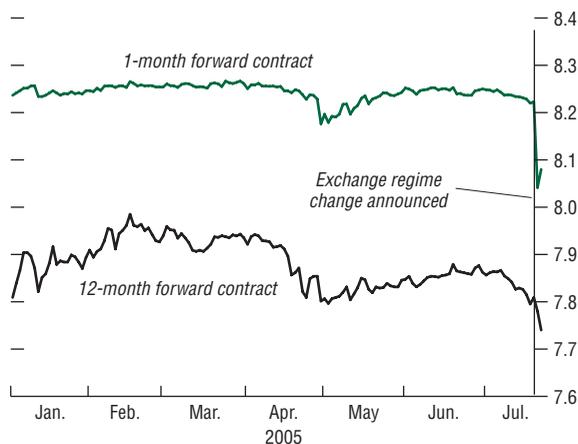
(In billions of U.S. dollars)



Sources: U.S. Treasury Department, *Treasury International Capital System*; and IMF staff estimates.

**Figure 2.19. Chinese Renminbi Nondeliverable Forwards**

(In renminbi per U.S. dollars)



Source: Bloomberg L.P.

As long anticipated, in July, the Chinese authorities announced a change in their exchange regime, including a one-off 2.1 percent revaluation and a peg to a new basket of currencies (Figure 2.19). The Malaysian authorities announced a similar change on the same day. Since the change of regime was announced, exchange rate movements have been more modest than some in the markets had expected. Perhaps more important than the immediate financial impact has been the view that the change of regime has defused to some extent growing protectionist pressures in the mature economies, which is seen as positive for global trade and growth prospects.

The Chinese authorities have continued to manage the renminbi tightly, and the appreciation of other Asian currencies has been modest. The nondeliverable forwards market is still signaling expectations of moderate appreciation of the renminbi against the dollar over coming months. The initial, but short-lived, impact of the announcement was to push up yields on U.S. fixed-income securities, as it was thought demand for dollar-denominated bonds might fall if Asian central banks no longer needed to intervene as heavily to prevent their currencies from appreciating, and if Asian current account surpluses were to diminish. It also pushed down yields on euro area bonds as market participants conjectured that the Chinese authorities might seek to increase nondollar holdings among their reserves. Although this impact on yields waned quickly, it does serve to demonstrate the likely direction of market moves should more substantial adjustments in Asian exchange rates be forthcoming.

Exchange rate volatility combined with rapid reversals in capital flows and a related spike in U.S. bond yields has been one of the vulnerabilities overhanging the stability of the global financial system over recent years. That threat has not been removed, but market developments have pushed it further into the medium term.

## The Search for Yield in Credit and Mortgage Markets—The Credit Cycle

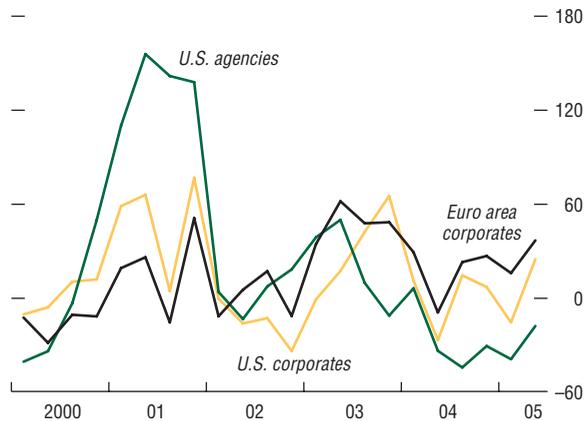
The influence of the ongoing search for yield remains strong in credit markets, supporting continued low credit spreads. With spread compression having left little scope to extract returns from betting on further spread narrowing, market participants are increasingly using leverage in various ways to enhance returns, including through relative value arbitrage using structured credit products. The proliferation of such investment positions, relying on relatively untested models and default correlation assumptions for pricing, has made these markets vulnerable to corrections that could be aggravated by liquidity disruptions, as shown by the credit market disturbances in April and May 2005. Such corrections in credit derivative markets could be triggered by a worsening in the credit quality of specific companies. In the mortgage market, recent developments may be raising credit risks as well—which could also trigger corrections of the tight spreads in mortgage-backed securities markets.

### Corporate Credit Markets

The environment for corporate credit remains broadly supportive across mature markets. Continued global economic recovery and relatively low policy rates have allowed corporations to continue to generate profits and improve balance sheets. Strong demand for credit products and limited corporate bond supply have caused spreads to remain close to their recent historic narrow levels, and any widening of spreads has proved temporary as the quest for yield has swiftly reasserted itself (Figures 2.20 and 2.21).

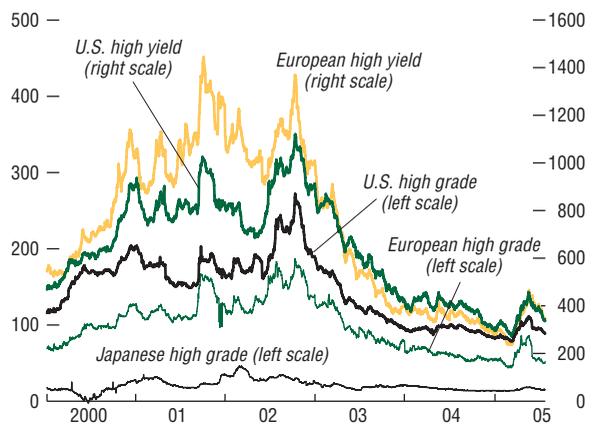
The corporate bond market was only briefly roiled by declines in the creditworthiness of two major corporate debt issuers and subsequent disturbances in credit derivative markets. Announcements by Ford and General Motors (GM) of reduced earnings, combined with the companies' high cost structures, cul-

**Figure 2.20. Corporate and Agency Bond Issuance**  
(In year-on-year percent change)



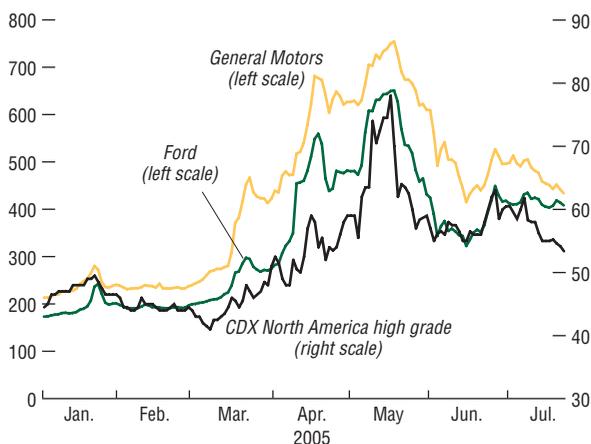
Source: Bloomberg L.P.

**Figure 2.21. Corporate Spreads**  
(In basis points)



Source: Merrill Lynch.

**Figure 2.22. Credit Default Swap Spreads**  
(In basis points; 5-year)



Sources: Bloomberg L.P.; and JPMorgan Chase & Co.

minated in ratings agency downgrades to below investment grade in May. Market concerns initially centered around the ability of the much smaller subinvestment-grade bond market to absorb the hundreds of billions of dollars of bonds to be transferred from the investment-grade bond market.<sup>9</sup> Furthermore, these concerns were amplified as the effects of the credit deterioration rippled through credit derivative markets. This spoiled trading strategies that were designed to arbitrage perceived mispricings in the capital structures of these companies and the seniority structure of collateralized debt obligations (CDOs) (Box 2.1). As a result, several hedge funds and banks' proprietary trading desks were rumored to have suffered significant losses.

The disruptions in the credit derivative markets were, however, relatively short-lived, partly because of the continued search for yield. The cost of protection against default in the credit default swap market for Ford and GM jumped sharply in March when the probability of ratings actions first arose. The size of the move partly reflected the need to find new investors to hold the substantial amount of bonds then held by dedicated investment-grade investors. Although the cost of protection on those two companies remained elevated, the impact on the broader credit default swap indices was more muted (Figure 2.22).<sup>10</sup>

<sup>9</sup>A recent change by Lehman Brothers in the composition of the major investment-grade indices required that two out of the three major rating agencies (instead of one of either Moody's or Standard & Poor's (S&P)) downgrade a company toward subinvestment grade before it was moved out of the investment-grade indices. While General Motors received such a downgrade from two of the agencies, Ford was downgraded only by S&P. However, Ford temporarily entered the subinvestment-grade indices in June, before Lehman's rule change took effect, only to reenter the investment-grade indices in July.

<sup>10</sup>A commonly used index of credit default swap spreads for the U.S. investment-grade corporate sector—the JPMorgan North America CDX high-grade index—rose some 40 basis points, but by June fell back nearly to its level prior to the disturbances (see Figure 2.27, p. 26).

### Box 2.1. U.S. Auto Companies and Losses in the Credit Derivatives Market

The emergence of sector-specific credit risks, particularly within the U.S. auto sector, prompted unexpected shifts within the pricing structure of collateralized debt obligation (CDO) markets. CDOs have helped to redistribute risk and provide arbitrage opportunities, while creating highly leveraged exposures to credit spreads that have proven to be unexpectedly volatile. Some hedging strategies designed to limit losses on these risky exposures appear to have failed, amplifying losses and sparking a substantial shift to new hedging transactions.

The use of credit derivatives—which include credit default swaps (CDSs), indices of CDS, cash CDOs of corporate bonds, and “synthetic” CDOs based on CDS indices—has expanded rapidly in the last few years.<sup>1,2</sup> The global credit default swaps market has grown quickly, from \$3.8 trillion in the first half of 2003 to \$8.4 trillion in the second half of 2004, according to a survey by the International Swaps and Derivatives Association. Cash CDOs in U.S. markets have been relatively static, growing from \$235 billion outstanding at the end of 2002 to \$283 billion in the first quarter of 2005. Additionally, the growth of the synthetic collateralized debt market has been much faster, though data on this market are difficult to come by.

CDOs reallocate the risk of default for a pool of securities into different tranches. The most subordinated tranche, termed the “equity tranche,” bears all the initial losses stemming from defaults in the basket backing the CDO up to a prespecified percentage of the total portfolio. Investors in the mezzanine and more senior (and safer) tranches are progressively more insulated from loss. Because the initial losses are

borne by the investor in the equity tranche, that investor is compensated with the lion’s share of the total spread on the underlying securities.<sup>3</sup> The more senior tranches typically are rated up to the highest investment grade—that is triple-A—thus earning only a small premium over benchmark (Libor) rates.

The concentration of losses and returns in an equity tranche creates leverage. For instance, an equity tranche investor with a commitment of capital equivalent to only 5 percent of the underlying portfolio is in a risk position equivalent to a highly leveraged investor who buys the entire portfolio with 5 percent cash, borrowing the rest at the benchmark rate. In both cases, the investor has effectively leveraged 20 times. The difference is that the investor in the traditional leveraged case must be able to borrow at the benchmark rate to earn the spread over that rate, whereas an equity tranche investor need not borrow in his own name at all. Hence, equity tranches give access to substantial amounts of leverage to investors that may not have access to benchmark-rate funding.

In the spring of 2005, a series of negative news announcements about, and rating agency downgrades of, Ford and General Motors emerged. These raised market perceptions of the eventual probability of default, leading to spread widening on the equity tranches of corporate-backed CDOs. These equity tranche securities were reportedly bought largely by hedge funds and bank proprietary trading desks, which incurred rapidly increasing losses.<sup>4</sup> Moreover, many investors in the equity tranches had hedged with short positions in the mezzanine tranches of the same CDOs on the expectation

<sup>1</sup>Credit default swaps are securities that effectively insure investors against the possibility of predefined credit events, such as default, by reference entities such as corporations and sovereign issuers.

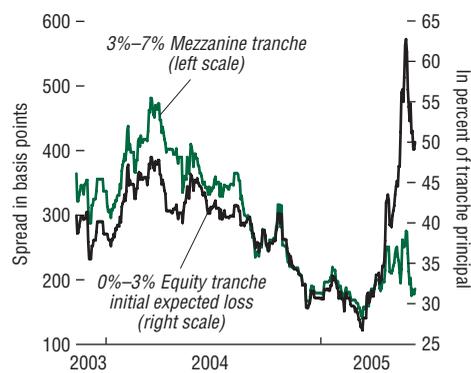
<sup>2</sup>Synthetic CDOs combine credit default swaps into notional indices; payouts on them are then arranged according to the default behavior of components of these standard indices.

<sup>3</sup>This concentration of expected losses and spread has typically earned investors returns of about 15 percent annually, comparable with historic returns in equity markets.

<sup>4</sup>Or, equivalently, and in practice more important, the same residual risk was borne by bank trading desks that had sold highly rated tranches backed by synthetic products to investors demanding high-quality fixed-income products but had chosen to retain the equity tranche on their own books.

**Box 2.1 (concluded)**

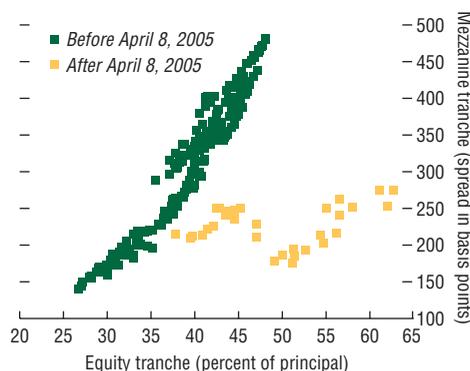
**Collateralized Debt Obligations: Historical CDX Synthetic North American Investment Grade Equity and Mezzanine Tranche**



Source: HSBC.

**Collateralized Debt Obligations: Changing Tranche Behavior**

(CDX North American, investment-grade synthetic CDO tranches)



Source: HSBC.

that the values of these tranches would move together (i.e., be highly positively correlated). This appeared to be an attractive hedging approach, since no effort was required to ascertain which company was subject to changing default risk as would be required with sales of company-specific securities or default contracts.<sup>5</sup> The investor merely had to estimate the proportion of expected additional losses likely to spill over from the equity tranche to the next least protected tranche—the “mezzanine” tranche. Then the investor could sell short the appropriate amount of the mezzanine tranche that, if expectations of default rose, should have allowed the investor to recoup his or her losses on the equity tranche.

Market pricing through early April 2005 reflected relatively stable assumed correlations of default risk among the first two risk tranches in

<sup>5</sup>This “delta hedging” involves buying and selling securities of firms in the portfolio for which default risk is changing, but can be extremely expensive and imprecise. Alternatively, investors can also buy back all tranches and reconstitute the underlying securities that can then be sold back into relatively liquid markets.

the CDO portfolio. In other words, changes in default risk were expected to affect the equity and mezzanine tranches in stable proportions (see first figure).<sup>6</sup> After early April, however, those correlations broke down as it turned out that Ford and GM proved to be subject to specific, idiosyncratic rises in default expectations that ended up concentrating losses in equity tranches, instead of spreading to mezzanine tranches as had been expected (see second figure). In fact, mezzanine tranche spreads were quite stable during this period, actually falling at some points. This may have led some tranche hedgers to lose money on both legs of their trade.

Market participants who held equity tranches may have been provoked by the failure of their model-based hedges into sudden portfolio adjustments to contain their losses. Some reacted by buying more protection on the underlying reference credits, which added to

<sup>6</sup>By market convention, equity tranches are priced in terms of cash paid to cover the initial expected loss for the portfolio, while mezzanine tranches are priced in terms of interest spreads, which compensate for the small expected loss.

the existing upward spread pressure on Ford and GM bonds.

Another reportedly widely used strategy was to arbitrage the capital structure of the auto companies by taking long positions in auto company bonds and financing them with short equity positions in the same company. This strategy also led to losses when the prices of GM bonds fell after the company was downgraded, but a surprise share bid by a prominent investor led to rises in GM's share price, thus again leading investors using this strategy to lose on both legs of the trade.

In the end, while a number of shorter-horizon investors (i.e., hedge funds, proprietary trading desks, and bank dealers) are thought to have suffered material losses, the events proved not to be of systemic importance for the financial system. Indeed, by alerting investors to the dangers of relying on specific assumptions underlying modeled risk, the episode may have had some salutary impact. It also points to the need for careful scrutiny of counterparty practices, to ensure that difficulties at individual hedge funds do not have wider repercussions for the financial system.

Meanwhile, the expected losses for the most volatile first-loss (equity) tranches of synthetic collateralized debt securities that contained the U.S. automakers doubled from about 30 percent at the beginning of this year to more than 60 percent by mid-March—reflecting the highly leveraged character of these securities—although such expected losses had fallen back to some 45 percent by the summer.

The search for yield swiftly reasserted itself. In the cash bond market, corporate spread widening proved very limited and short-lived, both in Europe and in the United States. U.S. high-yield spreads initially rose nearly 200 basis points, but the market began to improve steadily from the end of May as it became apparent that any damage to hedge funds and their prime brokerage banks was not systemic. Moreover, there was little, if any, spillover into other sectors. Market participants appear to have overestimated the scale of forced selling that might take place if a downgrade occurred and underestimated the ability of the high-yield market to absorb the debt of “Fallen Angels.” One possible explanation for both misjudgments is the waning importance of benchmarking within the asset management industry over recent years. More funds are now managed on an absolute return basis,

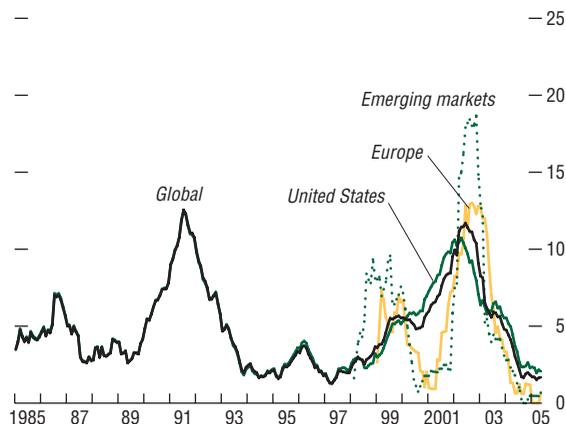
and even benchmarked funds now have greater flexibility to deviate significantly from their benchmarks. In addition, the credit difficulties at Ford and GM were relatively well telegraphed. In some cases, prior arrangements had been made to transfer the bonds from one fund to another within the same fund family, thus reducing the need to sell on the open market.

The difficulties at Ford and GM do not appear to signal broader problems in the corporate sector. Corporate default rates remain near historical lows, having fallen substantially over the past few years in all regions (Figure 2.23).

However, marking the turn in the credit cycle, rating agencies suggest that default rates have likely troughed and may start to turn back up, particularly in view of the recent pickup in high-yield issuance (Figure 2.24). Indeed, default rates have already edged up in Europe. S&P, which estimates that global subinvestment-grade default rates fell to 1.7 percent by May 2005, forecasts default rates to average just 2.1 percent over the next year, while Moody's expects rates to remain at about 2 percent through early 2006, and then to trend upward.

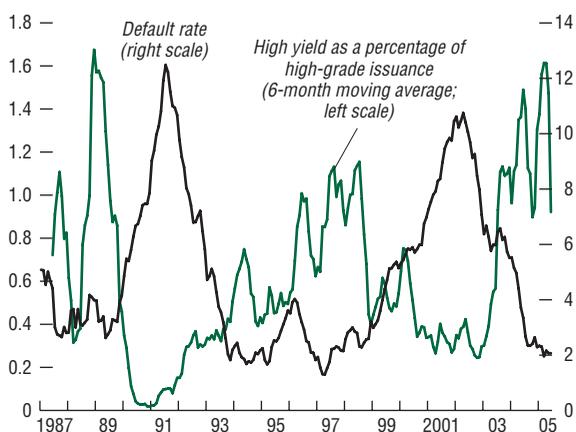
Credit risks, more generally, could also increase as corporations have begun to

**Figure 2.23. Standard & Poor's Speculative-Grade Default Rates**  
(In percent)



Source: Standard & Poor's.

**Figure 2.24. High-Yield Debt and the Credit Cycle**  
(In percent)



Sources: Board of Governors of the Federal Reserve System; and Standard & Poor's.

increase leverage of their balance sheets (see sections on Corporate Balance Sheets and Bank Balance Sheets, pp. 43–50, for a detailed discussion of recent balance sheet developments). The massive deleveraging of recent years that lowered default risks to very low levels has benefited bondholders. But companies now appear to be paying more attention to the interests of shareholders than they were over recent years, allowing indebtedness to stabilize or rise slightly in order to maintain high dividend rates and, in some cases, to fund share buyback programs. The number of companies increasing dividends has generally trended up over the past few years, although cash balances also continue to grow (Figure 2.25).

Moreover, encouraged by low default rates and solid corporate creditworthiness, lenders have been easing their standards, suggesting that credit quality is likely eventually to deteriorate. Lending standards have eased over the past few years across mature markets (Figure 2.26). Banks in Europe and the United States report that the primary reason for easing standards was concern about competition from other sources of business credit.

Global credit demand is also being supported by mergers and acquisitions activity. As stock prices have risen and profit growth from cost cutting and productivity improvements has become harder to achieve, firms have increasingly been looking to other sources of growth to boost profits. Thus, global merger activity in 2004 reached almost \$2 trillion, the highest in four years, and this pickup has continued into 2005 (Figure 2.27).

By raising the degree of leverage in the corporate sector, the resurgence of mergers and acquisitions activity—including leveraged buyouts—increases the risk of a deterioration in creditworthiness. In addition, this increase in leverage heightens the risk of specific corporate credit events, which have the potential for spillover effects into credit derivative markets. More generally however, sound and liquid corporate balance sheets suggest any

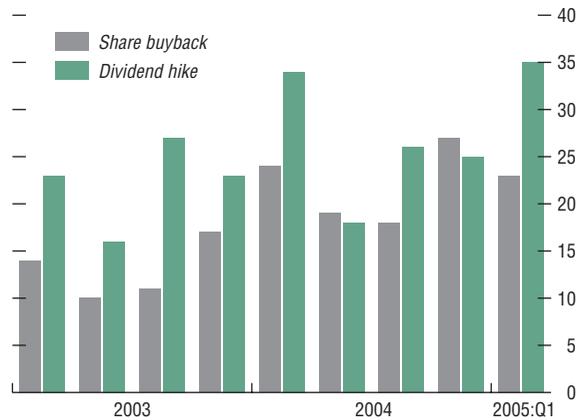
such credit deterioration likely has a long fuse. Sustained profitability has led to a broad improvement in balance sheets in most countries. Thus, in the foreseeable future, corporate credit problems will likely be viewed, initially at least, as company specific, rather than indicative of broader credit difficulties in the corporate sector. Nevertheless, market participants have shown concerns about credit deterioration in the medium term. The U.S. credit curve has steepened: spreads on longer-maturity corporate credit have widened, while spreads at shorter maturities have hardly changed from their lows at the beginning of the year (Figure 2.28). In Europe, corporate credit curves have flattened since the beginning of the year. This may reflect the higher average quality of European bonds compared with U.S. bonds, and Europe's less advanced position in the credit cycle.

### Mortgage Markets

The search for yield is also manifest in the shrinking spreads in the market for mortgage-backed securities. The growing appetite of international investors, together with U.S. investors, for new issues of mortgage-backed securities had shrunk the margin of 30-year mortgage rates over 5-year swap rates from 250 basis points in early 2003 to about 125 basis points in June 2005 (Figure 2.29). Spreads are low by historical experience, as a wider margin is normally demanded by investors to compensate for the right of mortgage borrowers to refinance. Direct foreign buying of U.S. agency debt and mortgage pools insured by the mortgage agencies has been running at an annual rate of \$200 billion since late 2004. Foreign central banks have been buying this debt, albeit in small amounts.

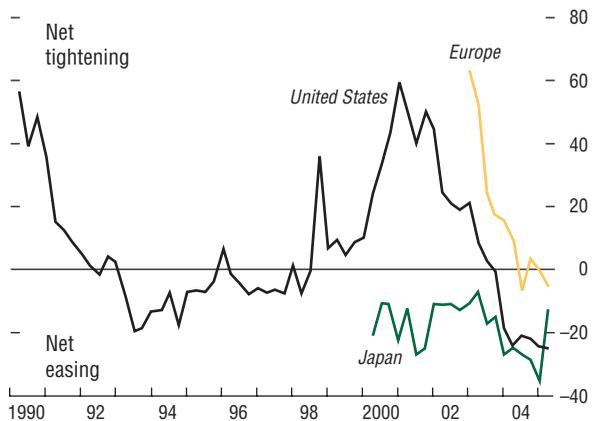
Meanwhile, low mortgage financing costs have induced household borrowing in the United States, and, to a lesser extent, in Europe, providing a growing supply of mortgage-backed securities. U.S. households have accumulated net debt equivalent to 3.3 per-

**Figure 2.25. Corporate Actions of Top 150 U.S. Corporations**  
(In number of companies)



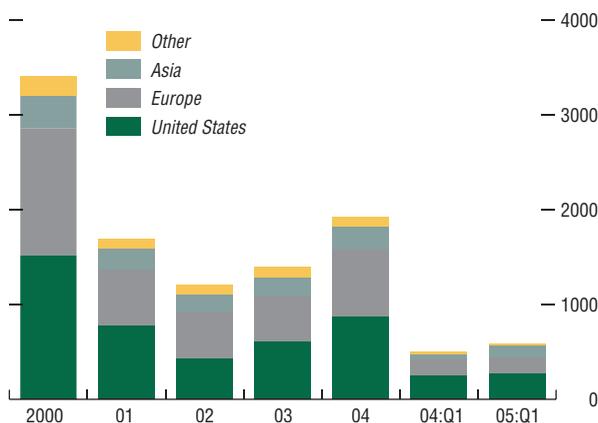
Sources: Lehman Brothers; and IMF staff estimates.

**Figure 2.26. Surveys of Bank Lending Standards**  
(In percent)



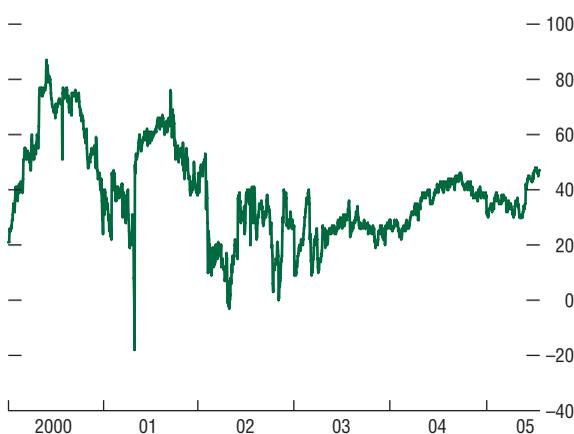
Sources: Bank of Japan; European Central Bank; Board of Governors of the Federal Reserve System; and IMF staff estimates.

**Figure 2.27. Global Merger Deal Value**  
(In billions of U.S. dollars)



Source: Standard & Poor's.

**Figure 2.28. Slope of the Corporate Credit Spread Curve<sup>1</sup>**  
(In basis points)



Sources: Merrill Lynch; and IMF staff estimates.  
<sup>1</sup>Defined as 10–15-year investment-grade less 1–3-year investment-grade option-adjusted spreads.

**Table 2.2. U.S. Sector Financial Flows**  
(In percent of GDP)

	1952–82	1986–87	1952–2000	2004Q2– 2005Q1
Rest of world	-0.4	3.1	0.5	5.8
Household <sup>1</sup>	4.1	5.3	3.8	-3.3
Corporate <sup>2</sup>	-1.7	-1.1	-1.3	1.7
Federal, state, and local government	-1.9	-5.3	-2.5	-4.2
Other	-0.2	-2.0	-0.4	0.0

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

<sup>1</sup>Households and nonprofit organizations.  
<sup>2</sup>Nonfarm, nonfinancial corporate business.

cent of GDP during the last year, whereas, in the past, they have been net savers, averaging 3.8 percent of GDP during 1952–2000 (Table 2.2).<sup>11</sup> The increase in household indebtedness thus constitutes a large counterpart to the growing U.S. current account deficit (or financing flows to the United States from the rest of the world).

Mortgage markets have adapted to the rising demand for mortgage financing and securities. In the United States, the highly developed mortgage lending industry coupled with sophisticated capital markets have quickly aggregated and transferred mortgage risk into the bond market. A rising share of mortgage lending is being financed by commercial banks and asset-backed credit structures that can facilitate flexible and innovative loans (Figure 2.30). In Europe, mortgage lending is rising and is increasingly securitized. In the second quarter of 2005, \$84 billion in Pfandbriefe-type securities in euros were issued, up from \$53 billion a year earlier. Net European bank lending was about \$80 billion for home purchases in the three months through May 2005.

Substantial U.S. mortgage borrowing has accumulated amid easier lending terms. One indicator is the large amount borrowed

<sup>11</sup>See the discussion on household sector in the section on “Balance Sheet Developments in Major Mature Economies.”

relative to the value of new construction.<sup>12</sup> The difference may be used by households for consumption or investment in other assets. A related measure of equity extraction for possible consumption spending is the rising level of home equity loans (Figure 2.31).

Lending innovations have allowed more borrowers to obtain larger mortgages. For instance, homeowners are increasingly borrowing at adjustable rather than fixed rates, which lowers their initial monthly payments at the expense of incurring the risk of larger payments later when the mortgage may readjust to higher interest rates (Figure 2.32).<sup>13</sup>

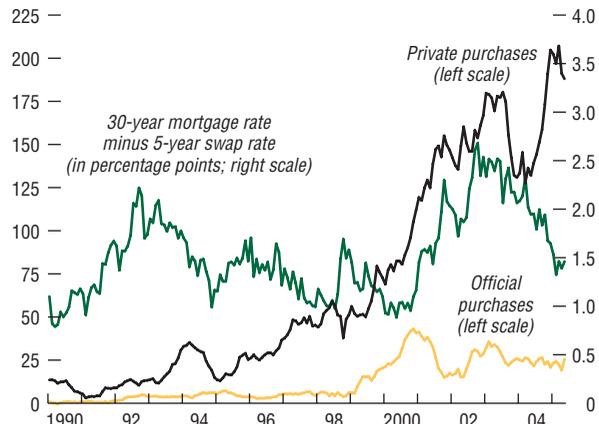
Additionally, holders of adjustable-rate mortgages are increasingly paying only interest, instead of the conventional interest plus principal. Other mortgage innovations include mortgages that allow borrowers to pay less interest than is accrued, thus leading to rising loan principal balances (negative amortization loans), as well as loans with various combinations of initially reduced rates and rapid reset conditions. If rates rise, the combined effect of higher rates on higher debt balances may create a strain for some borrowers. There has also been increasing use of nonconventional loans, including some with weaker standards of documentation and to low-income borrowers and those with poor credit histories. As a consequence, a rising share of mortgages is now pooled by private firms, some of which do not apply the same documentation standards as the traditional

<sup>12</sup>If anything, this measure may understate risk because it implicitly ignores the possibility of overbuilding. New mortgage lending net of new construction has been 2.5 percent to 3.0 percent of GDP in recent quarters, compared with a previous range of -1.5 percent to 1.0 percent.

<sup>13</sup>Adjustable-rate mortgages here also include hybrid-mortgages, which have specific fixed-terms at the beginning of the mortgage, generally of up to seven years. However, estimates are that the interest rate on some \$1 trillion of these mortgages may adjust in 2007.

**Figure 2.29. Foreign Net Purchases of U.S. Agency Securities**

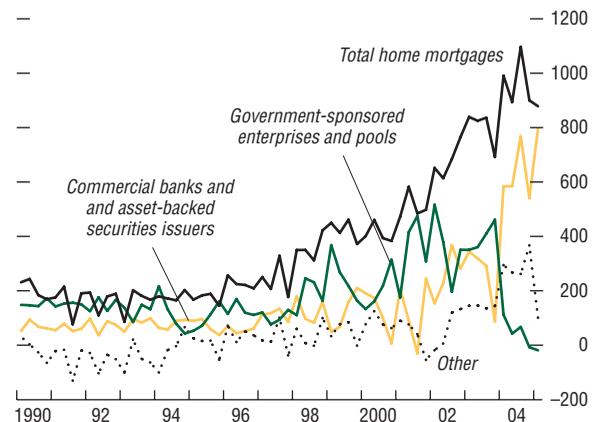
(In billions of U.S. dollars; 12-month cumulative rate)



Sources: Bloomberg L.P.; U.S. Treasury Department, *Treasury International Capital System*; and IMF staff estimates.

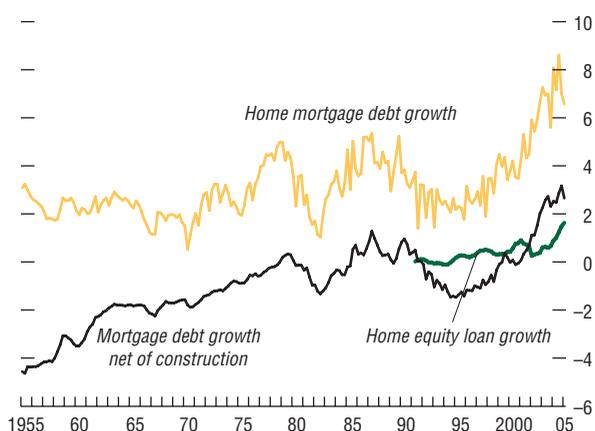
**Figure 2.30. U.S. Home Mortgages and Financing Instruments**

(In billions of U.S. dollars; quarterly flows annualized)



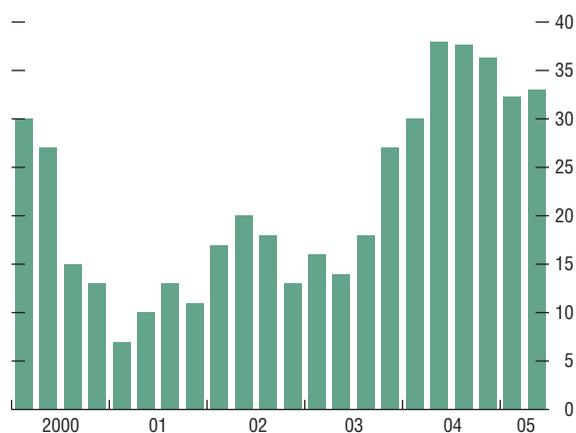
Source: Board of Governors of the Federal Reserve System, *Flow of Funds*.

**Figure 2.31. U.S. Mortgage Debt and Equity Extraction**  
(In percent of GDP)



Sources: Board of Governors of the Federal Reserve System; and IMF staff estimates.

**Figure 2.32. Adjustable Rate Mortgages**  
(Share of the dollar volume of conventional, conforming purchase originations; in percent)



Source: Federal Housing Finance Board Monthly Interest Rate Survey.

agency pools.<sup>14</sup> Some borrowers may have been allowed to take out loans for which they would not otherwise be qualified under conventional mortgage standards.

The relaxation of credit standards and the growing use of payment reduction features in mortgages have increased the credit risk in the mortgage market. Regulatory authorities in the United States have rightly expressed concerns about these trends, and regulators must monitor carefully ongoing developments to ensure that risks arising from such activity are being well managed.

In sum, the household sector, especially in the United States, has become a net borrower of funds, accumulating a record level of debt. However, as discussed later in the subsection on the household sector, household net worth has also risen because of asset price increases, most importantly in the housing sector. Growing evidence suggests that it is the marginal borrowers with a smaller cushion of equity that have been most attracted by mortgages that minimize interest payments and therefore are the most exposed to rises in interest rates and/or declines in housing prices.

### Increased Resilience of Emerging Markets

Ample global liquidity and low yields in mature markets have encouraged investors to look to emerging markets in their quest for higher returns. In addition, many institutional investors have made strategic investments in emerging markets, adding to the share of emerging market investments in their portfolios. As a result, emerging markets have become more resilient to market disturbances. Despite the turbulence in corporate debt markets and bouts of political uncertainty in

<sup>14</sup>Traditional agency mortgage pools include securities produced by GNMA, FNMA, FHLMC, FAMC, and the Farmers Home Administration.

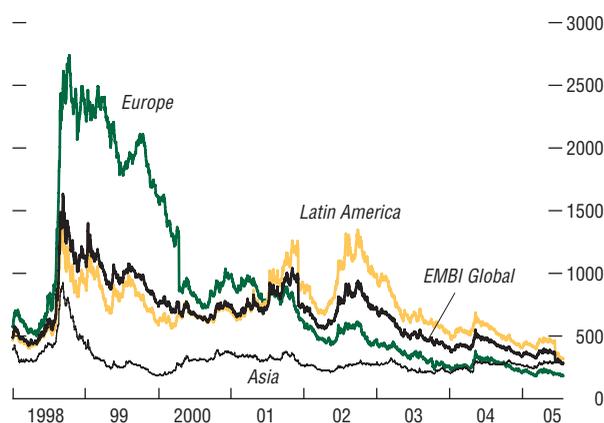
emerging markets in the first half of 2005, emerging market bond spreads have remained within a narrow range and near all-time lows (Figure 2.33). This resilience also reflects improved fundamentals across the asset class. Nevertheless, the positive global economic environment, especially in commodity-exporting countries, may mask some of the underlying vulnerabilities in emerging markets.

After falling to record lows in March, emerging market spreads, particularly of lower-rated credits, corrected on the concern that U.S. interest rates might rise further and faster than previously anticipated. Eventually these concerns dissipated and spreads retightened. Survey evidence suggests that the April market correction reduced leveraged positions in the market, thus lowering the risk of a more disorderly adjustment in the future.

Emerging market countries have continued to build up cushions against adverse developments, including by accumulating additional reserves, and by early financing of external needs. Furthermore, several countries have conducted debt management operations to reduce the vulnerability of their debt structures to external shocks by lowering the debt service costs and lengthening the average maturity of borrowing, as well as by reducing currency exposure (Box 2.2). Near-term risks to financial stability are declining as credit quality improves and as an increasing number of emerging market commodity producers shift to net international creditor status, reflecting, in large part, the benefits of higher oil and other commodity prices.

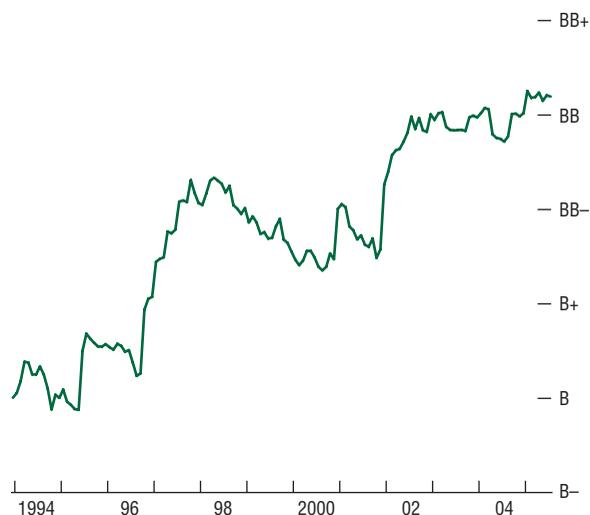
The improvements in credit quality continue to be acknowledged by credit rating agencies. The average credit quality of the benchmark EMBIG index has risen further, exceeding a BB rating this year—a new high (Figure 2.34). Upgrades have outpaced downgrades by a wide margin. S&P, for example, upgraded 24 sovereigns in the 12 months through June 2005, while downgrading only nine sovereigns.

**Figure 2.33. EMBIG Sovereign Spreads**  
(In basis points)



Source: JPMorgan Chase & Co.

**Figure 2.34. Emerging Market Credit Quality**



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

### Box 2.2. Emerging Market Borrowers Intensify Liability Management Operations

Emerging market countries have continued to improve their debt structures in an effort to reduce their vulnerability to external shocks.<sup>1</sup> To this end, emerging market sovereign borrowers have carried out active liability management operations aimed at meeting their financial requirements, while minimizing the cost of debt and its risks. These operations have undoubtedly benefited from a favorable external environment. In the first half of this year, emerging market countries have focused on operations aimed at meeting domestic and external obligations and lengthening maturities. Some countries have taken further steps to develop their local markets. In this box we review the liability management operations of five major emerging market borrowers—Brazil, Mexico, Poland, Turkey, and Venezuela.

#### Brazil

Amid the favorable external environment, Brazil has completed its financing requirements of \$6 billion for 2005 by tapping debt markets with five issues, including some reopenings. It also exchanged \$4.4 billion of C-bonds (capitalization bonds) for new A-bonds (amortization bonds) with a participation rate close to 80 percent. As a result of the exchange, the authorities swapped the call option embedded in the C-bond for a maturity extension of 3.75 years on the new, non-callable bonds. The maturity extension shifted amortizations that would have taken place during the period 2005–14 to 2009–18, thereby smoothing the amortization profile of public sector external debt.

In domestic markets, Brazil has made significant strides in reducing the amount of dollar-linked domestic debt, while gradually improving the maturity profile. While actively tapping external markets, Brazil has continued its policy of reducing the share of domestic debt indexed to the exchange rate. The reduced rollover rate (see figure), a policy first put into place in June 2003, combined with the steady appreciation of

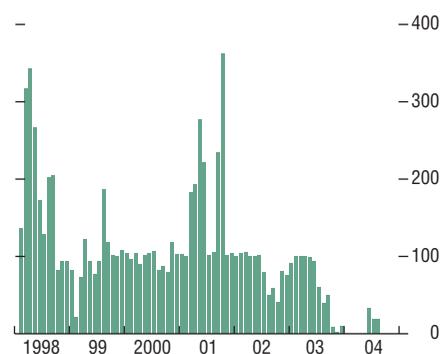
the domestic currency throughout this period, caused the share of foreign-exchange-linked debt (including foreign exchange swaps) in total domestic public sector debt to fall from about 10 percent at the end of 2004 to approximately 4 percent in May 2005. The withdrawal of foreign-exchange-linked domestic debt has been offset primarily by an increase of fixed-rate local currency debt and inflation-indexed debt.

The maturity profile of domestic debt has improved as Brazil has sought to lengthen gradually 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 about 18 months at the end of 2004 to 23 months in May 2005. As a result, the share of domestic debt maturing in the ensuing 12 months fell to about 44 percent of total debt from more than 46 percent over the same period.

Brazil has also continued to strengthen domestic liability management practices by implementing new arrangements for primary and secondary dealers and by expanding the domestic investor base. The aim of the new primary and secondary

#### Rollover Rate of U.S. Dollar-Indexed Federal Domestic Debt

(Including swaps; in percent of total principal coming due)



Sources: Brazil Ministry of Finance; and the central bank of Brazil.

<sup>1</sup>IMF (2004, Box 2.3).

dealer arrangements is to increase both liquidity and competition in domestic debt markets.

Market participants note that Brazil is expected to proceed with a \$3 billion external prefunding for 2006 before the end of this year. They believe that Brazil will continue its strategy of boosting the liquidity of its bonds at selected benchmark points along the curve.

### *Mexico*

Generally favorable market conditions and increased investor confidence have allowed Mexico to borrow at relatively low cost. Mexico issued three external bond issues in the first half of 2005, amounting to some \$2 billion. Reflecting in part the resources provided by these issues, and the decision to purchase the international reserves from the Bank of Mexico to service principal obligations, Mexico completed by the end of July its funding operations for both 2006 (an election year) and 2007.

As part of the authorities' strategy to issue debt in various international markets, the nation's second issue was a seven-year 250 million Swiss franc bond in mid-May and the third was a 10-year 750 million euro bond issued in early June. These issues have not only helped Mexico to meet its debt refinancing program but also to lengthen the average maturity of its debt.

Mexico is taking steps to upgrade its debt management system to achieve a more integrated approach. This involves developing models that evaluate Mexico's domestic and external debt as part of a unified approach, which analyzes currency composition and duration, and establishes quantitative targets for liability management. The authorities also aim to reduce further the foreign exchange component of the sovereign's debt.

### *Poland*

Poland embarked on an aggressive external debt issuance program this year, so far raising \$9.6 billion. This program reflects Poland's status as the new European Union member with the largest gross external borrowing needs and its stated objective to repay its Paris Club debt in

2005. In meeting increased financing needs, Poland borrowed in several currencies, and was one of the most active sovereign issuers in international capital markets.

Total issuance has exceeded Poland's original 2005 target of 3 billion euros. However, the original target did not include prepayments of Paris Club debt of 12.3 billion euros, due between 2005 and 2009, that Poland decided to make in 2005. The majority of Paris Club creditors accepted the prepayments, with approximately 7.4 billion euros of Paris Club debt still left to be repaid. The prepayment resulted in the large-sized funding activity, which was also easily accommodated by the strong demand for Poland's foreign bonds.

### *Turkey*

Favorable external market conditions allowed Turkey to almost complete its financing for 2005 by midyear. Turkey has issued four international bonds so far this year, raising around \$5.6 billion. This brings Turkey close to its international bond issuance target for 2005. Market participants expect Turkey to tap international markets several more times by the end of the year, allowing it partly to prefinance 2006 requirements.

Market participants anticipate Turkey will engage in other liability management activities involving external obligations. In particular, this year or early next year, they expect Turkey to exchange short-dated, high coupon bonds for longer-dated bonds, carrying lower coupon rates to match rates on the yield curve more closely.

### *Venezuela*

Under favorable conditions, Venezuela has issued two external bonds to cover its 2005 external financing requirements of \$3 billion. The second bond was available only to local investors, who could purchase the bond with domestic currency at the official fixed exchange rate. Strong domestic retail demand reflected expectations of receiving foreign exchange at a favorable rate, in view of existing capital controls, and selling the currency for a capital gain

**Box 2.2 (concluded)**

in the black market. Locals could obtain foreign exchange by buying bonds at the official rate of 2,150 bolivares per dollar, compared with a black market rate of about 2,800 bolivares. Since locals could sell the bond abroad to obtain hard currency, they could make capital gains by selling their proceeds at the black market rate.<sup>2</sup>

<sup>2</sup>However, in May, a judge ordered the Caracas Stock Exchange and all securities brokerage houses to halt stock and bond transactions designed to

The new issue also offered corporate investors a dollar hedge, helped the government mop up liquidity in the local market, and served to prevent capital flight. The sale of the bond helped bring down the black market rate, at least initially.

obtain dollars and skirt capital controls. President Chavez had earlier announced tougher punishment for those conducting transactions in the foreign exchange black market.

The improvement in credit quality has contributed to the ongoing broadening of the investor base. Emerging market countries that achieve investment-grade status gain access to a considerably wider pool of potential investors. At the same time, the search for yield continues to support higher-yielding, subinvestment-grade emerging market bonds. In the six months to end-June 2005, strategic asset allocations to emerging markets from such institutional investors as pension funds reached \$7.3 billion; this represented a 73 percent increase over the year-earlier period, itself already a strong year for such flows. As pension funds continue to assess their asset allocation policies, further “buy and hold” investment flows will likely enter emerging markets. In addition, dedicated U.S. emerging market debt and equity mutual funds have continued to enjoy net inflows during 2005 (Figure 2.35) and may have benefited from the outflows from high-yield corporate bonds when conditions were disturbed by the credit downgrades of U.S. auto makers (see discussion in the previous section).

A strong record of risk-adjusted returns in recent years has also encouraged investor inflows into emerging market assets. Since 2001, emerging market bonds have been one of the best performing asset classes, while emerging market equities have generated

higher risk-adjusted returns (ex post) than mature equity markets have generated (Figure 2.36). Returns in 2005, to date, remain attractive (Figure 2.37).

The larger and deeper pool of investors appears to have discriminated better between asset classes. Although typically exhibiting a positive correlation, emerging market and U.S. high-yield corporate debt markets somewhat decoupled during the turbulence that affected the high-yield market in April and May (Figure 2.38).

The search for yield has extended increasingly into local currency emerging market instruments as yields on emerging market external bonds have declined. However, more fundamental factors have also played an important role (Box 2.3).

### Emerging Market Financing

As demand for exposure to emerging markets grew, external gross issuance by emerging market countries of bonds, equities, and loans reached a record high in the first half of 2005 (Figure 2.39 and Table 2.3). Bond issuance increased, supported by solid demand for emerging market assets and low global bond yields, and notwithstanding the brief spike in emerging market spreads during April when most issuers chose to stay out of the market.

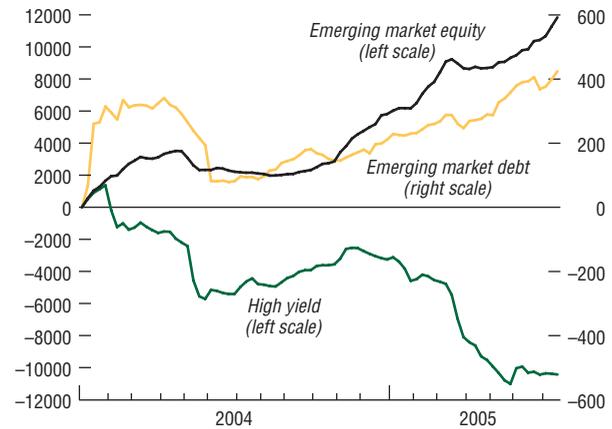
By early July, emerging market sovereigns had already completed more than three-quarters of their planned external issuance for 2005. In Latin America, some issuers have brought forward placements planned for 2006, against the backdrop of a full election calendar in that year. By July, Brazil had already fully met its 2005 financing needs, Venezuela had begun prefinancing for 2006, and Mexico had already covered its financing requirements through the end of 2007. Of note, the inclusion of collective action clauses has become standard market practice in the issuance and documentation of sovereign bonds under New York law (Box 2.4).

As the U.S. dollar strengthened in the first half of 2005, issuance in nontraditional currencies rose, in part reflecting issuers' efforts to diversify funding sources. Emerging market issuance in euros rose through 2004 to a peak in the first quarter of 2005, but moderated in the second quarter, while issuance in yen, though picking up, remains modest. In some cases, countries extended their maturity spectrum, with Poland's recent issue of a 50-year bond providing the most striking example.

Equity issuance was also strong, predominantly in Asia, but also in the Europe, Middle East, and Africa (EMEA) region. Robust economic growth in emerging market economies, particularly Asia, combined with rising investor interest in local currency exposure, encouraged equity issuance. Syndicated lending was sizable, although down from the high levels seen in the second half of 2004.

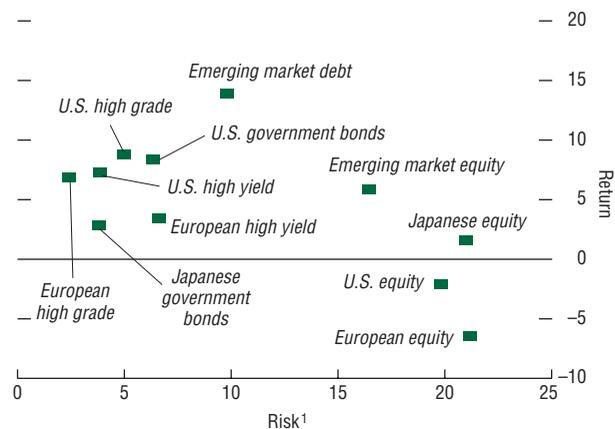
Total net issuance rose in the first half of 2005 from a year ago, supported partly by lower amortization, but remained below the previous high in 1997 (Figure 2.40). Latin America's low share of total net external issuance (about 10 percent in the first half of 2005) is because many of the main issuers have privileged the development of and emphasized funding in their local markets. Mexico, for example, has had negative net issuance in external bonds since 2000. Another factor has

**Figure 2.35. Cumulative Net Flows to U.S.-Based Mutual Funds**  
(In millions of U.S. dollars)



Source: AMG Data Services.

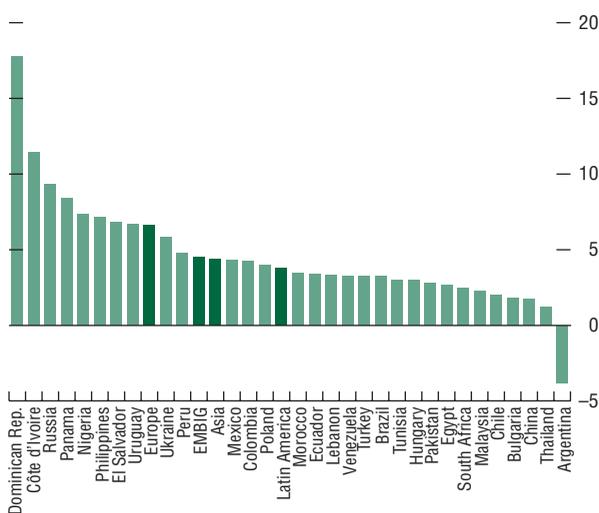
**Figure 2.36. Asset Class Risk-Return Performance**  
(In percent)



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

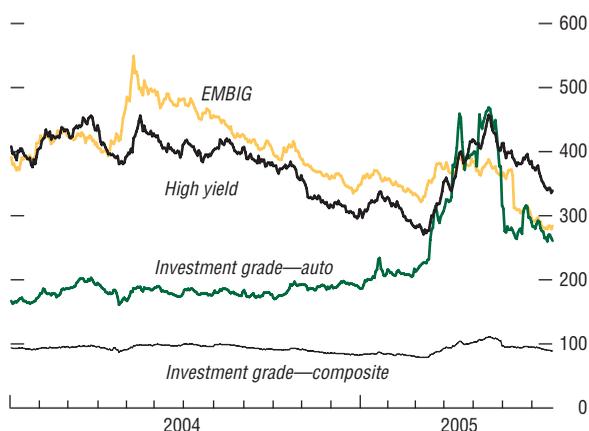
<sup>1</sup>Five-year average of annualized standard deviations of total returns from 2001 to 2005.

**Figure 2.37. EMBI Global Performance, 2005 to Date<sup>1</sup>**  
(In percent, through July 22, 2005)



Sources: JPMorgan Chase & Co.; and IMF staff estimates.  
<sup>1</sup>The EMBIG index so far this year has reflected changes in the composition of bonds used for Argentina and the Dominican Republic that have undergone debt restructurings.

**Figure 2.38. U.S. Corporate, EMBIG, and Auto Sector Spreads**  
(In basis points)



Sources: Merrill Lynch; and JPMorgan Chase & Co.

been the continued absence of Argentina from the market since 2001.

**Bond Issuance**

Bond placements by emerging market issuers remained strong in the first half of 2005, compared with the first half of 2004 (Figure 2.41). While issuance increased across the board, that by the EMEA region rose particularly strongly, accounting for 48 percent of total emerging market issuance. The composition of debt issuance changed little compared with a year ago: sovereign issuance accounted for roughly half of total bond issuance, corporate issuance represented about four-tenths of the total, and public sector corporate debt accounted for about a tenth. Currency composition notably changed in the first half of 2005, with increased issuance in nontraditional currencies—including Swiss francs and sterling, which rose to above 10 percent of the total—reflecting issuers’ desire to diversify their sources of financing (Figure 2.42).

**Equity Issuance**

Asia continued to dominate equity issuance in the first half of 2005, accounting for about 75 percent of total issuance (Figure 2.43). By contrast, equity issuance in Latin America remained close to historically low levels—representing 6 percent of the total—in keeping with the Latin American practice by corporates of financing out of either retained earnings or borrowing.

**Syndicated Lending**

Syndicated lending in the first half of 2005 declined from the particularly strong pace seen in the preceding six months (Figure 2.44). The private sector received the lion’s share of the lending, taking about two-thirds of the total. Loans to public sector companies were about a third of the total, with syndicated lending to sovereigns close to zero.

### Foreign Direct Investment

After two years of decline, foreign direct investment (FDI) inflows to emerging market countries recovered in 2004, rising to an estimated \$165.5 billion, an increase of 9 percent over 2003 (Figure 2.45). The increase in FDI flows can be traced largely to strengthened economic growth prospects, increased cross-border merger and acquisitions activity, and several privatizations. FDI expanded strongly in almost all regions in 2004. Latin America experienced the largest increase because of several sizable acquisitions and following official measures to improve the investment climate. In Asia, FDI continued to rise in 2004, particularly in China, India, Indonesia, Malaysia, and Vietnam. FDI flows to Eastern European and Central Asian countries also increased slightly in 2004, mainly because of higher flows to Russia.

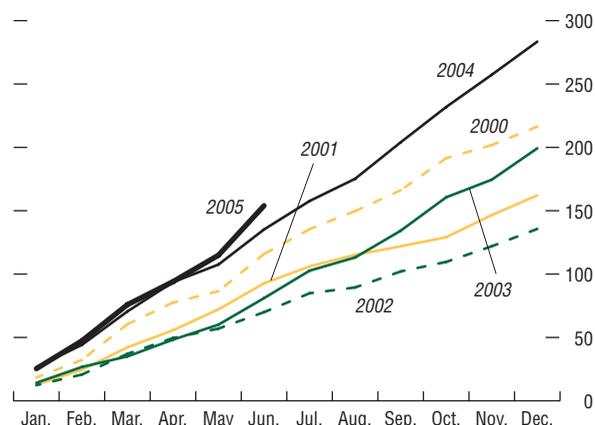
The higher level of FDI inflows to emerging market countries is expected to continue in 2005 owing to favorable economic prospects, cross-border acquisitions activity, and further privatization of state-owned companies. Although preliminary estimates for first-quarter 2005 FDI flows are somewhat below the first quarter of 2004, the World Bank projects flows for 2005 as a whole to be above 2004. A number of large announced transactions are in the pipeline, including in the steel sector in India and privatization in Turkey. FDI inflows are expected to concentrate in the oil and gas, telecommunications, and banking sectors. Notwithstanding the growth in inflows, outward FDI from emerging market countries, especially in Asia, has expanded rapidly as firms seek to penetrate new markets as well as to secure needed inputs (Box 2.5).

## Balance Sheet Developments in Major Mature Economies

### Household Sector

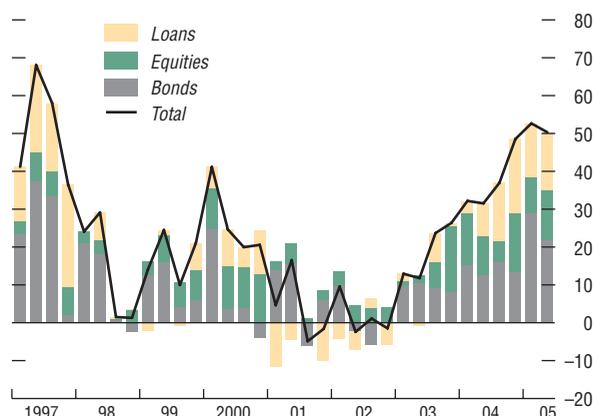
Continued robust gains in real estate values have helped to increase U.S. household net

**Figure 2.39. Cumulative Gross Annual Issuance of Bonds, Loans, and Equity**  
(In billions of U.S. dollars)



Source: Dealogic.

**Figure 2.40. Quarterly Net Issuance**  
(In billions of U.S. dollars)



Sources: Dealogic; and IMF staff estimates.

**Table 2.3. Emerging Market External Financing**

	2000	2001	2002	2003	2004	2004				2005 <sup>1</sup>					Year-to-date <sup>1</sup>
						Q1	Q2	Q3	Q4	Q1	Q2	Apr.	May	Jun.	
<i>(In billions of U.S. dollars)</i>															
<b>Gross issuance by asset</b>	<b>216.4</b>	<b>162.1</b>	<b>135.6</b>	<b>198.7</b>	<b>283.4</b>	<b>70.6</b>	<b>64.7</b>	<b>68.8</b>	<b>79.5</b>	<b>75.9</b>	<b>78.1</b>	<b>18.1</b>	<b>20.9</b>	<b>39.1</b>	<b>154.0</b>
Bonds	80.5	89.0	61.6	98.8	132.8	40.0	30.4	33.0	29.3	42.8	36.0	8.1	8.8	19.2	78.9
Equities	41.8	11.2	16.4	27.7	44.9	13.8	10.3	5.6	15.4	10.5	15.2	1.7	4.1	9.5	25.7
Loans	94.2	61.9	57.6	72.2	105.7	16.8	24.0	30.1	34.8	22.5	26.9	8.4	8.1	10.4	49.4
<b>Gross issuance by region</b>	<b>216.4</b>	<b>162.1</b>	<b>135.6</b>	<b>198.7</b>	<b>283.4</b>	<b>70.6</b>	<b>64.7</b>	<b>68.8</b>	<b>79.5</b>	<b>75.9</b>	<b>78.1</b>	<b>18.1</b>	<b>20.9</b>	<b>39.1</b>	<b>154.0</b>
Asia	85.9	67.5	53.9	87.5	123.9	33.8	29.6	25.5	35.0	25.7	31.5	6.5	6.3	18.6	57.1
Latin America	69.1	53.9	33.4	42.8	53.6	14.4	9.7	16.2	13.3	17.4	11.4	3.1	4.5	3.8	28.7
Europe, Middle East, and Africa	61.4	40.8	48.3	68.5	105.9	22.4	25.3	27.0	31.2	32.8	35.3	8.6	10.1	16.6	68.1
<b>Amortization by asset</b>	<b>114.3</b>	<b>148.0</b>	<b>129.3</b>	<b>124.2</b>	<b>134.5</b>	<b>38.4</b>	<b>33.2</b>	<b>31.9</b>	<b>31.0</b>	<b>22.3</b>	<b>25.9</b>	<b>9.2</b>	<b>8.6</b>	<b>8.1</b>	<b>48.1</b>
Bonds	52.2	60.0	59.8	61.8	76.0	25.0	17.9	17.1	16.0	13.9	14.3	6.0	4.8	3.5	28.2
Loans	62.1	88.0	69.5	62.4	58.5	13.5	15.3	14.7	15.0	8.3	11.6	3.2	3.8	4.6	19.9
<b>Amortization by region</b>	<b>114.3</b>	<b>148.0</b>	<b>129.3</b>	<b>124.2</b>	<b>134.5</b>	<b>38.4</b>	<b>33.2</b>	<b>31.9</b>	<b>31.0</b>	<b>22.3</b>	<b>25.9</b>	<b>9.2</b>	<b>8.6</b>	<b>8.1</b>	<b>48.1</b>
Asia	57.1	66.5	56.2	49.4	53.2	16.1	13.2	11.9	11.9	8.9	6.2	2.3	1.4	2.6	15.1
Latin America	32.3	45.9	41.2	40.8	47.7	12.7	13.4	10.6	11.0	7.7	10.3	4.5	2.9	2.8	18.0
Europe, Middle East, and Africa	24.9	35.5	31.9	33.9	33.6	9.6	6.6	9.4	8.0	5.6	9.4	2.4	4.3	2.7	15.0
<b>Net issuance by asset</b>	<b>102.2</b>	<b>14.2</b>	<b>6.4</b>	<b>74.5</b>	<b>148.9</b>	<b>32.1</b>	<b>31.5</b>	<b>36.9</b>	<b>48.5</b>	<b>53.6</b>	<b>52.3</b>	<b>9.0</b>	<b>12.3</b>	<b>31.0</b>	<b>105.9</b>
Bonds	28.3	29.1	1.8	37.0	56.8	15.1	12.5	15.9	13.3	28.9	21.8	2.1	4.0	15.7	50.6
Equities	41.8	11.2	16.4	27.7	44.9	13.8	10.3	5.6	15.4	10.5	15.2	1.7	4.1	9.5	25.7
Loans	32.1	-26.1	-11.8	9.8	47.2	3.3	8.7	15.4	19.8	14.2	15.3	5.2	4.2	5.8	29.5
<b>Net issuance by region</b>	<b>102.2</b>	<b>14.2</b>	<b>6.4</b>	<b>74.5</b>	<b>148.9</b>	<b>32.1</b>	<b>31.5</b>	<b>36.9</b>	<b>48.5</b>	<b>53.6</b>	<b>52.3</b>	<b>9.0</b>	<b>12.3</b>	<b>31.0</b>	<b>105.9</b>
Asia	28.8	0.9	-2.3	38.0	70.8	17.7	16.4	13.6	23.1	16.8	25.3	4.2	5.0	16.0	42.0
Latin America	36.9	7.9	-7.8	1.9	5.9	1.7	-3.6	5.6	2.2	9.7	1.1	-1.4	1.5	1.0	10.8
Europe, Middle East, and Africa	36.5	5.3	16.4	34.6	72.3	12.7	18.7	17.6	23.2	27.2	25.9	6.1	5.8	13.9	53.1
<b>Secondary markets</b>															
<b>Bonds</b>															
EMBI Global (spread in basis points)	735	728	725	403	347	414	482	409	347	373	297	384	364	297	284
Merrill Lynch High-Yield (spread in basis points)	890	795	871	418	310	438	404	384	310	352	385	419	413	385	339
Merrill Lynch High-Grade (spread in basis points)	200	162	184	93	83	94	97	91	83	92	95	102	97	95	89
U.S. 10-year treasury yield (yield in percent)	5.12	5.05	3.82	4.25	4.22	3.84	4.58	4.12	4.22	4.48	3.92	4.20	3.98	3.92	4.22
<i>(In percent)</i>															
<b>Equity</b>															
DOW	-6.2	-7.1	-16.8	25.0	3.1	-0.9	0.8	-3.4	-1.9	-2.6	-2.2	-3.0	2.7	-1.8	-1.2
NASDAQ	-39.3	-21.1	-31.5	50.5	8.6	-0.5	2.7	-7.4	1.9	-8.1	2.9	-3.9	7.6	-0.5	0.2
MSCI Emerging Markets	-31.8	-4.9	-8.0	51.2	22.4	8.9	-10.3	7.4	-0.2	1.2	3.0	-3.0	3.0	3.1	10.0
Asia	-42.5	4.2	-6.2	46.1	12.2	7.6	-12.2	4.2	-0.5	2.1	2.8	-3.0	3.5	2.4	10.3
Latin America	-18.4	-4.3	-24.8	66.7	34.8	6.2	-9.2	16.6	-1.1	1.8	7.1	-3.8	6.4	4.6	14.7
Europe, Middle East, and Africa	-22.3	-20.9	4.7	51.9	35.8	13.2	-7.4	7.8	1.0	-1.0	0.5	-2.6	-0.4	3.5	6.0

Sources: Bloomberg L.P.; Dealogic; JPMorgan Chase &amp; Co.; Merrill Lynch; Morgan Stanley Capital International; and IMF staff estimates.

<sup>1</sup>Issuance data as of June 30, 2005, close-of-business London; secondary market data as of July 22, 2005, close-of-business New York.

worth, which rose by 8.2 percent (year-on-year) in the 12 months through March 2005, and by 2.0 percent relative to disposable income. Despite monetary tightening, persistent low mortgage rates have supported ongoing

increases in house prices. The value of household real estate wealth increased by 14.9 percent in the four quarters ending on March 31, 2005, compared with a 10.9 percent rise the previous year. Households' financial net worth

grew at a slower pace (4.0 percent) than total net worth during the year ending in March 2005, because of a decline in the already low personal savings rate (from an average of 1.3 percent in 2004 to 0.9 percent in the first quarter of 2005) and muted gains from equity price appreciation in household portfolios. Indeed, with the ownership of U.S. financial assets highly skewed, most of the gains from rising net worth accrued to those in the wealthiest 10 percent of households.<sup>15</sup> By contrast, households that belong simultaneously to the middle-income quintiles and the middle age cohorts typically own a relatively small share of total household assets, and thus have relatively low levels of net worth to buffer them against severe shocks. Similarly, such middle-income/middle age households have also sufficiently high income so as to make them ineligible for support from public-sector safety nets. Therefore these households appear to be the most vulnerable to adverse financial shocks.<sup>16</sup>

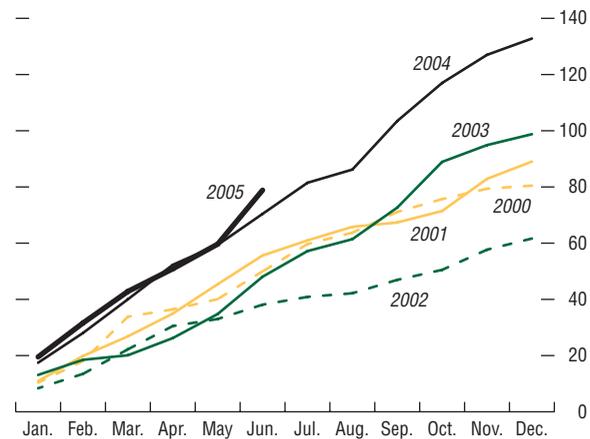
Household financial liabilities grew by 11.1 percent and mortgage debt rose by 13.0 percent during the past year, as home buyers borrowed more in absolute terms to purchase higher priced houses and, to a lesser extent, due to consumer debt. Aggregate household leverage (the ratio of liabilities to assets) rose to 18.2 percent, from its recent low of 17.8 percent in 2003, but housing leverage—the ratio of mortgage debt to housing value—has been stable at approximately 43.6 percent,

<sup>15</sup>Kennickell (2003).

<sup>16</sup>In the United States, the middle-income quintiles represent approximately 14 percent of U.S. household net worth, compared with their counterparts in Japan, for example, who represent as much as 32 percent of Japanese household net worth. Viewed by age groups, household net worth exhibits a “hump-shaped” pattern consistent with life-cycle saving behavior, where peak saving occurs in the 55–64 age group. In addition, more than half of U.S. household net worth is owned by the 50 years or over cohorts. See April 2005 GFSR for a detailed analysis of household balance sheets, a comparative analysis of developments across countries, and implications for financial stability.

**Figure 2.41. Cumulative Gross Annual Issuance of Bonds<sup>1</sup>**

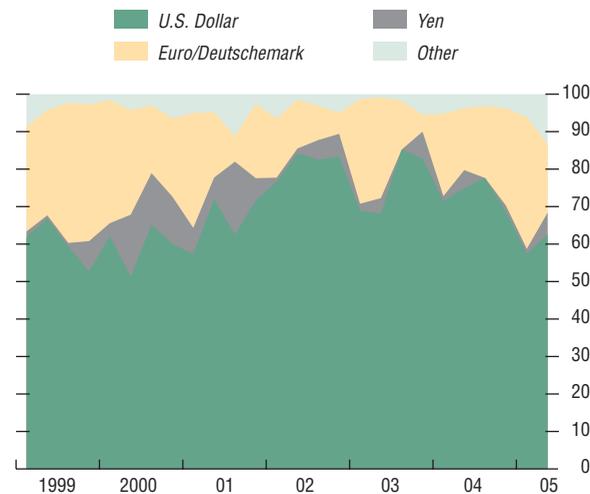
(In billions of U.S. dollars)



Source: Dealogic.  
<sup>1</sup>Bonds adjusted for Brady exchanges.

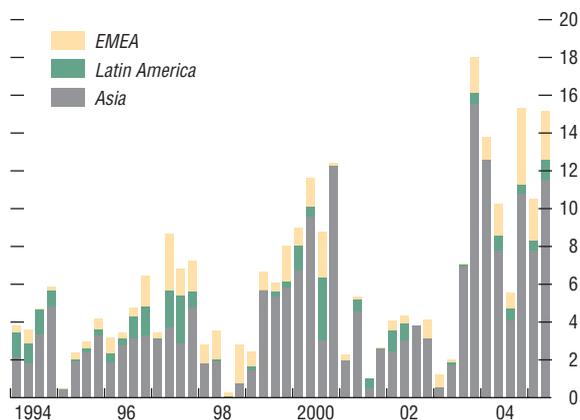
**Figure 2.42. Emerging Market Bond Issuance by Currency**

(Percentage of total)



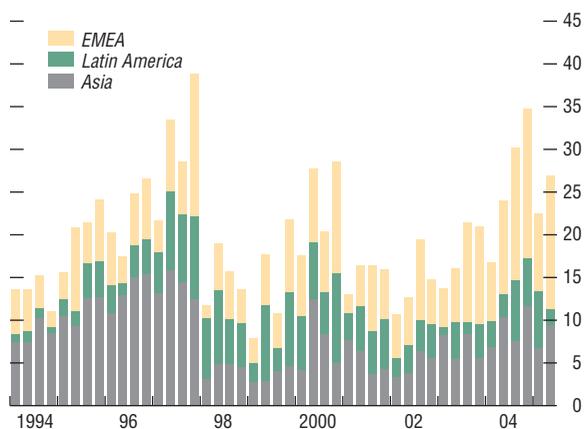
Source: Dealogic.

**Figure 2.43. Equity Placements**  
(In billions of U.S. dollars)



Source: Dealogic.

**Figure 2.44. Syndicated Loan Commitments**  
(In billions of U.S. dollars)



Source: Dealogic.

reflecting rising home values. Nevertheless, the rise in mortgage debt at a time of high home values may be a cause for concern. Moreover, household debt service payments as a percentage of disposable income has risen steadily since the mid-1990s and, in the first quarter of 2005, it reached 13.4 percent, exceeding its recent historical high of 13.36 percent in the first quarter of 2003.<sup>17</sup> Of greater concern are the debt and leverage levels of middle- and lower-income groups, which may have benefited much from low mortgage rates and more sophisticated mortgage products, but are particularly vulnerable to interest rate and economic shocks.

In Japan, household net worth has remained stable as a share of total assets since 2000, as the decline in real estate values has been largely offset by the rise in the value of household financial asset holdings (Table 8 in the Statistical Appendix).<sup>18</sup> Following an improvement in 2003, Japanese household financial net worth has not changed significantly during the last fiscal year beginning in April 2004. The share of total financial assets in equity rose to 8.6 percent at the end of March 2005 from 8.4 percent a year ago. The share of currency and deposits has remained unchanged, at approximately 55 percent during this period. Meanwhile, securities investment trusts as a share of household assets have grown steadily since its trough in 1997 (1.9 percent of household assets). The recent increase was primarily because of a continuing flow of retail funds into foreign sovereign bond products sold mainly through banks. As of March 2005, securities investment

<sup>17</sup>These data and a more advanced financial obligations ratio can be found at the Federal Reserve Board website: <http://www.federalreserve.gov/releases/housedebt/default.htm>.

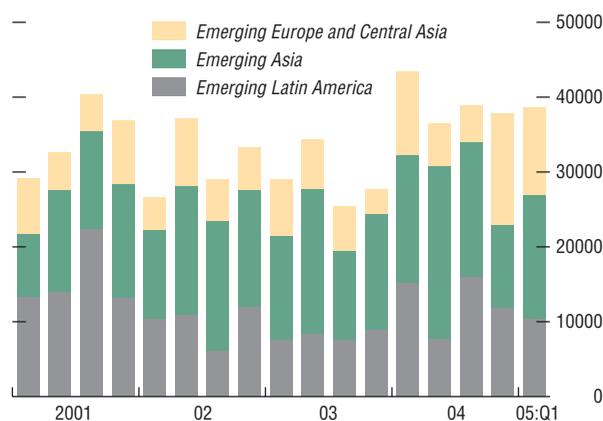
<sup>18</sup>Data on nonfinancial assets are available only through FY2003. However, real estate analysts and other market participants agree that the trend in real estate valuations has continued to decline, with perhaps some large cities, such as the Tokyo area, showing some recent signs of stabilizing.

trusts still comprise a relatively small portion (2.7 percent) of household financial assets, which reflects households' general aversion to owning equities, following the steady decline of equity prices since the early 1990s. Financial liabilities, mainly home mortgages, have not changed during this period, representing about 77 percent of GDP.

Despite increased indebtedness, household net worth in the euro area has remained generally stable. Household debt in the euro area reached new highs at the end of 2004, rising to 50 percent of GDP from 47 percent a year ago. In an environment of low interest rates and rising home prices, housing loans remain the fastest rising component of household credit, growing at a 10 percent annual rate through the first quarter of 2005. Mortgage loans with a medium- or long-term maturity still represent the bulk of new lending. Growth in consumer credit has been less dynamic than mortgage lending, but is now gaining momentum. Consumer credit growth reached 6.7 percent in the 12 months through March 2005, up from 2.8 percent in late 2003. However, the burden of higher indebtedness has been largely offset by lower interest rates, and the debt service ratio has remained remarkably stable at about 12 percent over the last five years. Financial markets have provided support to household balance sheets, thereby contributing to sustaining net worth. However, over the medium term, the recent increase in the use of variable rate mortgages, and rising loan-to-value ratios, are potential sources of vulnerability for household balance sheets, especially if income growth weakens.<sup>19</sup>

<sup>19</sup>However, mortgage products and customs (the popularity of variable versus fixed-rate loans, the maturity of mortgage loans, and the conditions attached to early repayment) differ significantly from one country to another within the euro area. Therefore, the risks associated with a possible decline in house prices, or a rise in interest rates, would have different effects on borrowers and lenders in various countries (see Chapter III of the April 2005 GFSR for a comparative analysis of mortgage markets).

**Figure 2.45. FDI Inflows into Emerging Markets**  
(In billions of U.S. dollars)



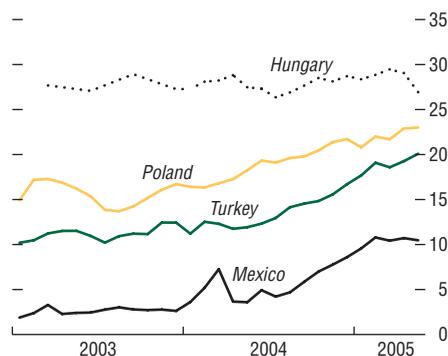
Source: World Bank.

**Box 2.3. Foreign Investment in Local Currency Instruments: A Cyclical or Fundamental Phenomenon?**

The level of foreign investment in emerging market local currency bonds has risen dramatically in recent years. In the more developed and open markets, such as Mexico, Poland, and Turkey, the share of local currency government bonds held by nonresidents has increased rapidly and, in some cases, more than doubled in the last two years (see first figure, below). In surveys of investors carried out by the EMTA, the volume of trade in secondary markets in local currency bonds, as a percent of total trade volume, has risen from 25 percent in 1997 to 45 percent in 2004 (see second figure, right).

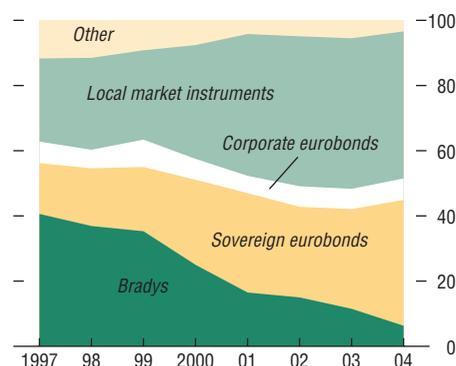
Is this rapid rise in local currency investments a cyclical or a fundamental phenomenon? The trend undoubtedly has a strong cyclical component. Abundant global liquidity has fostered a quest for high-yielding assets such as emerging market local currency bonds as spreads on more conventional asset classes (including hard currency emerging market bonds) have compressed. However, there are also some fundamental changes in financial markets that suggest local currency bonds are emerging as an important asset for foreign

**Share of Nonresident Holdings of Government Local Currency Bonds**  
(In percent)



Source: National central banks.

**Emerging Market Debt Trading: Market Share by Instrument**  
(In percent)



Source: EMTA.

investors. This box focuses on the following changes:

- innovations that have enhanced foreign investor access to, and knowledge of, local currency bond markets;
- a wider, more stable foreign investor base; and
- the development of local currency bond markets by emerging market governments.

**Innovations in Investor Access to Local Currency Bond Markets**

The key innovations facilitating market access to local currency bond markets are as follows:

- The development of indices give active managers a benchmark against which to track performance. Such indices are essential market infrastructure. In June, JPMorgan Chase & Co. launched a local emerging market index, the “Government Bond Index—Emerging Markets” (GBI-EM), which is a local market equivalent of its widely used EMBI family of indices that track emerging market hard currency bonds. The index tracks 19 local-currency-denominated government bond markets worldwide in major

**GBI-EM Index Return Analysis***(In U.S. dollars; unhedged)*

Total Returns	GBI-EM						U.S. Treasuries
	Composite	Asia	Europe	Middle East/ Africa	Latin America	EMBIG Diversified	
2002	19.1	17.0	34.9	19.9	0.2	13.7	12.2
2003	18.8	11.8	8.3	48.5	8.8	22.2	2.4
2004	12.3	0.7	32.4	30.2	11.6	11.6	3.8
2005 (year-to-date)	-0.9	4.1	-5.6	-11.9	6.3	2.9	2.7
Cumulative	57.4	37.0	82.6	104.1	29.2	59.5	22.5
Annual return	14.2	9.7	19.3	23.2	7.8	14.7	6.1
Annual volatility	7.4	4.4	13.7	20.7	9.9	8.2	5.9
Sharpe ratio	1.7	1.8	1.3	1.0	0.6	1.6	0.8

Source: JPMorgan Chase &amp; Co.

Note: GBI-EM (Government Bond Index-Emerging Markets) is JPMorgan Chase &amp; Co.'s local emerging market index.

emerging markets.<sup>1</sup> The creation of the index was a response to the increasing appetite for emerging market local currency debt as investors sought to diversify their portfolios. The index was calculated retroactively to December 31, 2001, and shows that investors would have achieved striking returns in emerging market local currency bonds in recent years, continuing into 2005 in Latin America and Asia (see table).

- In Asia, the opening up of local currency bond markets has been facilitated by the public sector under the Asia Bond Fund 2 (ABF2), which is a family of funds established by a group of 11 central banks and monetary authorities in the region (EMEAP), for the purpose of investing in local currency bond markets.<sup>2</sup> ABF2 consists of nine separate

<sup>1</sup>The economies in the index are Brazil, Chile, China, Colombia, the Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, Poland, Russia, Singapore, South Africa, Thailand, and Turkey.

<sup>2</sup>The group is called the Executives' Meeting of East Asia and Pacific Central Banks (EMEAP) and includes the Reserve Bank of Australia, People's Bank of China, Hong Kong Monetary Authority, Bank Indonesia, Bank of Japan, Bank of Korea, Bank Negara Malaysia, Reserve Bank of New Zealand, Bangko Sentral ng Pilipinas, Monetary Authority of Singapore, and Bank of Thailand. ABF2 follows the establishment of the Asia Bond

funds: a Pan-Asian Bond Index Fund (PAIF) investing in sovereign and quasi-sovereign local currency bonds of eight EMEAP economies,<sup>3</sup> and eight single market funds investing in sovereign and quasi-sovereign local currency bonds of the respective EMEAP markets. Management of the funds will be undertaken by designated private managers using indices created by the International Index Company (formerly known as iBoxx). EMEAP have invested \$2 billion to launch the nine funds that will be open to subscription by other investors. The Hong Kong SAR fund was first, launched, on June 21, 2005, the PAIF fund was launched in Hong Kong SAR on July 7, 2005, and the Malaysia Fund was launched on July 18, 2005. The remaining funds are expected to be launched by October 2005.<sup>4</sup>

In addition to offering a low-cost option for investors to take local currency bond risk in

Fund 1, a fund established to invest in Asian sovereign and quasi-sovereign dollar-denominated debt. Additional information can be found on the EMEAP webpage: <http://www.emeap.org>.

<sup>3</sup>The eight EMEAP economies are China, Hong Kong SAR, Indonesia, Korea, Malaysia, the Philippines, Singapore, and Thailand.

<sup>4</sup>In the first week after its opening, the Hong Kong SAR fund received enough private investment to increase its value by 33 percent, reducing the EMEAP central banks' collective share to 75 percent of the fund's assets.

**Box 2.3 (concluded)**

the region, the ABF2 has spurred the development of competing local currency bond indices; it has also led to improvements in market infrastructure and the regulatory environment in relevant markets. For example, the ABF2 has spurred the development of regulations for exchange-traded funds in China and Malaysia. It has also encouraged countries to increase foreign investor access to local bond markets, accelerate tax reforms to eliminate withholding taxes on interest income from investments in local securities, and liberalize foreign exchange administration rules.<sup>5</sup>

- Two emerging market countries, Colombia and Uruguay, have issued local currency bonds in the international market in the last year, facilitating investor access to local currency exposure.<sup>6</sup>

**Foreign Investor Base for Local Currency Bonds**

The investor base for local currency emerging market bonds has expanded from a variety of sources (see figure):

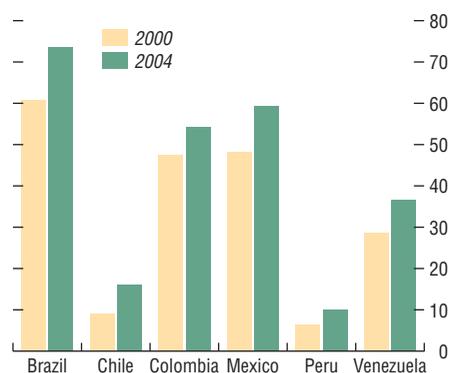
- Evidence suggests that institutional investors have moved as much as 10 percent of their emerging market exposure into emerging market local currency instruments, compared with minimal exposure three years ago. These investors, such as large pension funds and insurance companies, tend to make long-term allocations, thus they may constitute a relatively stable part of an investor base. Dedicated emerging market bond funds have also increased their exposure to local currency instruments.
- Global bond funds (those that include bonds from a broad range of countries, both mature and emerging) are also including some emerging market local currency bonds in their portfolios. This trend has been accelerated since the incorporation of bonds from

<sup>5</sup>An evaluation of the effects of ABF2 on the development of local bond markets can be found in the latest *BIS Quarterly Review* (June 2005); available via the internet at <http://www.bis.org/publ/quarterly.htm>.

<sup>6</sup>For a fuller account, see IMF (2005a, Box 2.6).

**Share of Local Currency Bonds in Total Debt**

(In percent)



Source: Standard & Poor's.

eight investment-grade emerging market countries in the Lehman Global Aggregate Index, a commonly used benchmark for global bond funds.<sup>7</sup>

**Development of Local Currency Bond Markets**

The development of local currency bond markets by emerging market governments has resulted in a wider variety of instruments and greater liquidity in local bond markets, which make local currency bond markets more attractive for international investors. Over the past year, a number of countries—most prominently Brazil, Chile, Mexico, Peru, and Turkey—have extended the maturity of their domestic debt profiles, partly to cater to the desires of investors for longer duration. In some cases, foreign investors have taken up a majority of the bond issues at particular maturities (e.g., in Mexico, where some of the issues at the long end of the curve have been taken up almost entirely by foreign investors). Sovereigns have also shifted the

<sup>7</sup>Since 2004, Chile, the Czech Republic, Hungary, Mexico, Poland, the Slovak Republic, Slovenia, and South Africa have been added.

composition of their debt toward local currency denomination, reducing the vulnerability of their debt stocks to exchange rate risk and increasing the liquidity of local currency markets.<sup>8</sup> This has been a factor in increasing credit ratings and making local currency debt more

<sup>8</sup>Increased reliance on domestic currency borrowing by sovereigns helps reduce currency mismatches. However, domestic bonds in many emerging markets tend to have shorter maturities than the external bonds that they are replacing, raising refinancing risk. In addition, the development of the local institutional investor base is important to balance foreign participation so that local markets are less prone to reversals in investor sentiment.

attractive.<sup>9</sup> As a result, the proportion of external debt in total debt has fallen in a number of countries, while the proportion of local currency debt has increased (see third figure).

<sup>9</sup>The two highest-rated sovereigns in Latin America, Chile and Mexico, have made the most progress in the region in replacing foreign-currency-denominated debt with local currency debt over the last 10 years. In addition, recent upgrades or outlook revisions for a number of sovereigns by Standard and Poor's, including Chile (January 2004), Peru (June 2004), Brazil (September 2004), and Mexico (January 2005) were all influenced to some degree by the increasing share of local currency debt in their total debt.

In the United Kingdom, demand for housing loans began to slow in the second half of 2004, as lending rates rose. While the annual growth rate of consumer debt remained above 13 percent, growth in mortgage borrowing slowed to 11.5 percent in the 12 months through May. Demand for residential real estate has declined significantly, as mortgage approvals in May 2005 were down 24 percent from May 2004. A decline in mortgage equity withdrawals may signal an increased reluctance of households to borrow for consumption and, therefore, could be followed by a more pronounced slowdown in consumer borrowing in the coming months. At the end of 2004, household debt represented 102 percent of GDP, and about 150 percent of annual household income, pointing to some potential vulnerability in household balance sheets.

### Corporate Balance Sheets

U.S. corporations experienced a prolonged period of relatively high productivity and profit growth, with strengthening balance sheets since 2000, but the growth in their cash flow has since slowed. Corporate cash

flow for nonfarm nonfinancial companies slowed to 2.2 percent (year-on-year) in the first quarter of 2005, compared with an annual average of 8.7 percent during the 2000–03 period. Owing to corporates' strong earnings and relatively muted growth in capital expenditures, there was little need for external financing, and the cash positions of corporate balance sheets grew (e.g., holdings of U.S. treasury securities grew from an average of \$18.1 billion in 1999–2001 to \$34.9 billion in the first quarter of 2005). These relatively large cash holdings have accelerated corporate share buybacks (e.g., equity buybacks reached an annual rate of \$226 billion in the first quarter of 2005 compared with \$157 billion during 2004), increased announced (and anticipated) dividend growth rates, and spurred merger and acquisitions activity. These trends, if sustained, could raise corporate leverage and eventually weaken credit quality to some degree.

Japanese corporations have continued to strengthen their balance sheets. Since the end of March 2004, the ratio of capital to assets in the Japanese corporate sector has remained high, at approximately 30 percent, and on par with its historically high level reached in 1990

### Box 2.4. Collective Action Clauses

The use of collective action clauses (CACs) in international sovereign bonds issued under New York law has become standard market practice. In the first two quarters of 2005, with one exception, all sovereign bond issues under New York law by emerging market countries included CACs. To date, there has been no observable impact on the pricing of bonds issued under New York law that included CACs.

Since March 2005, two more countries, Argentina and the Dominican Republic, included CACs in their bonds issued following their respective debt exchanges. This contributed to an increase in the stock of outstanding sovereign issues by emerging market countries that include CACs to approximately 53 percent in value terms as of June 30, 2005.

Ten emerging market countries—Brazil, Colombia, El Salvador, Indonesia, Lebanon,<sup>1</sup> Mexico, the Philippines, Turkey, Uruguay, and Venezuela—continued with their established practice of including CACs in their bonds issued under New York law. Jamaica was the only country that did not include CACs in its New York law bond. Italy, the only mature market country to issue under New York law, continued to include CACs in its bonds in that jurisdiction.

The bonds issued by Argentina and the Dominican Republic following their respective debt

<sup>1</sup>The Lebanon bonds include only majority restructuring provisions.

### Emerging Market Sovereign Bonds Outstanding Issuance by Governing Law

	Number of Issues		Value of Issues	
	(In billions of U.S. dollars)	(In percent)	(In billions of U.S. dollars)	(In percent)
New York	435	62	264	63
English	182	26	120	29
German	45	6	20	5
Japan	41	6	12	3
Total	703	100	416	100
<i>Of which:</i>				
with CACs	338	48	220	53

Sources: Dealogic; and IMF staff estimates (as of June 30, 2005).

exchanges included an aggregating voting provision, in addition to majority restructuring and majority enforcement provisions. The aggregation provision provides the option to amend key terms on the basis of aggregate voting across affected bonds in cases where the amendment affects two or more series of bonds. This practice in the design of restructured bonds was initially set by Uruguay, which has continued to include such provisions in its recent issues.

As is customary, all bonds issued under English and Japanese law included CACs. Austria, the Czech Republic, Hungary, Poland, Sweden, and Tunisia issued under English law. Hungary, Poland, and Thailand issued under Japanese law.

There were no new issues under German law.

### Emerging Market Sovereign Bond Issuance by Jurisdiction<sup>1</sup>

	2003				2004				2005 <sup>2</sup>	
	Q1	Q2 <sup>3</sup>	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2 <sup>4</sup>
<b>With CACs<sup>5</sup></b>										
Number of issues	9	31	10	5	25	19	19	15	18	39
<i>Of which: New York law</i>	1	22	5	4	14	12	12	13	11	23
Value of issues (in billions of U.S. dollars)	5.6	18.0	6.4	4.3	18.5	15.9	10.7	9.1	22.3	35.1
<i>Of which: New York law</i>	1.0	12.8	3.6	4.0	10.6	9.5	6.5	7.7	11.1	20.2
<b>Without CACs<sup>6</sup></b>										
Number of issues (in billions of U.S. dollars)	14	4	7	7	2	1	1	4	0	1
Value of issues	8.1	2.5	3.5	4.2	1.5	0.1	0.2	2.7	—	0.3

Source: Dealogic.

<sup>1</sup>Number of issuance is in number. Volume of issuance is in billions of U.S. dollars.

<sup>2</sup>Data as of June 30, 2005.

<sup>3</sup>Includes issues of restructured bonds by Uruguay.

<sup>4</sup>Includes settlements of restructured bonds by Argentina and the Dominican Republic.

<sup>5</sup>English and Japanese laws, and New York law where relevant.

<sup>6</sup>German and New York laws.

### Box 2.5. Foreign Direct Investment to Emerging Market Countries: An Asian Perspective

The IMF and the World Bank Group staff have been working to develop forward-looking qualitative assessments of prospective FDI flows to and from emerging market countries.<sup>1</sup> To capture FDI prospects and overseas business strategies, the IMF and World Bank staff have been building an informal contact network with senior executives from private sector companies and financial institutions. The results of this ongoing joint work will be reported regularly in future issues of the GFSR. In this box, we focus on developments in Asia and discuss recent contacts with selected companies active in various sectors and financial institutions in India, Japan, Malaysia, and Singapore. Other regions and selected cross-cutting FDI issues will be discussed in future issues of the GFSR.

The overall level of FDI into Asian emerging markets seems likely to continue growing. A broad interest in expanding FDI and overseas businesses was reported by both companies and financial institutions throughout the region. The main driver is the search for new markets in large, fast-growing countries and regions. China remains the most important planned destination, but interest in Indonesia and especially India is increasing rapidly.

There are some tentative signs of a reallocation of FDI inflows within Asia. While China remains the predominant location for FDI inflows, there are signs of a leveling off. Indeed, some investors are reassessing their investment plans in China, and the authorities are slowing down approvals in several overheated sectors. Within Southeast Asia, some reallocation of FDI inflows seems to be under way (with a decline of interest in large new investments) into Malaysia and Singapore owing

<sup>1</sup>The staff from the IMF's International Capital Markets Department, and from the Foreign Investment Advisory Service, International Finance Corporation, and the World Bank are participating and have jointly prepared this box. This work builds on the 2003 report: *Foreign Direct Investment in Emerging Market Countries Report of the Working Group of the Capital Markets Consultative Group (CMCG)*; it is available via the Internet at <http://www.imf.org/external/np/cm/cg/2003/eng/091803.HTM>.

to higher local costs and more modest growth prospects, and an increase into Indonesia and, to a lesser extent, Vietnam. Interest by foreign investors in India is continuing to grow substantially, yet inward FDI flows are seen by investors as remaining well below potential.

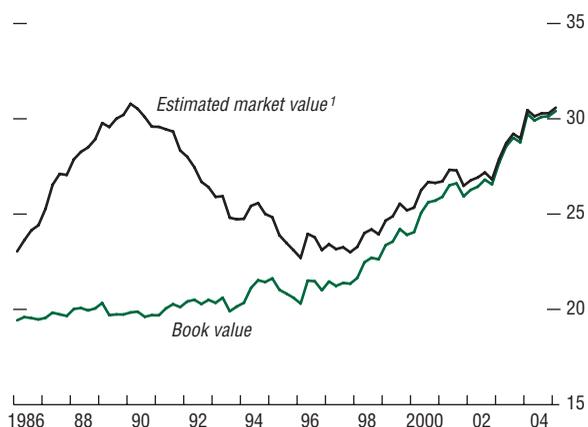
Outward FDI from Asian emerging market countries is expanding rapidly. FDI flows from China, India, Korea, Malaysia, Singapore, and Thailand are expanding rapidly and go beyond the well-publicized recent proposed large investments by Korea's POSCO and China's CNOOC.<sup>2</sup> Outward FDI is driven largely by the desire to penetrate new markets, while firms engaged in processing raw materials are aiming to secure upstream equity overseas. FDI has stayed largely within Asia except for those companies needing assured access to raw materials.

FDI flows from emerging market Asian companies are expected to continue expanding in the future. The slowing of domestic growth in some of the more mature Asian markets, coupled with the greater opportunities both within and outside the region is expected to fuel this growth. In the large economies of China and India, local companies will continue to want to secure natural resources—often from the developing world—to fuel their own growth. In addition, many firms in emerging Asia see a number of competitive advantages to investing elsewhere in the region, including geographic proximity, cultural affinity, and the ability to operate in smaller niche markets.

A trend toward greater reliance on local financing for FDI and overseas businesses was reported. Parent companies stated that they allow their subsidiaries to retain local profits for reinvestment. For funding the nonequity component of major new investments, companies look first to local banks, and in some cases—such as India and Malaysia—reliance is placed on local bond markets as well. However, there are exceptions. Most Japanese firms report that for large investments the parent company provides financing to overseas businesses and subsidiaries.

<sup>2</sup>CNOOC withdrew its offer for Unocal in early August.

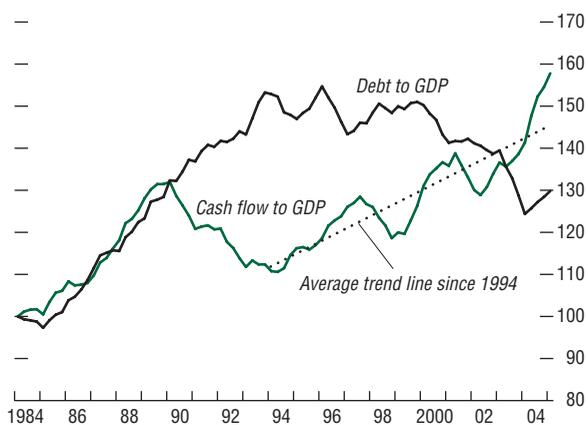
**Figure 2.46. Japan: Capital-to-Asset Ratio of Corporate Sector**  
(In percent)



Sources: Ministry of Finance, *Financial Statements Statistics of Corporations by Industry*; and IMF staff estimates.

<sup>1</sup>For capital and assets, equity and real estate are marked to the market.

**Figure 2.47. Japan: Corporate Debt and Cash Flow Relative to GDP**  
(March 1984 = 100)



Sources: Ministry of Finance, *Financial Statements Statistics of Corporations by Industry*; and IMF staff estimates.

(Figure 2.46).<sup>20</sup> Corporate balance sheets have strengthened since the mid-1990s because of accumulated earnings from the recovery in economic activity, the long but steady corporate restructuring process, and the current very low financing cost environment.

Fixed investment in the Japanese corporate sector has turned up, particularly since last year. This upturn has been supported by a rise in cash flow relative to GDP since early 2004, and, notably, external financing appears to have also risen, as indicated by the recovery in the debt-to-GDP ratio during the same period (Figure 2.47). The recent upturn in external financing has mainly been long-term borrowing, which usually finances private fixed investment.<sup>21</sup>

Although cash flow and profits relative to sales have been strong in the corporate sector as a whole, there appears to be some disparity in industry sentiment concerning business conditions between manufacturers and non-manufacturers. For example, judgments about business conditions have been generally improving for most industries in recent years, but the gap between manufacturing and non-manufacturing sectors has widened since 2002, and it has remained persistent during that period (Figure 2.48). Nonmanufacturing industries—which account for about 70 percent of all industry sales, including the so-called “bubble sectors” such as construction,

<sup>20</sup>Prior to the late 1990s, Japanese corporations reported equity and real estate assets at book value. If these assets were marked to market, corporate capital to asset ratios would have reached approximately 30 percent in 1990. Since that time, differences between book and mark-to-market valuations have narrowed, and have disappeared since 2001. See September 2004 GFSR for a more detailed explanation.

<sup>21</sup>According to the survey by the Ministry of Finance, “Financial Statements Statistics of Corporations by Industry,” the year-to-year change in nominal fixed investment by all industries grew at double-digit rates for the first three quarters of 2004, and continued to grow at 3.5 percent in the fourth quarter of 2004 and 7.4 percent in the first quarter of 2005, respectively.

real estate, and large retailers—continue to restructure, with relatively large amounts of debt on their balance sheets.

Earnings of nonfinancial corporations in the euro area improved in 2004, driven more by cost cutting than by revenue growth. Corporate demand for external financing has remained low, reflecting limited perceived investment opportunities and relatively liquid balance sheets. In contrast with previous periods, the growth of bank loans to the corporate sector, at 6.0 percent in the year through March 2005, has been mostly fueled by medium- and long-term borrowing. However, firms have been shifting from paying down existing higher-cost debt to shortening its maturity and increasing the share of variable rates with lower-cost and shorter maturity debt. This results in lower debt servicing costs in the short term, but increases vulnerability to rising interest rates. About 60 percent of outstanding corporate loans reset within a year.

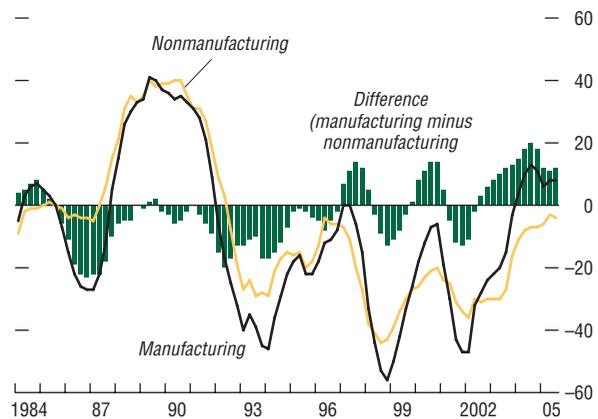
In the United Kingdom, corporate loan demand remained soft, picking up only slightly toward the end of 2004. Debt servicing costs rose, however, by about 12 percent over the year, as interest rates on corporate debt rose moderately. The corporate sector has been running a financial surplus for more than two years, accumulating record levels of liquidity. However, as in the euro area, corporations are now devoting a growing share of their financial surplus to increased share buy-backs or M&A activity, despite historically high levels of debt (Figure 2.49).<sup>22</sup>

### Bank Balance Sheets

Since the mid-1990s, U.S. commercial banks have continued to produce elevated returns on assets (ROA) and equity (ROE).

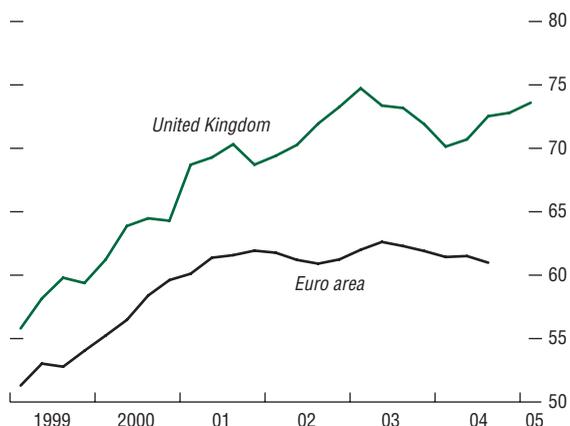
<sup>22</sup>For example, the number of domestic acquisitions by U.K. firms in 2004 rose by 32 percent (to 741 from 558) compared with the previous year, and the value of these acquisitions rose by 68 percent. See U.K. Office of National Statistics (2005).

**Figure 2.48. Japan: Business Conditions**  
(In percent, “favorable” - “unfavorable”)



Source: Bank of Japan, *TANKAN: Short-Term Economic Survey of Enterprises in Japan*.

**Figure 2.49. Euro Area and United Kingdom: Ratio of Nonfinancial Corporate Debt to GDP**  
(In percent)



Sources: ECB, *Monthly Bulletin*; and United Kingdom, Office for National Statistics.

In the first quarter of 2005, ROA and ROE were 1.35 and 13.1 percent, respectively, which are approximately in line with their 2002–04 averages (1.32 and 14.1 percent, respectively). The flattening yield curve during 2004 has narrowed net interest margins and partly limited the growth in interest income. Moreover, strong cash flow of U.S. corporates reduced financing needs, which led to modest growth in commercial and industrial loan revenues. Gains in noninterest income moderated to 2.6 percent from 8.9 percent in 2003. Among the 100 largest banks, noninterest income from fiduciary and securitization activities rose, but income from investment banking was approximately flat relative to 2003. Bank earnings were also helped by reduced provisioning, as cyclical improvements in economic conditions during 2004, and the continued trend of strengthening corporate balance sheets contributed to a decline in provisions for loan losses from approximately 12 percent in 2001 to 5 percent of total revenue, its lowest level since the mid-1990s.

Bank balance sheets expanded at an increased pace in 2004, as asset growth benefited from robust real estate (15.4 percent) and consumer lending (10.1 percent). Low mortgage rates in 2004 and robust growth in the housing sector led to strong gains (15.8 percent) in residential mortgage lending. Much of the acceleration in residential mortgage lending resulted from growth in revolving home equity loans, which grew by 40 percent. After a prolonged period of tepid growth, commercial lending has also showed signs of increasing, growing at a moderate 4.4 percent rate in 2004. Although bank holdings of securities also grew rapidly (10.6 percent), they constitute a relatively small share of bank assets (22.3 percent). Bank equity capital also rose rapidly (by 23 percent), although much

of this increase was attributable to several large mergers that boosted the value of goodwill (i.e., the excess of the cost of the acquired entity over the net of assumed assets and liabilities).<sup>23</sup> Credit quality also continued to improve as indicated by the rise in the ratio of reserves to delinquent loans to 85 percent, which is at the top end of the levels reported during the last decade (approximately 80–85 percent), even as the ratio of reserves to loans fell steadily by about one percentage point to its lowest level since the early 1990s (1.5 percent in 2004).

Among Japanese banks, the recent economic recovery and efforts to dispose of nonperforming loans (NPLs) have helped improve bank balance sheets further. The ratio of NPLs to total loans in all banks decreased to 4.0 percent at the end of March 2005, from its peak of 8.4 percent at the end of March 2002, and from 5.8 percent at the end of March 2004. This also reflects improvements in the corporate sector's balance sheets. Regional banks, however, have been slow to resolve the NPL problem, relative to major banks, particularly since the end of March 2002. The NPL ratio of regional banks was 5.5 percent at the end of March 2005; it has been reduced only moderately (by 2.5 percentage points) in this three-year period. In contrast, major banks reduced the NPL ratio drastically from 8.4 percent to 2.9 percent during the same period, and all of the major banks have met the government's target of halving NPL ratios.<sup>24</sup>

In addition to reducing the NPL ratios, Japanese banks have also reduced their stock holdings in recent years. Traditionally, Japanese banks, particularly the major banks, hold a significant amount of corporate stock on their asset side (i.e., stock market risk), largely for relationship purposes, which requires corresponding economic capital

<sup>23</sup>See Federal Reserve (2005).

<sup>24</sup>The government's target was to halve major banks' "aggregate" NPL ratio to approximately 4 percent by the end of March 2005.

to satisfy banking regulations. To improve their balance sheets, major banks have reduced their stock holdings to approximately 61 percent of Tier I capital at the end of March 2005, from 71 percent a year earlier from 99 percent at the end of March 2003, and from 133 percent at the end of March 2002.

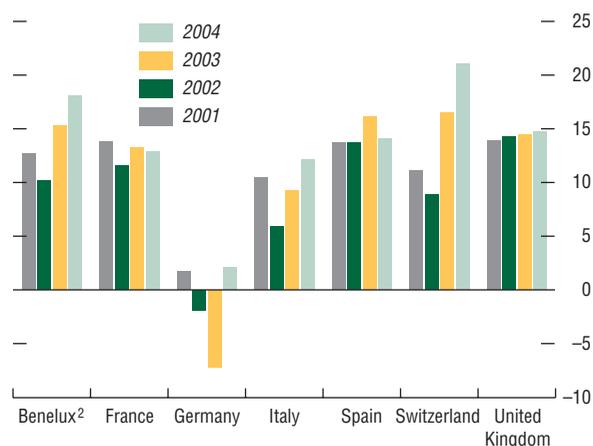
Despite stronger balance sheets, Japanese banks have not improved their weak profitability. Most banks recorded net profits in fiscal year 2004, but some of them, including a couple of major banks, continue to suffer losses. To be sure, Japanese banks have increasingly focused on the relatively more profitable retail banking business, including housing loans, and fee income business, such as over-the-counter sales of investment trusts and annuity insurance. These fee-oriented businesses have been growing significantly in recent years.<sup>25</sup>

In the euro area, bank profitability improved significantly in 2004, in many countries surpassing records set in 2000. For the major banks, return on equity reached an average of 11 percent in 2004 (Figure 2.50), supported by a combination of factors:

- Loan loss provisions continued to decline, and represented an average of 0.12 percent of assets at the end of 2004. In some countries they were close to all-time lows. Accordingly, the scope for further declines in provisions appears limited. However, we believe provisions and possibly loan losses have reached cyclical lows, and may be expected to rise cyclically going forward.
- Bank revenue continued to benefit from the growth in household activity and, more recently, corporate borrowing. While only

<sup>25</sup>For example, the Bank of Japan estimates that noninterest income of major banks has grown steadily to approximately 37 percent of total income in fiscal year 2004, compared with 33 percent in 2003, 28 percent in 2002, and 25 percent in 2001. However, the major banks continue to depend significantly on the traditional lending business, compared with U.S. counterparts.

**Figure 2.50. Selected Countries: Return on Equity<sup>1</sup>**  
(In percent)



Source: ©2003 Bureau van Dijk Electronic Publishing-Bankscope.

<sup>1</sup>Return on average equity of five largest commercial banks.

<sup>2</sup>Composed of Belgium, Luxembourg, and the Netherlands.

about one-third of the current stock of mortgages is variable, the share of such mortgages has been increasing rapidly. At the same time, competition among lenders has narrowed lending margins and loan-to-value ratios have edged higher, reaching 100 percent or more in some countries. Bank income may be better protected against interest rate increases with adjustable rate loans, but banks face potential uncertainties with regard to collateral value and households' ability to service mortgage debt.

- Noninterest income, fees, and commissions also contributed to income growth. Some banks have moved to buffer volatile trading revenues with higher fees and commissions. A number of European banks have also developed prime brokerage activities.

Similar trends have been evident among banks in the United Kingdom. Mortgage loans have remained among the major sources of bank revenue. Lending to nonfinancial corporates has been more dynamic in the United Kingdom than in the euro area, growing 9.9 percent annually through the first quarter of 2005. However, among corporates, real estate companies now account for more than 50 percent of new lending and more than one-third of outstanding bank loans. In contrast, bank lending to the manufacturing sector was down 3.7 percent (year-on-year) in March 2005.

The situation of German banks improved during 2004, but it remains less favorable than that of other European banks. Operating profits and net income of private banks rose significantly, as did returns on equity. Increased opportunities for securitization, particularly as the True Sale cash securitization platform has now become operational, may prove helpful as banks continue to strengthen their balance

sheets and improve profitability. Similarly, the introduction of real estate investment trusts (REITs) in Germany may help banks (and insurers) manage more actively their real estate exposure. In preparation for the removal of public guarantees, a reorganization of German landesbanks and savings banks appears to be under way.<sup>26</sup> However, German banks still need to improve their revenue base (as do banks elsewhere in Europe). Among European banks, those in the United Kingdom and Switzerland are the most profitable, with ROEs ranging from 14 percent to 25 percent in 2004.

Issuing activity in the covered bond market rose slightly in 2004, to an estimated volume of 211 billion euros across Europe. In several countries—including Belgium, Germany, and Italy—new or revised country-specific covered bond legislative frameworks were developed. As loan growth improves, one can anticipate greater volume in the covered bond and securitization markets.

### Market and Credit Risk Indicators for the Mature Market Financial System

This issue of the GFSR continues to refine our use of market risk indicators (MRIs) and credit risk indicators (CRIs) to review mature market financial systems. In the April 2005 issue, the MRI Index methodology was adapted to capture institution-specific risks. Also, a new CRI Index was introduced, that measured the default probabilities associated with first-to-default baskets of credit default swaps (CDSs) on financial institutions. In addition, much focus has been placed on the differentiation of these indices by type of financial institution. In this regard, three main groups were identified; large complex financial institutions

<sup>26</sup>One example is the increasing vertical integration between the landesbank and the savings banks in Hesse Thuring, which has led to the adoption of a common risk management system and a mechanism for mutual support. Another innovative approach to reorganization is the cross-border alliance between Nord-Landesbank and the Norwegian bank, DnB NOR.

(LCFIs), commercial banks, and life insurance companies.<sup>27</sup>

In this issue, the CRI Index is modified to reflect the probability of multiple defaults. This approach may be superior to a focus on the likelihood of a single default, because understanding the potential for systemwide or multiple defaults (particularly of key institutions) is arguably more relevant from a financial stability policy perspective. Of course, the failure or severe distress of a single institution that plays a dominant role in the functioning of a market can also have systemic implications.

Also, in order to make the CRI more consistent between LCFIs and commercial banks, we made some adjustments to the list of commercial banks used in the CRI.

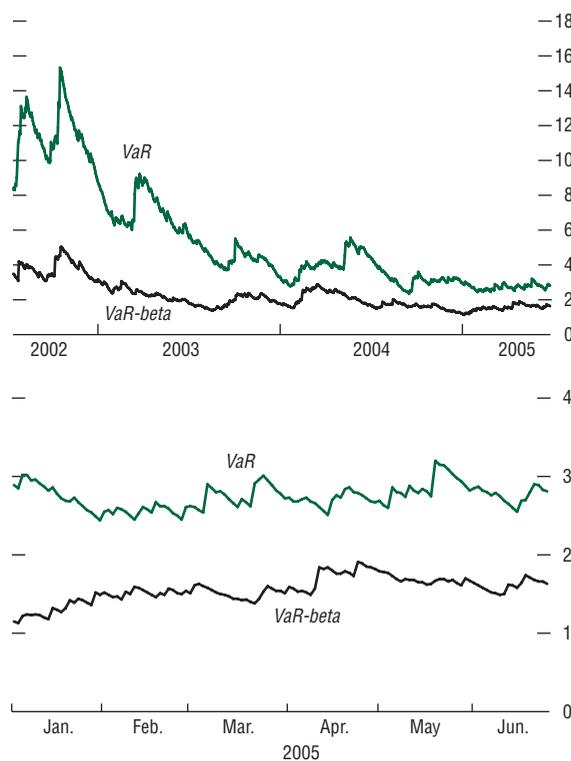
### Market Risk Indicators

The following MRIs attempt to highlight the risks related to a set of particular institutions, and are based on the value at risk (VaR) of a portfolio of equities issued by these institutions.<sup>28</sup> In order to isolate the

<sup>27</sup>The definition of LCFIs is the same as that suggested in Hawkesby, Marsh, and Stevens (2005) and comprises ABN Amro, Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse Group, Deutsche Bank, Goldman Sachs, HSBC Holdings, JP Morgan Chase & Co., Lehman Brothers, Merrill Lynch, Morgan Stanley, Société Générale, and UBS. The commercial banks captured in the MRI are Australia and New Zealand Banking Group, Banca Intesa, Banco Bilbao Vizcaya Argentaria, Bank of East Asia, Bank of Nova Scotia, CIBC, Commerzbank, Fortis Bank, HVB Group, ING Bank, KBC Bank, Mitsubishi Tokyo Financial, Mizuho Financial, National Australia Bank, Nordea, Royal Bank of Canada, Royal Bank of Scotland, SanPaolo IMI, Santander Hispano Group, Skandinaviska Enskilda Banken, Sumitomo Mitsui Financial, Svenska Handelsbanken, Toronto Dominion, UFJ Holdings, UniCredito, Wachovia, and Westpac Banking Corp. The CRI focuses on a smaller group of such banks for which CDS quotations are available.

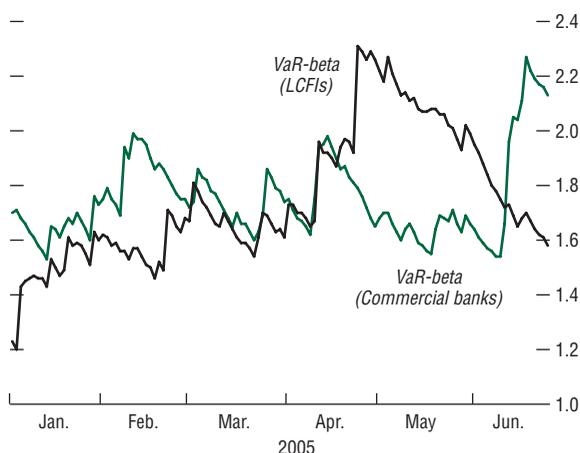
<sup>28</sup>More specifically, our VaR measures the market capitalization-weighted potential loss over a 10-day period at the 95 percent confidence level. The variances and correlations used in the computations are, at each point in time, daily estimates over a 75-day rolling period, and are obtained using an exponential smoothing technique that gives more weight to the most recent observations.

**Figure 2.51. VaR With and Without Market Effects (VaR-Beta) for the Full Portfolio of Financial Institutions**  
(In percent)



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

**Figure 2.52. VaR-Betas for LCFIs Versus Commercial Banks**  
(In percent)



Sources: Bloomberg L.P.; and IMF staff estimates.  
Note: LCFIs are large complex financial institutions.

**Figure 2.53. Market Implied Correlation on CDX 5-Year Investment-Grade Tranches**  
(In percent)



Source: JPMorgan Chase & Co.

risks to the specific institutions in question, a methodology suggested by Hawkesby, Marsh, and Stevens (2005) is used to filter their equity price changes to remove the effects of global and domestic equity market volatility (VaR-beta). During the first quarter of 2005, both VaR measures for the portfolio of financial institutions continued to fluctuate in fairly narrow bands (Figure 2.51), suggesting that there have not been any significant changes to the aggregate risk profile of these financial institutions.

The VaR-betas in Figure 2.52 isolate the VaR-betas of the LCFI and commercial bank groups. They show that there was a surge in the risk profile of the LCFI portfolio at the end of April, as its VaR-beta rose sharply. However, it gradually returned to pre-April levels by the end of June. The jump in the VaR-beta of the LCFIs corresponds to market reports that a number of the credit derivative dealers among the LCFIs experienced relatively material losses from engaging in complex arbitrage trades with single-tranche collateralized debt obligations (as had some of their counterparties). These losses stemmed from a reassessment of idiosyncratic risks in the markets for these instruments.

More specifically, there was a structural shift in the trends among the implied correlations and prices for CDO tranches on which market participants based their trading strategies (Figure 2.53).<sup>29</sup> Many insurance compa-

<sup>29</sup>The correlations referred to here are the correlations between the reference credits that underlie the CDO. As explained in Box 2.6, decreases in this correlation measure are associated with increases in equity tranche risk, and therefore spread widening (and price decreases). The specific details of this trade are discussed in Box 2.1, but the following will highlight the structural elements of the CDO market that underpin this transaction, and discusses structural changes that affected market dynamics. These changes in the correlation structure are an example of the risks and vulnerabilities associated with specialized capital arbitrage strategies driven largely by quantitative valuation models.

nies purchase the lower-risk senior and mezzanine tranches of CDOs for diversification and yield pickup, and generally employ a buy-and-hold strategy. Also, commercial banks and pension funds that participate in the CDO market tend to focus on the senior and super-senior tranches. By contrast, hedge funds and bank proprietary trading desks often purchase the higher-risk equity tranches, and employ trading and hedging strategies that depend on relatively stable price differentials (and correlations) between the different CDO tranches.<sup>30</sup>

In late April 2005, however, the implied correlations between equity and mezzanine tranches began to depart from their perceived historical patterns, in part because of selective spread widening attributable to increased idiosyncratic risks, such as arose in the auto sector (see earlier discussion on the downgrading of GM and Ford). Instead of declining, prices on mezzanine CDO tranches rose in late May and early June largely because of short-covering activity. A surprising source of liquidity and price support for the CDO equity market was other hedge funds, which had capital to employ and subsequently purchased the equity CDO tranches when prices dropped to attractive levels. Their actions helped prices to recover and limited losses during late May and early June, and this pattern is clearly evident in Figure 2.52, as the LCFI VaR-betas returned to pre-April levels.

There was a mid-June surge in the commercial bank VaR-beta following the aforementioned uncertainty over the direction of ECB interest rate policy (see Figure 2.52).

The VaR-betas for a portfolio of European life insurance companies, based on the prices of their outstanding equity securities, continued to fluctuate in a fairly tight range, suggesting that there have not been any significant changes to the aggregate risk profile of these insurance companies (Figure 2.54).<sup>31</sup> However, the VaR-betas of the U.S. insurers surged higher between late March and early April, largely as a result of the acknowledgment by the American International Group (AIG) of financial statement inaccuracies, and because of their much larger fixed-income and credit risk exposure compared with their European peers.<sup>32</sup> AIG's credit ratings have since been downgraded from "AAA" to "AA" by all the major rating agencies, with S&P and Fitch indicating that the firm's rating outlook remains negative. The VaR-betas of the U.S. insurers also spiked up on May 4 as the share price of MetLife surged on better-than-expected quarterly earnings.

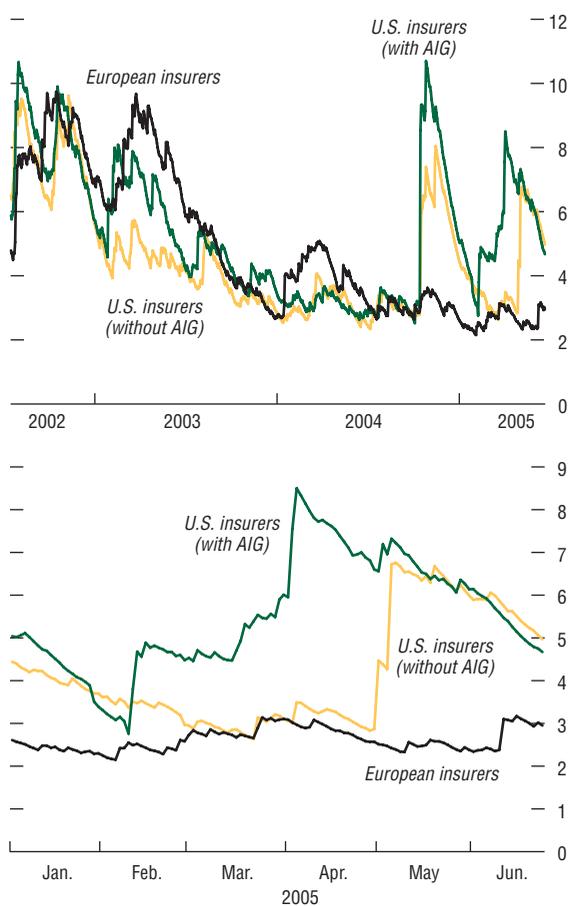
It is noteworthy that the increase in this MRI was caused by rising share prices. One of the characteristics of these parametric VaR risk measures is that the risk metric increases with the volatility of the underlying assets, regardless of whether the volatility is associated with price increases or decreases. We will address this and other shortcomings as we continue to develop our risk indicators. However, as it stands now, our MRI analysis for this period highlights the increased volatility related to the auto sector downgrades, but does not point to any particular or sustained financial stability concerns at this time.

<sup>30</sup>As noted in Box 2.1, a popular transaction was to partially finance long positions in equity CDO tranches with short positions in mezzanine tranches, so that any price decline in the equity tranche would be offset so long as the correlation and relative price structure among CDO tranches remained stable. Similarly, many hedge funds partially hedged their equity CDO positions with positions in the underlying credit derivative indices and/or single-name CDSs, which was meant to protect against CDS spread widening, but not against shifts in correlations.

<sup>31</sup>The life insurance companies captured in the MRI were Aegon, AIG, Allianz Group, AXA, Friends Provident, Gruppo Generali, Hartford Financial Services Group, MetLife, Prudential Financial, Prudential PLC, Sampo, Skandia, and Swiss Life.

<sup>32</sup>Figure 2.54 also charts the VaR-betas for the portfolio of U.S. life insurers excluding AIG ("U.S. ex-AIG") to highlight the specific impact of AIG.

**Figure 2.54. VaR-Betas for Portfolios of Life Insurance Companies**  
(In percent)



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

### Credit Risk Indicators

The following CRIs attempt to measure the risk associated with the world’s largest financial institutions, as implied by the market’s pricing of credit default swaps. To capture potentially correlated defaults, the CRIs are based on a basket of CDSs referenced to the institutions in question. Since, from a systemic risk perspective, it is the potential for systemwide or multiple defaults that may be most relevant for financial stability considerations, the probability of more than one default in the basket will be the specific CRI metric evaluated.<sup>33</sup> In calculating the CRI, two important assumptions are made. First, risk-neutral default probabilities are imputed from five-year CDS quotes, assuming a 45 percent loss-given-default (LGD) rate. Second, the methodology is based on a “structural” model that requires inter-obligor equity correlations as an input. The impact of correlation assumptions on the CRI is discussed in Box 2.6.<sup>34</sup>

For both the LCFIs and commercial banks the probability of multiple defaults rose steadily from mid-March and surged higher in mid-May, as the market digested the auto company downgrades and the related volatility in the structured credit market (Figure 2.55).<sup>35</sup>

<sup>33</sup>In future issues of the GFSR, we will focus on the probability distributions of loss amounts, rather than on probabilities. This would recognize a size effect, in that the default of one large financial institution could be systemically more important than the simultaneous default of two smaller institutions.

<sup>34</sup>All of these assumptions will be reviewed in future issues of the GFSR. For example, rather than using risk-neutral probabilities, consideration will be given to using empirically based probabilities. Hull, Predescu, and White (2005) compare the two measures, and Vassalou and Xing (2004) show how default probabilities can be derived from equity prices. The equity correlations used in this issue are roughly based upon those estimated by Hawkesby, Marsh, and Stevens (2005), but we will base the correlations on our estimates in the forthcoming GFSR issues.

<sup>35</sup>The LCFIs referenced by the CDSs are the same institutions used in the MRIs, but a smaller sample of reference commercial bank obligors was selected for the CRIs. For purposes of comparing basket default

The increased LCFI default probability may have been exacerbated by the potential for losses on the aforementioned CDO equity tranche arbitrage trades.

Unfortunately, it is not possible to filter from this CRI the impact of general market factors as done for the MRIs. However, general credit risk levels, as measured by the par spread on the five-year CDX investment-grade index, moved roughly in unison with the multiple default probabilities among financial institutions (Figure 2.56).

CDS price data for individual insurance companies remains very limited, but as more data become available, we will expand our CRIs for the insurance sector. We hope this will produce some interesting financial stability analyses, as the pricing of CDSs referenced to insurance companies may reflect less or no perceived government support in the event of failures (compared with commercial banks and LCFIs). Also, many insurers are currently adjusting their investment portfolios and increasing their exposure to credit instruments.

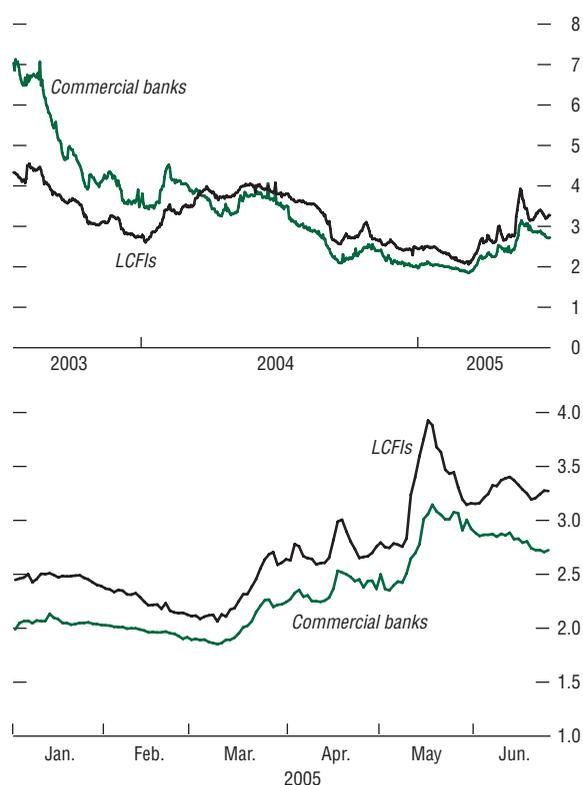
### Summary

Aside from some transitory volatility in the structured finance market related to the GM and Ford downgrades, neither the MRIs nor CRIs point to any particular fundamental financial stability concerns. However, the volatility and related price movements from the April–May CDO activity merits careful attention. Although the market is still relatively small, this particular episode did highlight generally the concentration of participants and the related potential liquidity concerns.

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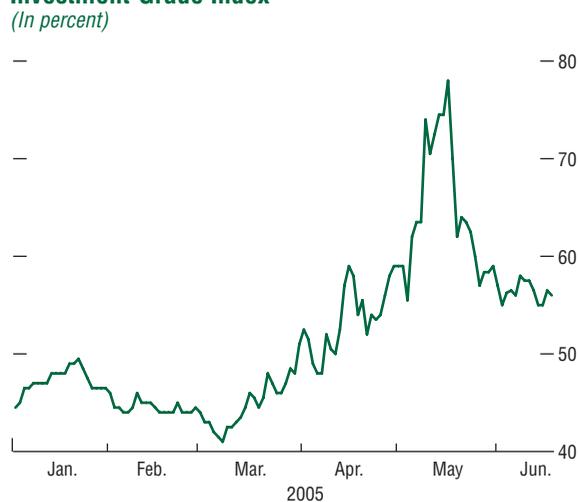
probabilities, the number of banks in the commercial bank basket was set equal to the number selected for the LCFI basket. Hence, the following commercial banks were selected for the CRIs: Fortis Bank, Crédit Agricole, HVB Group, Commerzbank, Unicredito, SanPaolo IMI, Mizuho Financial, UFJ Holdings, Sumitomo Mitsui Financial, ING Bank, Skandinaviska Enskilda Banken, Royal Bank of Scotland, HBOS, Wachovia, and Santander Hispano Group.

**Figure 2.55. Probability of More Than One Default Among the Portfolios of Financial Institutions**  
(In percent)



Sources: Bloomberg L.P.; and IMF staff estimates.  
Note: LCFIs are large complex financial institutions.

**Figure 2.56. Spread Levels on 5-Year CDX Investment-Grade Index**



Source: JPMorgan Chase & Co.

More specifically, one concern is with respect to the “model risk” discussed in Fender and Kiff (2004), with most practitioner pricing and risk measurement models making fairly simplistic assumptions about the probability distributions of defaults. In addition, key inputs such as individual obligor default probabilities and correlations are open to debate. The Bank of England (2005) also points to delays in model recalibration, following the kind of input gaps seen in April–May, as potential destabilizers. They report that recalibration can take days or even weeks, during which time hedge positions may be ineffective.

Another concern is with respect to potential contagion, particularly liquidity-related issues surrounding hedge fund involvement in these activities. In the first instance, as participants (primarily hedge funds and dealer proprietary trading desks) attempt to adjust their hedges, often by purchasing protection on the underlying indices or CDS contracts, spreads widen out (or even overshoot fundamentals) in the particular indices or contracts. As spreads widen and liquidity dries up, participants may look for other asset classes, and possibly more liquid and relatively well-performing assets for liquidity (e.g., emerging market bonds) and thereby widen spreads in other areas. Moreover, as the losses associated with these trades become apparent to hedge fund investors, or are not reversed in subsequent months, redemption pressures may manifest themselves in further market volatility, as hedge funds are forced to liquidate positions. This did not materialize in the April–June period. However, the situation should be monitored with respect to potential September 2005 redemptions.<sup>36</sup>

<sup>36</sup>According to a recent Fitch Ratings report, hedge funds generally add liquidity to credit markets, but that the high-yield corporate sector (which may include emerging market bonds) could be vulnerable to a forced deleveraging of one or more large credit-oriented funds (Merritt and others, 2005).

### Box 2.6. Impact of Correlation Assumptions on Multiple Default Probabilities and CDO Tranche-Specific Default Risk

The credit risk indicator (CRI) multiple default probability metric is based on a basket that consists of 15 equal-sized credit default positions. The probability of multiple defaults is a function of the individual reference obligor default probabilities and their potential correlation. Codependence in the CRIs is based on a Gaussian copula model that assumes that a single common factor ( $m$ ) drives the correlation of defaults in the basket. The normalized asset values ( $x_i$ ) are produced by the following formula:

$$x_i = \sqrt{a_i} m + \sqrt{1-a_i} z_i,$$

where  $x_i$ ,  $m$ , and  $z_i$  are mean-zero, unit-variance normally distributed random variables, and  $a_i$  is the correlation of  $x_i$  with  $m$ . All of the  $m$  and  $z$  variables are assumed to be independently distributed, and  $m$  is constrained to be between zero and one. Default is assumed to occur when  $x_i$  is less than the negative of the distance to default which, in the context of the Gaussian copula model is equal to  $N^{-1}\{q_i(t)\}$  where  $N^{-1}\{\}$  is the inverse of the standard cumulative normal distribution and  $q_i(t)$  is the risk-neutral probability of obligor  $i$  defaulting before  $t$ .<sup>1</sup>

We will use a simplified example to show what this means for our CRIs. It assumes that all 15 obligors have the same one-year risk-neutral default probability (i.e.,  $q = q_1 = q_2 = \dots = q_{15} = 1$  percent) and all have the same correlations with each other ( $a = a_1 = a_2 = \dots = a_{15}$ ). The figure shows the default probability distributions for three scenarios that differ only by the inter-obligor asset correlations ( $a = 0, 50$ , and  $100$  percent). In broad terms, with these assumptions, the chart shows that the higher the correlation, the fatter the tail of the distribution. For example, the probability of there being more than 10 defaults is zero when the correlation is zero, 0.02 percent when it is 50 percent, and 1.00 percent when the obligors' assets are perfectly corre-

<sup>1</sup>For more detailed information on the implementation of the Gaussian copula model used here, see Gibson (2004).

#### Impact of Correlation Assumptions on Tranche Loss Probabilities<sup>1</sup>

(In percent)

Tranche <sup>2</sup>	Correlation Assumption		
	0%	50%	100%
Equity	13.03	5.75	1.00
Mezzanine	0.96	3.07	1.00
Senior	—	—	1.00

Source: IMF staff estimates.

<sup>1</sup>Calculations are based on a basket of 15 equally sized reference assets all with 1 percent probability of default.

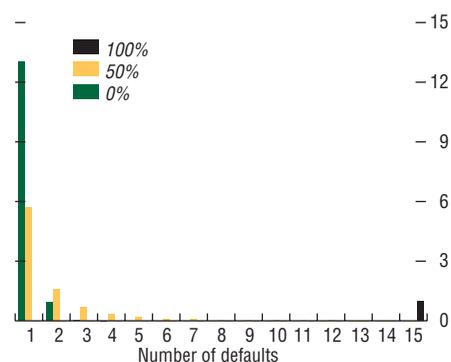
<sup>2</sup>The equity tranche absorbs the first loss, while the senior tranche absorbs the last loss.

lated. (In the last scenario, either none or all default.)

Hence, for our CRI metric, and for the trading and hedging of portfolios credit risk exposure, the correlation assumption is quite important. The assumption used in this issue, based on recent equity price correlations, was that the inter-LCFI correlations were a uniform 50 percent, and for the commercial banks 30 percent. The 50 percent inter-obligor correlation, in particular, may seem rather high, but both correlation assumptions are roughly con-

#### Probability of Multiple Defaults by Inter-obligor Asset Correlations

(In percent)



Source: IMF staff estimates.

**Box 2.6 (concluded)**

sistent with the findings reported in Hawkesby, Marsh, and Stevens (2005).

The correlation assumption is also important to the valuation and risk analysis of CDO and CDS index tranches. Essentially, such tranching products are derivatives on different parts of the loss distribution. For example, in the context of the 15 obligor CRI basket, an equity tranche might absorb the first loss, a senior tranche might absorb the fifteenth loss, and a mezzanine tranche might absorb the rest (the second to fourteenth). The table shows what the loss probabilities would be for the

three tranches under the three aforementioned correlation assumptions. It is apparent that low correlations (i.e., more idiosyncratic risk) increase equity tranche default risk, and that high correlations increase senior tranche risk.<sup>2</sup>

<sup>2</sup>It is believed that the main participants in the market for equity and mezzanine tranches are the hedge funds and dealers, whereas the insurers and pension funds are more focused on the mezzanine and senior tranches. Banks are also buyers of senior and supersenior tranches.

In future issues of the GFSR, these MRIs and CRIs will continue to evolve, in terms of the measures themselves and their inputs. The question of threshold levels will also be addressed, since the ultimate purpose of these indicators is to serve as potential early warning signals of possible stresses on mature market financial institutions and markets more broadly.

### Banking Sector Developments in Emerging Market Countries

Banking systems in emerging markets have generally maintained their trend improvement, although in several countries rapid credit growth is contributing to higher risk exposures (Table 2.4).<sup>37</sup> In Asia, the recovery in the financial positions of banks has largely continued, although not uniformly. In Latin America, while banks in previously distressed systems are showing stronger results, the recovery is not yet well entrenched and hinges on implementation of fundamental banking reforms. In emerging Europe, the drive for market share by foreign banks is fueling rapid credit growth in a number of

countries, underscoring the need for closer supervisory oversight. In the Middle East, Central Asia, and Africa, longstanding structural weaknesses in some countries are being exacerbated by political uncertainties.

#### Asia

Performance indicators for the banking systems in the region are on an upward trend. An environment of low interest rates and growth in household credit have contributed to better bank earnings. Banks in countries with an overhang of nonperforming loans have to varying degrees increased provisioning and write-offs to strengthen their balance sheets, even in countries with weak economies. However, significant vulnerabilities persist in the banking systems in a number of countries faced with high levels of distressed assets, underprovisioned bad loans, and significant exposure to interest rate increases. The main risks in the region are rapid growth of household lending and market risk. Following the Asian financial crisis, banks in the region adopted a more cautious attitude toward corporate lending and shifted toward greater retail lending, residen-

<sup>37</sup>Classifications and definitions of various financial soundness indicators are not uniform across countries.

**Table 2.4. Emerging Market Countries: Selected Bank Financial Soundness Indicators**  
(In percent)

	Return on Assets			Nonperforming Loans to Total Loans <sup>1</sup>			Regulatory Capital to Risk-Weighted Assets		
	2002	2003	2004 <sup>2</sup>	2002	2003	2004 <sup>2</sup>	2002	2003	2004 <sup>2</sup>
<b>Emerging Asia</b>									
Mean	0.8	0.9	1.3	15.5	13.1	10.8	13.8	14.3	14.3
Median	0.8	1.1	1.2	15.8	13.4	11.9	13.2	13.8	13.8
Standard deviation	0.4	0.5	0.5	10.0	8.5	7.5	3.7	3.9	3.6
<b>Emerging Europe</b>									
Mean	0.9	1.5	1.5	9.8	8.7	7.6	19.1	18.7	17.5
Median	1.2	1.4	1.4	8.2	6.2	5.0	18.0	15.7	16.6
Standard deviation	2.5	1.1	1.1	6.7	8.0	7.8	6.6	7.0	6.5
<b>Latin America</b>									
Mean	-1.3	1.3	1.6	12.0	9.6	6.6	13.7	14.7	16.1
Median	1.1	1.3	1.6	9.0	7.8	5.2	14.4	14.2	14.5
Standard deviation	9.3	2.0	1.4	9.9	7.9	4.8	5.2	2.7	4.3
<b>Middle East</b>									
Mean	1.2	1.2	1.5	14.7	14.3	13.4	15.2	14.9	14.6
Median	0.8	1.2	1.3	16.1	14.0	11.3	15.7	14.8	14.2
Standard deviation	0.8	0.9	0.8	4.5	6.5	8.1	4.4	5.3	4.7
<b>Sub-Saharan Africa</b>									
Mean	2.1	3.1	3.1	16.9	14.6	13.3	17.7	16.6	16.9
Median	1.3	2.9	3.1	18.5	13.8	14.2	17.3	17.2	17.2
Standard deviation	2.1	1.7	1.5	7.4	7.8	6.3	4.2	4.2	3.6

Sources: National authorities; and IMF staff estimates.

<sup>1</sup>Refers to gross nonperforming loans.

<sup>2</sup>Latest available figures in 2004.

tial mortgage loans, credit cards, and other consumer lending. For most Asian countries, mortgage loans account for about 55–65 percent of household lending. While household loans have helped resuscitate banks' rates of return, the rapid growth, lack of bank experience in lending to this sector, and widespread gaps in information on borrowers' creditworthiness have raised concerns that risks are growing in some countries.

The authorities in the region are responding to the hard lessons of the past and have introduced various measures, including minimum eligibility criteria on credit card applications and tightening other regulations on debt limits. Many countries have also taken steps to accelerate the development of both public and private credit information bureaus. Gaps, however, remain with respect to bankruptcy laws and creditor protection.

A number of Asian banking systems have a significant exposure to higher interest rates arising from large government securities hold-

ings and other long-dated assets. These risks are mitigated for some of these countries, where strong capital inflows and upside pressures on exchange rates limit the risk of higher interest rates or where securities held are predominantly with floating rates.

Regulators in the region are at varying stages in implementing plans regarding Basel II. The more sophisticated financial systems in the region seem most prepared to apply the advanced Basel II approaches in accordance with the Basel Committee timetable. Most other countries in the region will likely implement Basel II in a phased manner, moving first to the less complex standardized approach, typically in 2007–08.

### Emerging Europe

Solid economic growth in most of emerging Europe has contributed to increased bank profits and falling NPLs. While macropolicies have, for the most part, been supportive of

financial sector stability, credit growth in many countries in the region has continued to be very rapid. Although the credit-to-GDP ratios in these countries are below industrial country norms, so that the growth often reflects financial deepening, overly rapid growth on a sustained basis could ultimately lead to credit quality problems.

In some countries in the region, the trend toward increased foreign currency lending is continuing, especially for unhedged consumer loans and mortgage loans. This reflects relatively high interest rates on domestic currency loans and the ready availability of foreign currency funding from the parent institutions of foreign-owned banks in some cases. A few countries have considered supervisory actions to ensure that banks are adequately assessing and pricing the inherent risks of foreign currency lending and are provisioning appropriately. The emphasis, however, generally has been on dampening demand by enhancing consumer awareness of the risks, with only limited success.

The structure of the financial system is becoming skewed toward foreign banks, with the expansion of some Western European banking groups in central and southeastern Europe. Currently, close to 70 percent of banking assets in the region are controlled by foreign-based (mostly EU-15) banks.

Emerging European countries have made substantial progress in strengthening supervisory frameworks, especially by implementing EU directives. Significant gaps nevertheless remain in many countries, reflecting the still underdeveloped nature of the nonbank component of many financial systems. Supervision in the region also generally needs to be more risk based and supervisory expertise and staffing need to be strengthened in many cases.

### Western Hemisphere

Banking systems continue to benefit from improved economic performance. With the

exception of countries emerging from financial crises or affected by political turbulence, overall financial institutions have performed well in recent months, recording in most cases stable, or improving, indicators of bank soundness, such as capital adequacy, asset quality, and profitability. Market indicators also suggest a strengthening of banks' financial position and confidence. These trends are evident in most of the larger economies of Latin America.

Buoyant consumer demand in much of the region is leading to strong growth in lending to the household sector. In the region, this line of business has been developing from a very low base, and growth in consumer credit has been rather strong—in some cases, more than 40 percent in the year to March 2005. Experience in other countries suggest the need for some caution regarding the adequacy of risk assessment processes in systems undergoing such rapid expansion in new forms of lending.

While the countries most affected by major financial crises have seen a rebound in intermediation and bank soundness, the systems in these countries remain vulnerable and restoring both soundness and functionality will take more time. Political factors have also recently complicated the financial landscape in a number of countries in the region and highlighted vulnerabilities in banks that are still bearing the costs of the previous crisis.

The overall positive bank performance in the region is cushioning the effects of tightened prudential requirements as part of the authorities' effort to bring financial sector oversight in line with international standards (including the phased introduction of Basel II requirements).

### Middle East and Central Asia

The banking systems of the Middle East and Central Asia region have on the whole strengthened, although it shows considerable differences across countries. In the member countries of the Commonwealth of Independ-

ent States (CIS) in Central Asia and the Caucasus, banking sectors remain small and underdeveloped but financial intermediation is deepening, in some cases very rapidly. The banking sector in the Maghreb countries are more developed overall but, in several cases, are weighed down by state-owned institutions that play quasi-fiscal roles, suffer from weak asset quality, and retain large market shares. In the petroleum-exporting countries of the Gulf Cooperation Council (GCC), high oil prices have supported strong economic activity and asset prices, although the extent to which booming stock and real estate markets are being fueled by bank credit is not clear. Financial soundness indicators are also fairly robust across the region, in most cases pointing to constant or improving asset quality and capitalization. Profitability is particularly strong in the GCC countries, where banks hold relatively large proportions of noninterest-bearing deposits because of the cultural preferences of many customers. In some GCC countries, noninterest income (e.g., from brokerage fees) has also been strong. Islamic banking has also played a significant role in several GCC countries.

Rapid and accelerating credit growth requires careful monitoring in a number of countries in the region. The expansion of private sector credit has been most bullish in the CIS area, followed by the GCC countries. In many cases, this is concentrated in consumer lending or other areas where banks are relatively inexperienced; in many countries, consumer loans are secured on the basis of salaries; this practice mitigates risks. Although in most instances banks' direct exposures to the stock and real estate markets remain limited, growing loan volumes could stretch risk management capacities. Supervisors in the region need to be alert to any dilution of credit quality.

### Africa

The performance of the banking systems in sub-Saharan Africa is improving in the

context of a favorable macroeconomic environment and, in particular, loan quality seems to be improving in many countries. However, data deficiencies continue to impede an accurate assessment of developments in the financial systems in the region. Moreover, the macroenvironment is susceptible to large external shocks, emanating from lingering conflicts in the region, uncertainties in donor flows, dependence of many countries on agriculture and/or minerals, and related vulnerability to droughts and commodity price shocks. Banks also have large exposures to governments. While large holdings of government securities make banks appear liquid, in reality liquidity is hampered by the absence of secondary markets for the government securities and the shallow money markets.

At a structural level, the contribution of the banking system to economic development remains limited. Banks often have large surplus liquidity, but financial intermediation and access to financial services is low because of structural impediments. Lending to the private sector is constrained by a range of factors including a poor credit culture, weaknesses in enforcement of creditor rights, lack of suitable collateral, the absence of a sufficiently diversified range of products, and deficiencies in the credit information systems. Although there has been progress in reforming the banking systems in sub-Saharan Africa, the remaining agenda is substantial. Policy priorities include (1) improvements in the judicial and other mechanisms for enforcing contracts; (2) sustaining reforms in the legal, regulatory, and supervisory framework for banks; and (3) developing exit strategies for weak banks and timely responses to bank restructuring.

### Rapid Credit Growth

As noted in the preceding regional reviews, a number of countries around the world are experiencing rapid growth in credit to the

**Table 2.5. Countries with High Credit Growth in 2004 by Region: Financial Soundness Indicators<sup>1</sup>**  
(In percent)

	Growth in Credit to Private Sector <sup>2,3</sup>			Three-Year Average Credit Growth	Private Sector Credit to GDP <sup>3</sup>			Three-Year Average Credit to GDP	Regulatory Capital to Risk-Weighted Assets <sup>3</sup>			Nonperforming Loans to Gross Loans <sup>3</sup>			Return on Assets <sup>3</sup>		
	2002	2003	2004		2002	2003	2004		2002	2003	2004 <sup>4</sup>	2002	2003	2004 <sup>4</sup>	2002	2003	2004 <sup>4</sup>
<b>Emerging Asia</b>	7.3	7.0	11.8	8.7	77.5	78.1	77.1	77.6	13.8	14.3	14.3	15.5	13.1	10.8	0.8	0.9	1.3
India	21.5	9.7	30.0	20.4	33.5	32.9	38.3	34.9	11.9	12.9	13.4	10.4	8.8	6.6	0.8	1.0	1.2
Indonesia	17.9	21.1	26.2	21.7	18.9	20.9	23.4	21.0	20.1	22.3	20.9	22.1	17.9	13.4	1.4	1.6	2.5
Bangladesh	16.7	9.3	17.0	14.3	27.2	26.8	28.2	27.4	7.5	8.4	8.7	28.0	22.1	17.6	0.5	0.5	0.7
China*	17.2	20.8	11.2	16.4	135.8	147.1	140.5	141.1	3.8	4.3	3.9	26.0	20.4	15.6	0.1	...	...
<b>Emerging Europe<sup>5</sup></b>	24.5	30.4	28.0	27.7	32.1	34.7	38.1	34.9	19.1	18.7	17.5	9.8	8.7	7.6	0.9	1.5	1.5
Belarus	68.8	81.2	60.7	70.2	9.1	11.7	14.0	11.6	24.2	26.0	25.2	10.8	6.2	4.6	1.0	1.5	1.4
Turkey	10.2	44.6	52.8	35.8	13.9	15.5	20.0	16.5	25.1	30.9	28.8	17.6	11.5	6.0	1.1	2.3	2.5
Latvia	36.9	45.3	50.0	44.1	26.5	34.6	45.4	35.5	13.1	11.7	11.7	2.0	1.4	1.1	1.5	1.4	1.7
Bulgaria	42.4	48.8	49.1	46.8	19.6	27.4	36.7	27.9	25.2	22.4	16.6	8.6	7.3	7.1	2.1	2.4	2.1
Russia	36.0	46.6	46.7	43.1	18.7	22.4	26.0	22.4	19.1	19.1	17.0	5.6	5.0	3.8	2.6	2.6	2.9
<b>Western Europe</b>	5.5	7.3	9.0	7.3	133.7	137.2	141.1	137.3	12.0	12.9	12.8	2.5	2.3	2.1	0.7	0.8	1.0
Ireland	8.7	13.7	24.1	15.5	136.9	147.8	169.4	151.4	12.3	13.9	12.6	1.0	0.9	0.8	1.0	0.9	...
Spain	11.6	15.2	18.0	14.9	113.7	122.9	135.2	124.0	12.5	12.5	11.6	1.1	1.0	0.8	0.9	0.9	1.0
Greece	14.7	16.2	17.2	16.0	68.7	73.6	80.2	74.2	10.5	12.0	11.9	7.3	7.0	7.1	0.5	0.6	0.8
United Kingdom	8.2	9.8	11.3	9.7	141.7	147.5	155.8	148.4	12.2	12.4	12.3	2.6	2.5	2.2	0.9	0.6	0.8
Finland	7.6	12.4	10.7	10.2	60.0	66.0	70.0	65.3	11.7	18.9	19.1	0.5	0.4	0.4	0.5	0.7	1.0
<b>Latin America</b>	8.2	5.0	14.0	9.1	33.8	31.5	31.0	32.1	13.7	14.7	16.1	12.0	9.6	6.6	-1.3	1.3	1.6
Venezuela	0.9	10.5	98.8	36.7	9.6	8.5	11.3	9.8	15.9	14.3	12.5	9.2	7.7	2.8	5.3	6.2	5.9
Ecuador*	-12.1	4.8	22.9	5.2	21.2	19.8	22.2	21.1	10.3	10.2	9.9	8.4	7.9	6.4	1.5	1.5	1.6
Argentina*	-26.1	-13.2	22.9	-4.3	15.1	10.6	10.3	12.0	13.9	11.7	11.2	38.6	33.6	18.6	-8.9	-2.9	-0.5
Paraguay	0.3	-25.4	15.4	-3.2	21.2	13.0	13.9	16.0	17.9	20.9	20.5	19.7	20.6	10.8	1.0	0.4	1.7
Chile	9.9	5.4	14.7	10.0	62.9	61.7	61.8	62.1	14.0	14.1	13.6	1.8	1.6	1.2	1.1	1.3	1.2
<b>Middle East and Central Asia</b>	16.8	19.2	26.3	20.8	35.1	36.0	37.6	36.2	18.7	18.7	17.5	14.7	14.7	13.5	1.5	1.5	1.7
<i>of which:</i>																	
Central Asia	26.9	38.5	48.6	38.0	10.3	13.4	16.9	13.5	...	...	...	...	...	...	...	...	...
Kyrgyz Republic	11.4	27.9	67.4	35.6	4.1	4.8	7.2	5.4	36.4	35.3	27.7	13.3	11.2	8.0	1.1	1.3	2.0
Azerbaijan	25.2	41.6	61.8	42.9	5.5	6.7	9.1	7.1	...	14.7	20.9	...	15.1	9.5	1.5	1.8	1.9
Kazakhstan	35.5	44.6	53.8	44.6	18.5	21.9	28.0	22.8	17.2	16.9	15.9	18.3	25.9	29.9	2.0	2.0	1.4
Armenia	1.8	3.9	40.7	15.5	6.9	6.0	7.2	6.7	30.5	33.8	32.3	12.5	9.9	7.2	3.9	2.7	3.2
Saudi Arabia	10.0	11.0	37.4	19.5	29.1	28.4	33.7	30.4	18.7	19.4	18.0	9.2	5.4	3.1	2.3	2.3	2.5
<b>Sub-Saharan Africa**</b>	26.8	38.6	22.1	29.2	14.1	15.2	14.7	14.7	17.7	16.6	16.9	16.9	14.6	13.3	2.1	3.1	3.1
Zimbabwe	189.9	621.5	135.3	315.6	17.3	38.4	20.4	25.4	30.6	16.2	...	4.2	4.7	...	4.0	6.7	...
Angola	221.5	135.6	59.5	138.9	4.8	5.2	5.3	5.1	20.1	18.1	20.5	10.4	9.0	13.3	0.7	4.7	3.6
Zambia	6.2	40.5	51.9	32.8	5.9	6.6	7.9	6.8	28.0	23.7	22.2	11.4	5.3	7.6	—	3.8	2.1
Sudan*	76.4	56.7	50.6	61.3	4.4	6.0	7.7	6.0	9.0	9.9	10.8	12.7	11.4	10.2	1.1	1.5	3.5
Sierra Leone	53.3	80.8	45.9	60.0	2.6	3.9	4.6	3.7	48.4	39.8	37.1	17.1	9.9	14.3	10.4	10.7	8.4

Sources: IMF, *International Financial Statistics* and *World Economic Outlook*.<sup>1</sup>The table reports the top five countries with highest nominal credit growth in 2004 from each region.<sup>2</sup>Nominal growth.<sup>3</sup>Simple average for the regional averages.<sup>4</sup>Latest available in 2004.<sup>5</sup>Credit in Emerging Europe is growing rapidly also in Estonia, Lithuania, Romania, and Ukraine.

\*Not risk-weighted capital ratio. For China, the indicators refer to state-owned commercial banks.

\*\*The credit growth figures for Zimbabwe and Angola reflect high inflation.

private sector (Table 2.5).<sup>38</sup> Many countries in emerging Europe and Central Asia experi-

enced credit growth of around 50 percent—Azerbaijan, Belarus, Bulgaria, Kazakhstan, Kyrgyz Republic, Latvia, Russia, and Turkey. In the Western Hemisphere, credit growth was especially strong in Ecuador and Venezuela,

<sup>38</sup>Table 2.1 presents countries with the highest growth rates in private sector credit in 2004 in each region.

and robust credit expansion was observed in 2004 in India and Indonesia. In Africa, credit expanded by about 50 percent in several countries.

The fast expansion in credit is taking place against the backdrop of relatively shallow financial markets in some regions. In Central Asia, average credit to GDP almost doubled over the last three years, but remains relatively low at about 17 percent. In many countries in emerging Europe, the level of financial deepening is also still quite low, especially relative to EU levels. The rate of growth of credit in some African countries has been high, but the change relative to GDP has not been very large because the base is low.

In a number of countries in emerging Europe, foreign currency lending to unhedged borrowers remains substantial, and foreign banks have also played a role in rapid growth in domestic credit. Bank of International Settlements data suggest that in some countries this has taken the form of local currency lending by subsidiaries of foreign banks, which accelerated sharply in 2004. Overall, the shift to local currency lending could lessen the risk to emerging market corporate borrowers. However, to the extent that credit expansion is funded by short-term bank borrowing from abroad, it is exposing the banking system to the risk of sudden withdrawal of such funding.

Rapid credit growth may be part of a structural process of re-intermediation, but it may also be caused by temporary factors or overshooting. The eventual reversal of these factors may release inflationary pressures, or reveal a deterioration in credit quality. Concern over rapid credit growth is heightened in cases where it is accompanied by exuberance in real estate markets, and is taking place in the context of macroeconomic imbalances and balance sheet weaknesses. Maintenance of bank soundness may lead supervisors in many of these countries experiencing rapid credit growth to tighten prudential measures even before there is evidence of deteriorating credit

quality. Increasing disclosure requirements, implementing more frequent inspections, and periodic stress testing can improve supervisors' ability to evaluate the risks in the financial system. Addressing information-based distortions by providing better information on borrowers' creditworthiness, banks' counterparty exposure, household and corporate indebtedness, trends in asset prices, cross-linkages between financial institutions, and so on, may also influence banks' risk-taking behavior. Banks' willingness to take on additional risk can be constrained by tightening rules on credit concentration and loan classification, by strengthening provisioning and collateral requirements, and by raising or imposing differential capital requirements based on the risk profile of individual banks.

Policies need to be aimed at maintaining credit quality, regardless of the aggregate credit level. Prudential instruments such as strengthening financial sector surveillance, tightening prudential regulations, and increasing transparency and information flows are best suited to achieve this objective. When both macroeconomic and prudential considerations are relevant, the policy response should address both objectives with an appropriate package of macroeconomic and prudential measures.

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