

This chapter assesses current financial market conditions and risks, in particular the effects of continued abundant global liquidity and improving credit quality on mature and emerging financial markets, and highlights the compression of inflation and credit risk premiums, and low volatility, that have been the key features across major markets. The external economic and financial environment for emerging markets has been exceptionally favorable. The domestic banking and financial systems of emerging market countries are showing signs of increased resilience as well. Many emerging market countries have appropriately used this environment to address vulnerabilities stemming from the level and structure of their liabilities. While financial markets and institutions remain resilient, risks could arise from growing global macroeconomic imbalances and the strong incentive for continued leveraged risk taking.

This chapter also analyzes key structural financial market developments and issues. Given the importance and relatively high volatility of energy markets, it updates earlier work on energy trading, which gained prominence following the sharp run-up in oil prices in 2004, by looking at the broadening of the investor base for energy-related commodities. It assesses developments in the rapidly growing hedge fund industry and uses market-based indicators to appraise the market and credit risks for banks and life insurance companies in the mature markets. It concludes with a report on the trend toward convergent accounting standards.

Market Developments

Financial market conditions remain benign. Favorable fundamentals, including expecta-

tions for solid, if slowing, global economic and earnings growth, limited inflationary pressure, sustained corporate balance sheet strength in the mature markets, and continued improvements in the credit quality of emerging market borrowers, are supporting financial market stability. Against this backdrop, market volatility, mature government bond yields, and global credit spreads have remained low—perhaps even too low.

Low short-term interest rates and low volatility are encouraging investors to move out along the risk spectrum in their search for relative value. The incentive to use leverage to boost returns is still strong. The premiums for inflation and credit risk appear compressed. There is little cushion for bad news regarding asset valuations if expectations for continued favorable fundamentals change.

Risks include a spike in U.S. interest rates, resulting from unanticipated inflationary pressure or a reduction in the exceptionally large foreign portfolio inflows into U.S. fixed income markets. So far, the expectation that U.S. monetary policy will be tightened gradually has provided a firm anchor to financial markets. A continued measured withdrawal of stimulus remains appropriate, and it will likely contribute to continued stability. But it remains important to be vigilant about concentrated exposures or leveraged positions that have been encouraged by low rates and low volatility. The unwinding of these conditions represents a potential source of turbulence.

Persistent global imbalances reflect underlying vulnerabilities that could increase the risk of sharp currency movements and spillovers into other asset markets if not addressed. Portfolio inflows, originating increasingly from the official sector and destined largely for U.S. bond markets, have so far facilitated

an orderly, if unbalanced, decline of the dollar. Such flows cannot be counted on indefinitely. Nor should dollar depreciation be the sole means of adjustment. Policy action—including measures to raise U.S. domestic savings, structural reforms to boost domestic demand growth in Europe, and increased exchange rate flexibility in Asia—is needed to reduce the risk of global imbalances triggering market turbulence or impairing global growth.¹

Financial risk taking encouraged by a prolonged period of abundant liquidity may have created unsustainable valuations and pushed volatility across a wide range of markets to artificially low levels. Past tightening cycles have revealed hidden vulnerabilities as the incentive to reach for yield was withdrawn. The locus of such vulnerabilities has typically become fully apparent only after the fact. In some past cycles, emerging markets have experienced turbulence in the wake of tightening monetary conditions. In this cycle, the search for yield has contributed to the compression of inflation and credit risk premiums and encouraged the rapid growth of structured products, including credit derivatives. The combination of compressed risk premiums and the rapid growth of instruments that lack transparency and afford the potential for taking leveraged positions in the credit markets is a potential source of vulnerability that merits attention.

Emerging market economies have enjoyed an exceptionally favorable economic and financing environment throughout 2004 and in early 2005. Solid global growth has boosted export demand and commodity prices. Interest rates and credit spreads have remained low. With liquidity abundant, investor appetite for new issues from emerging market borrowers has been quite healthy, permitting a high level of issuance at low cost. However, as in the credit markets of mature economies, the

factors contributing to low interest rates and low spreads may have peaked, and less easy financing conditions are to be expected. Underlying interest rates are set to rise, and credit spreads are more likely to widen than narrow.

It therefore remains essential for emerging market borrowers to continue to use the favorable external environment to improve their resilience. To ensure continued investor confidence, these borrowers must persevere with measures designed to remove structural impediments to noninflationary growth and strengthen public finances. From the point of view of financial markets, a fundamental source of vulnerability would be eased by reducing the level, and improving the structure, of public debt. In this regard, actions to lengthen the average maturity of debt and reduce the share of public debt linked to short-term interest rates or foreign currencies are particularly important. Fortunately, a number of countries have taken steps to improve their debt structures and to deepen local capital markets to facilitate the issuance of fixed-coupon, long-term bonds. In the case of external financial markets, some countries have appropriately used the favorable environment to improve the maturity profile of their debt through liability management. Moreover, there has been further, though still modest, progress in issuing bonds denominated in local currencies in international capital markets.

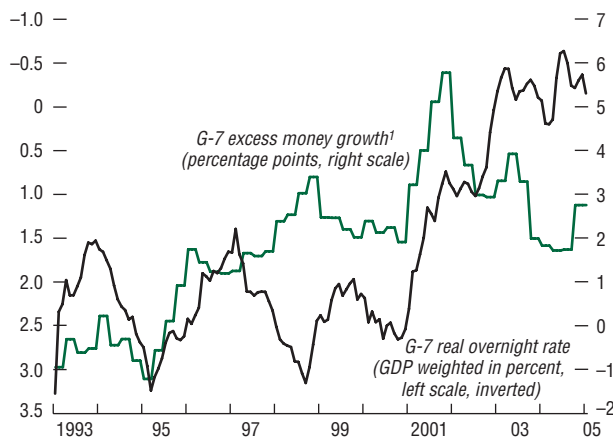
Developments and Risks in Mature Financial Markets

Impact of Monetary Tightening Offset by Market Movements

Abundant global liquidity has been a key influence on financial market developments (Figure 2.1 and Box 2.1). Low short-term

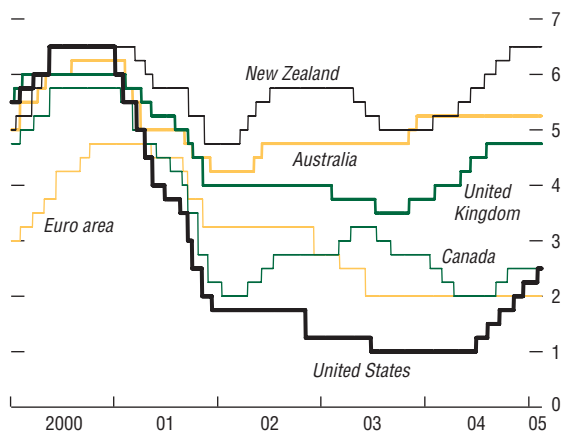
¹The cooperative international effort needed to achieve an orderly reduction of global imbalances is considered in the April 2005 issue of the IMF's *World Economic Outlook*.

Figure 2.1. Global Real Interest Rates and Excess Liquidity



Sources: Organization for Economic Cooperation and Development; and IMF staff estimates.
¹Excess G-7 money growth is defined as the difference between broad money growth and estimates of money demand in each of the countries of the G-7, weighted by their respective GDPs.

Figure 2.2. Policy Rates
(In percent)



Source: Bloomberg L.P.

interest rates, especially in the United States, have contributed to a quest for yield that has kept longer-term yields and credit spreads low.

Starting from the exceptionally low level of 1 percent, which was adopted to forestall the threat of deflation, the U.S. monetary authorities have increased the federal funds rate on six occasions from mid-June 2004 through February 2005 (Figure 2.2). Over the same period, policy rates have remained constant in Australia (where a tightening cycle was initiated earlier), and the euro area and Japan (which have yet to raise rates), but have risen in Canada, New Zealand, and the United Kingdom.² The process of returning the federal funds rate to more normal levels is expected to continue through this year. Consensus expectations for the federal funds rate now center on 3–4 percent by end-2005.

In an unusual development, longer-term U.S. government bond yields have fallen as short-term interest rates were raised, resulting in a marked flattening of the U.S. yield curve. Market developments since the first U.S. rate increase in June—the decline of longer-term U.S. treasury yields, corporate credit spreads, mortgage rates, and the dollar—have mitigated the impact of rate increases (Figure 2.3). Consequently, financial conditions have remained accommodative (see Box 2.1).

In early 2005, the federal funds rate remained below headline consumer price inflation and was roughly in line with core consumer price inflation. Interest rates in the United States have remained below consumer price inflation for longer than might have been expected based on experience with past

²After this publication's data cut-off date of February 16, 2005, the Reserve Bank of Australia raised its benchmark overnight cash rate by 25 basis points to 5.5 percent on March 2. In addition, the Reserve Bank of New Zealand raised its benchmark official cash rate another 25 basis points to 6.75 percent on March 10, and the U.S. Federal Reserve raised the fed funds rate an additional 25 basis points on March 22 to 2.75 percent.

tightening cycles. Real interest rates are stimulative in the United States, and only slightly less so in the euro zone.

With key short-term interest rates near or below the rate of inflation, the real yield on inflation-indexed bonds in the United States and other mature markets has remained low, notwithstanding the rebound in global economic activity and strong U.S. productivity growth (Figure 2.4). Japan is a special case where the authorities have driven nominal interest rates to zero and have stressed that they intend to maintain that rate until core price inflation and inflation expectations become positive again. For now, given the persistence of deflation, Japanese short-term interest rates are slightly positive in real terms.

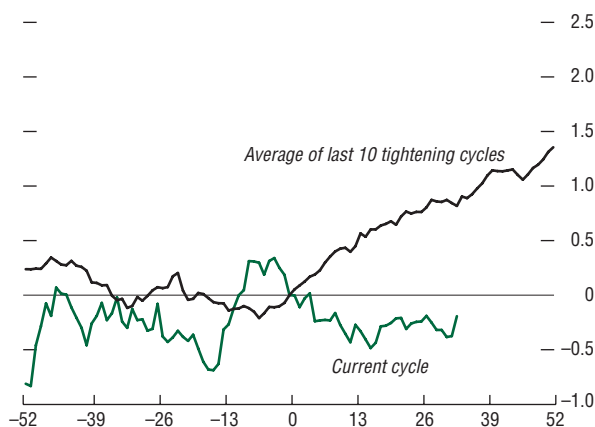
Longer-term U.S. treasury yields appear low given the pace of nominal economic growth (Figure 2.5). Several factors are contributing to the low level of yields in the United States and elsewhere.³ A sudden shift in one or more of these factors could result in higher government bond yields and a reassessment of valuations in other markets.

First, the credibility and transparency of the U.S. Federal Reserve are key anchors to longer-term yields. In the view of the market, the greater the credibility of monetary policy, the less responsive bond markets need to be. The inflation risk premium has thus fallen to low levels. As a result, longer-term interest rates did not follow policy rates higher, but actually fell as the tightening cycle started.

Second, macroeconomic developments—chiefly limited inflationary pressure and moderating but still solid global economic growth—have reinforced the market view that inflation poses little threat. Inflation expectations based on survey data and on the spread between conventional government bonds and

Figure 2.3. U.S. Tightening Cycles: Movement in 10-Year Treasury Yields

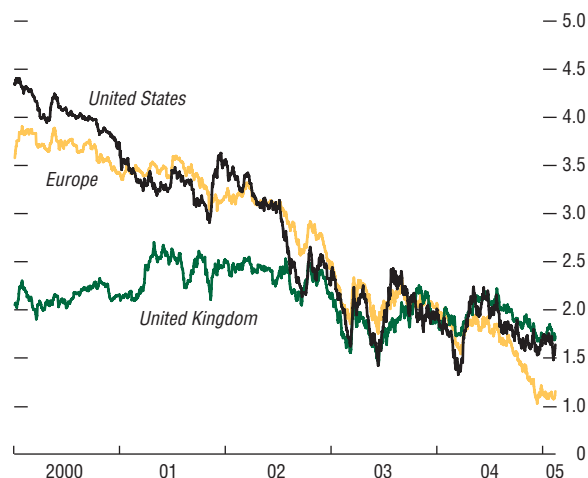
(In weeks before and after first Fed rate increase, percentage point change)



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

Figure 2.4. Real Yields on Inflation-Indexed Bonds

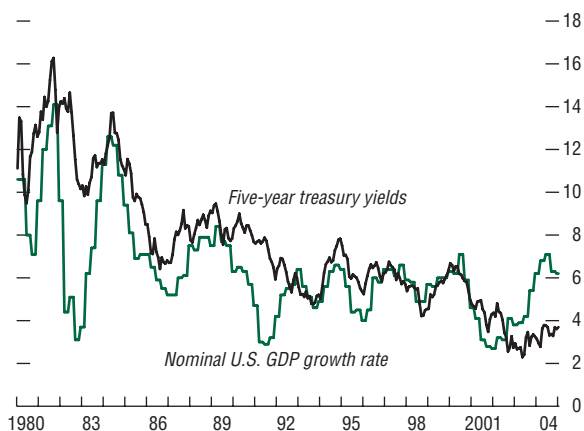
(In percent)



Source: Bloomberg L.P.

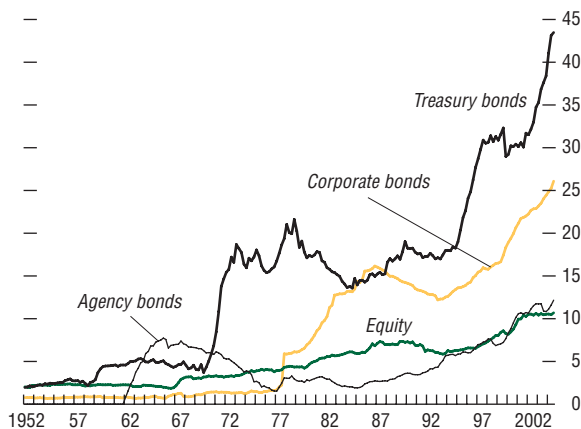
³The April 2005 issue of the IMF's *World Economic Outlook* provides further perspective on this issue. See, in particular, Box 1.2: "Why Are U.S. Long-Term Interest Rates So Low?"

Figure 2.5. U.S. Economic Growth and Treasury Yields
(In percent)



Source: Bloomberg L.P.

Figure 2.6. Foreign Ownership of U.S. Securities
(In percent of total outstanding)



Sources: U.S. Board of Governors of the Federal Reserve System, *Flow of Funds Accounts of the United States*; and IMF staff estimates.

their inflation-indexed counterparts have remained subdued. The persistent though declining output gap, continued strong productivity growth, and competitive pressure have helped dampen inflation expectations.

Third, there remains some market uncertainty about the prospects for growth. Financial markets interpreted last year's surge in energy and commodity prices as a tax on growth rather than an inflationary impulse. In addition, some market analysts consider that there may be structural issues—the low rate of domestic savings and high external current account deficit—that may pose a future drag on growth.

Fourth, foreign flows—including, in particular, flows from Asian central banks—into U.S. government and other bonds have been substantial. These flows have contributed to keeping yields and credit spreads low. Foreign purchases of U.S. government bonds in 2004 were roughly equivalent to total net new issuance of U.S. treasury securities. Foreign holdings of the outstanding stock of U.S. fixed income assets have risen substantially (Figure 2.6).

Fifth, substantial foreign demand for U.S. fixed-income assets has coincided with limited supply from the corporate sector, because high-grade issuance has remained relatively low. As earnings recovered in the United States and elsewhere, corporations remained cautious (see below) and continued to contain costs and limit capital expenditure. As a result, the U.S. corporate sector has been a net supplier of funds to the economy, helping to keep interest rates and credit spreads low, despite the large U.S. fiscal deficit and low household savings rate.

Finally, as has been explained in previous issues of the *Global Financial Stability Report*, pension fund sponsors in Europe and the United States are adjusting their asset allocation policies to reduce a perceived mismatch between their assets and liabilities (Box 2.2, see p. 38). These institutional investors are generally seeking longer-term fixed-income

Box 2.1. Gauging Global Liquidity Conditions

Various measures of liquidity suggest that despite the tightening of policy rates in the United States and other major countries, overall liquidity conditions—based on both quantity and price measures—remain highly accommodative, though differences arise across regions.

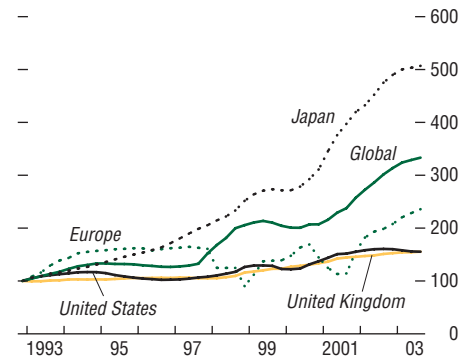
Cost of Central Bank Liquidity: Policy Rates

The central banks of most industrialized countries directly set the cost of borrowing and lending of central bank funds traded in the interbank market—known as the policy rate—and thereby indirectly influence other financial rates in the economy. This cost of central bank liquidity is usually looked at relative to inflation to give an indication of whether liquidity conditions are accommodative or restrictive. Weighting the real policy rates of G-7 countries by their respective GDPs (see first figure) shows that despite increases in nominal policy rates, central bank liquidity (with the exception of the United Kingdom) has remained highly accommodative with a cost below zero.

Supply of Central Bank Liquidity: Base Money

Base money—currency and deposits held at the central bank by financial institutions forming the payments system—is the most liquid form of

Global Central Bank Liquidity Index (1993 = 100)



Sources: IMF, *International Financial Statistics*; EconData Pty. Ltd.; Bloomberg L.P.; and IMF staff estimates.

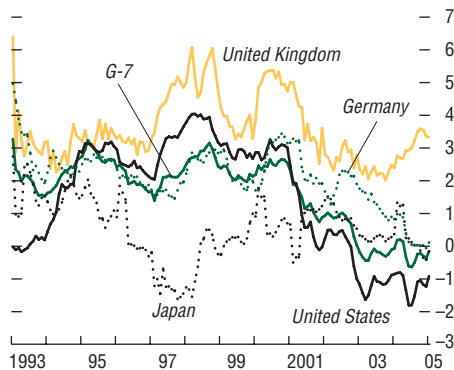
purchasing power and means of settlement of economic transactions. The supply of the base money in relation to economic activity is therefore another measure of monetary accommodation. In the major economic areas, annual growth in base money has exceeded nominal GDP, sometimes substantially since 2001, highlighted by an index of cumulative central bank liquidity, suggesting accommodative liquidity conditions.¹ Japan's figures reflect quantities of central bank money aimed at breaking entrenched deflation (see second figure). In Europe, growth in base money has exceeded the pace of nominal economic activity during the past two years. Broadly, rising central bank liquidity is also consistent with low real policy rates.

Household and Corporate Liquidity: Broader Monetary Aggregates

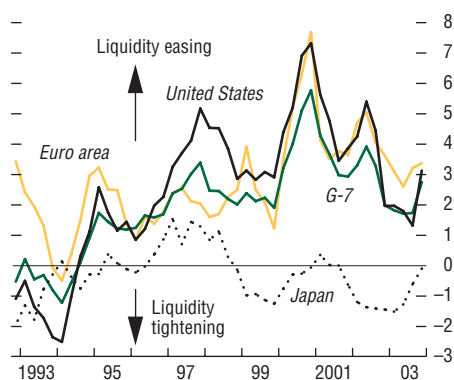
Banks provide liquidity to the economy as their liabilities—held by the corporate and household sector in the form of deposits—are money-like. Monetary aggregates—deposit liabilities of banks plus currency liabilities of the

¹Index of central bank liquidity is the cumulative sum of the annual percent growth of base money less the annual percent growth in nominal GDP.

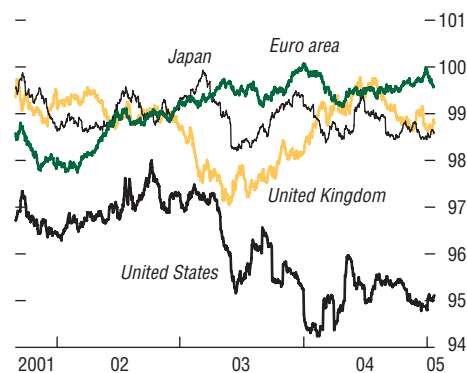
G-7 Selected Real Policy Rates (In percent)



Sources: Organization for Economic Cooperation and Development; and IMF staff estimates.

Box 2.1 (concluded)**Excess Household and Corporate Liquidity**
(In percentage points)

Sources: Organization for Economic Cooperation and Development; and IMF staff estimates.

Goldman Sachs Financial Conditions Index

Source: Goldman Sachs.

central bank—are therefore a measure of an economy's liquidity. One approach to gauging household and corporate liquidity measures money demand in relation to economic activity. This measure suggests that household and corporate liquidity in the G-7, while declining from its peak at the end of 2001, remains high and has shown signs of rising in the latter half of 2004.² In Japan, household and corporate liquidity has not expanded along with the increase in central bank liquidity (see third figure).

Composite Measures of Liquidity: Financial Conditions Index

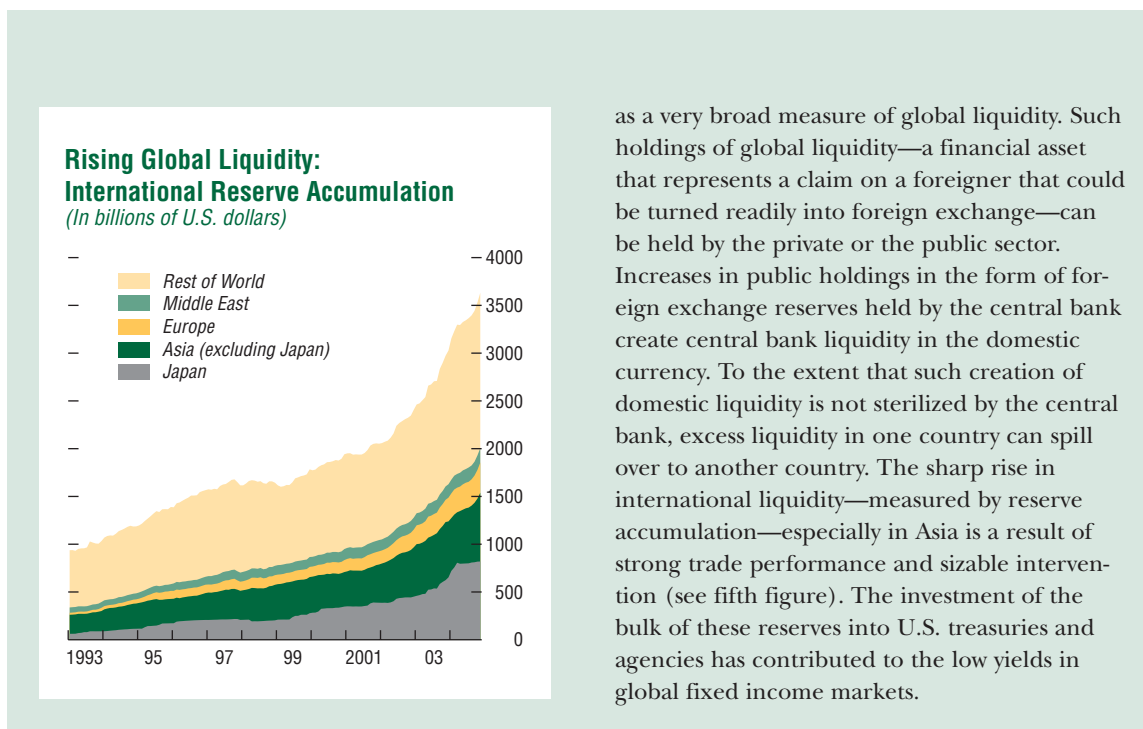
The channels through which the setting of monetary policy is transmitted to financial markets and to the real economy are complex and no single monetary or interest rate measure has shown a reliable link. For this reason, some central banks have sought to combine the

estimated influences of exchange rates and interest rates on the economy into a single measure to provide a gauge of monetary conditions. Some researchers have found that including capital market variables—such as stock market valuations—more fully captures the effect of financial wealth and liquidity on the economy. One such indicator is the Goldman Sachs Financial Conditions Index, which is a weighted combination of the real three-month interbank lending rate, the interest rate on corporate bonds, the market capitalization of equities in relation to GDP, and the real effective exchange rate. Indicators of financial conditions suggest that despite the increase in the fed funds rate, overall financial conditions in the United States have loosened as equity markets have risen, the exchange rate has depreciated, and credit spreads have narrowed (see fourth figure). In Europe, by contrast, financial conditions have actually tightened, reflecting in part the appreciation of the euro.

Global Liquidity: International Reserves

Globalization of finance and trade has brought with it a rise in cross-border ownership of real and financial assets. Cross-border claims of tradable financial assets might therefore serve

²Excess liquidity is defined by the difference between broad money growth and estimates for money demand. Estimates for money demand are derived from trend velocity growth using average velocity growth during 1980–2002 in the respective economies, except for the euro area, where it is based on the mid-value of the range for velocity growth as derived by the European Central Bank.



as a very broad measure of global liquidity. Such holdings of global liquidity—a financial asset that represents a claim on a foreigner that could be turned readily into foreign exchange—can be held by the private or the public sector. Increases in public holdings in the form of foreign exchange reserves held by the central bank create central bank liquidity in the domestic currency. To the extent that such creation of domestic liquidity is not sterilized by the central bank, excess liquidity in one country can spill over to another country. The sharp rise in international liquidity—measured by reserve accumulation—especially in Asia is a result of strong trade performance and sizable intervention (see fifth figure). The investment of the bulk of these reserves into U.S. treasuries and agencies has contributed to the low yields in global fixed income markets.

investments that better match their liabilities. In some cases, especially in Europe, regulatory changes have encouraged these investors to adjust their asset allocation targets, by increasing their holdings of longer duration bonds. As a consequence, institutional investors have been eager to seek assets at the longer end of the maturity spectrum, notwithstanding the low yields they offer in many cases.

Solid Corporate Earnings and Balance Sheets Support Corporate Bond Markets

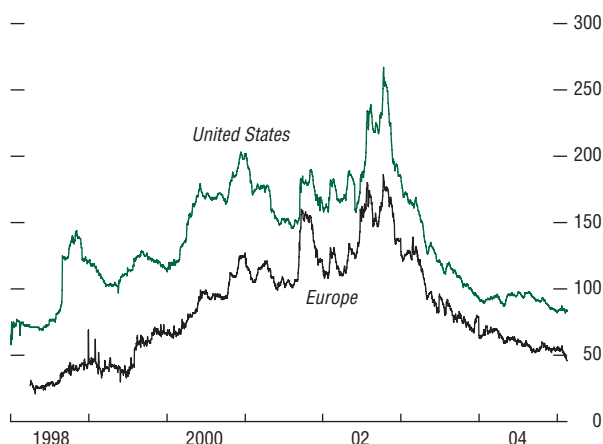
Corporations in the United States, the euro area, and Japan have enjoyed an increase in earnings and cash balances. These factors have supported the compression of credit spreads in corporate bond markets (Figures 2.7 and 2.8). Low interest rates on less risky assets and the low level of market volatility have encouraged investors to increase their exposure to credit risk, contributing to falling spreads. In addition, life insurance companies have continued to invest in corporate bonds

as a means of better aligning their assets and liabilities (Box 2.3, see p. 40). With the exception of U.S. automobile manufacturers, which face potential further credit rating downgrades, the dispersion of spreads in credit markets has been compressed, raising the possibility of reduced investor discrimination.

The narrowing of spreads has been helped by the improvement in the creditworthiness of borrowers and the shortage of high-grade corporate paper supply. With cash flows strong, debt-service ratios low, and companies paying down short-term debt, default rates have fallen to low levels (Figure 2.9). However, rating agencies have noted that default rates are low given the stage in the economic cycle and in absolute terms. Rating agencies have warned that easy money has allowed weaker, higher-yielding credits to obtain financing, and that this may contribute to a higher incidence of default and restructurings in the future.

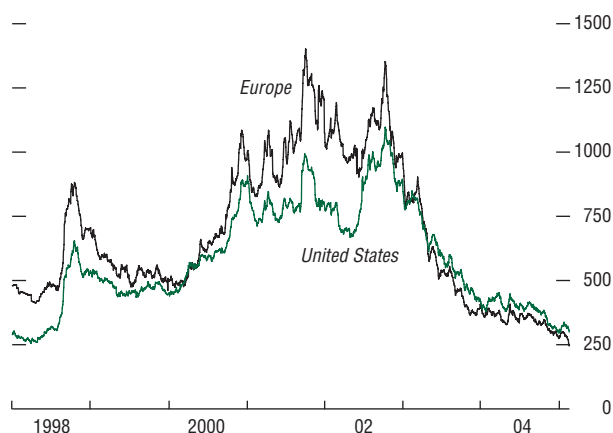
The rapid growth of structured products, including credit derivatives, has been a cen-

Figure 2.7. High-Grade Corporate Bond Spreads
(In basis points)



Source: Merrill Lynch.

Figure 2.8. High-Yield Corporate Bond Spreads
(In basis points)



Source: Merrill Lynch.

tral element in the quest for yield (Figure 2.10).⁴ The growth of credit derivatives has many positive elements (Box 2.4, see p. 42). These instruments provide a liquid and convenient vehicle for trading and hedging credit risk and provide information on market views of creditworthiness. Such instruments, however, also provide a means of taking leveraged credit exposure. Moreover, their off-balance-sheet nature and complexity reduce transparency, and potentially mask the risks to which investors and counterparties are exposed. Thus, the rapid growth of the market raises questions as to whether there may be risks that are not well understood. It is difficult to determine whether the recent expansion of credit derivatives is motivated by the liquidity or leverage that they offer. But it is likely that the rapid expansion of credit derivative instruments has increased the possibility of leveraged losses for some investors, should the current benign credit environment deteriorate.

The near-term outlook for the U.S. corporate bond market remains favorable. The risk of a credit event in the U.S. corporate bond market spreading into other mature and emerging credit markets appears low. However, the factors that have underpinned a fundamental improvement in credit quality have likely peaked. Corporate earnings growth is expected to slow, and default rates are expected to rise modestly from current low levels, in part because of the recent spate of high-yield issuance. The recent pickup in mergers and acquisitions activity could put ratings under greater pressure, possibly leading to a rise in default rates as companies increase borrowing to make acquisitions. Moreover, the gradual withdrawal of monetary stimulus is expected to contribute to more difficult financing conditions for firms.

⁴At end-June 2004, the total notional principal outstanding of over-the-counter derivatives contracts totaled US\$220 trillion, of which credit derivatives represented US\$4.5 trillion.

Solid Earnings and Balance Sheets Support Major Equity Market Valuations

Corporate earnings in major markets are beginning to slow, following recent strong gains. Fundamental reasons for slower earnings growth include a maturing cycle and the difficulty of obtaining additional cost reductions after years of aggressive cuts. For S&P reporting companies, analysts forecast earnings gains to slow to 10 percent in 2005, compared with 25 percent gains in 2004. For members of the FT Europe index, gains are expected to slow to a 12 percent rate for the year overall, and for the Japanese Topix index, earnings gains are expected to slow as well, but to a still-high 22 percent rate. Although prospective earnings gains are less buoyant than earlier, the valuation of current earnings in the major markets remains broadly conservative (Figure 2.11).

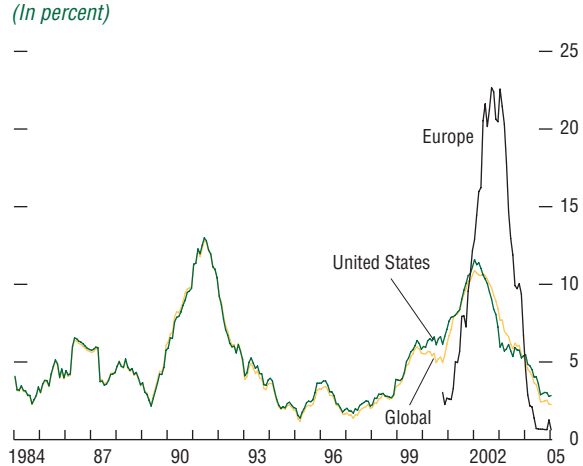
Slower earnings growth prospects may encourage managers and owners to increase company leverage. After several years of efforts to reduce gearing, managers may use solid company balance sheets and easy financial market conditions to borrow for capital expenditure or acquisitions in a bid to boost earnings. Alternatively, high cash holdings could be used for equity buybacks or increased dividend payments.

Both the opportunities for corporate releveraging and current stock market valuations depend on continued low real rates of interest. At current low risk-free rates of interest in the key mature markets, earnings appear fairly valued to slightly undervalued (Figures 2.12 and 2.13). A normalization of interest rates would make valuations appear less attractive.

Financial Market Volatility Remains Subdued

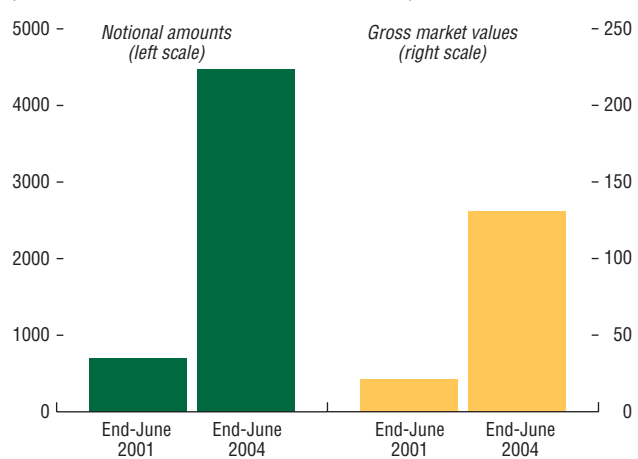
Financial market volatility has fallen to low levels (Figure 2.14). As in the case of low yields, prolonged periods of low market volatility can encourage investors to seek higher returns through leverage or by taking

Figure 2.9. Speculative Grade Corporate Default Rates
(In percent)



Source: Moody's.

Figure 2.10. Credit Derivatives Market
(Amounts outstanding in billions of U.S. dollars)



Source: Bank for International Settlements.

Figure 2.11. Price-Earnings Ratios



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

positions in riskier assets. Both structural and cyclical factors explain some of this trend.

The growth of the credit derivatives market has made it much easier for banks to shed the credit risks they no longer want, and for risks to be subdivided and allocated to those willing to bear them. With many assets traded electronically, and other markets becoming more liquid, mispricings, at least as revealed by the standard pricing models, are swiftly arbitrated away. In addition, the low interest rate environment may have encouraged the sale of options as a means of boosting income. Hedge funds and others providing yield-enhanced instruments to individual and institutional investors appear to have used embedded options to help increase yields, at least initially. The increased use of these instruments, which in effect increase the supply of options, could also be contributing to reduced option premiums and implied volatility.

Cyclical factors may also have temporarily suppressed volatility to low levels. The current pace of near-trend global growth and firmly entrenched expectations for continued solid noninflationary growth could be contributing to low financial market volatility. In the mid-1990s, for example, implied volatilities, especially for equities, were low and global growth was near trend.

In addition, stronger corporate balance sheets and more robust earnings have contributed to declining volatility (Figures 2.15 and 2.16). Bond and equity volatility were elevated before the turn of the century by the precarious state of corporate balance sheets. Many companies have since repaired those balance sheets and are, therefore, less likely to slip toward bankruptcy. Lower equity and bond volatilities probably reflect these improvements.

However, even as implied volatility has fallen to historically very low levels, it has lagged the even steeper decline in actual volatilities (Figure 2.17). The gap between implied and actual volatilities increased dur-

ing 2004. This suggests that many market participants do not fully accept that the factors driving down volatility are permanent. They are therefore tending to price options with some degree of risk margin in case actual volatility were to spike back up to less unusually low levels. The low level of implied volatility across a range of assets is not necessarily a cause for comfort: actual and implied volatilities have in the past increased unexpectedly from low levels, and at least part of the decline in implied volatilities appears to be linked to the quest for yield.

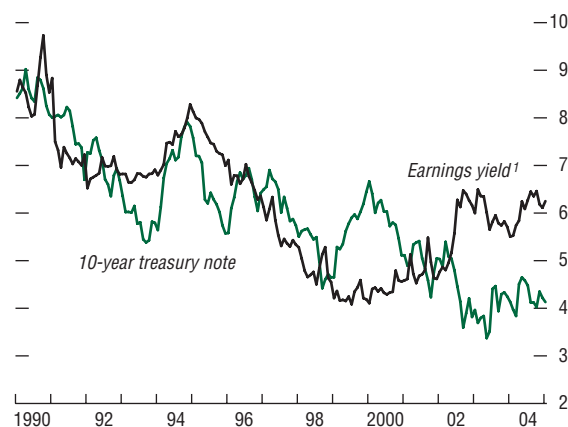
Markets Adjust to Persistent Global Imbalances

Despite the broadening of the global economic recovery, global imbalances among major economies have continued to increase (Figure 2.18). Broadly speaking, exchange rates and financial asset markets have, so far, smoothly intermediated cross-border flows and the divergent growth of net external assets and liabilities, while contributing to the process of shifting relative prices toward promoting a rebalancing of external conditions. One form of partial adjustment has been the depreciation of the U.S. dollar against its trading partners. Over time, this should support external adjustment through changes in relative prices of tradable and nontradable goods, thereby creating incentives for a rebalancing of global demand, leading to a narrowing of the U.S. trade deficit.⁵

Since its peak in early 2002, the dollar has depreciated substantially against the euro, the sterling, and yen. However, in real effective terms, dollar depreciation has been more modest as the extent of depreciation has been limited by the relative stability of the U.S. currency vis-à-vis the currencies of its main emerging market trading partners.

In the last quarter of 2004, emerging Asian economies experienced strong inflows of capi-

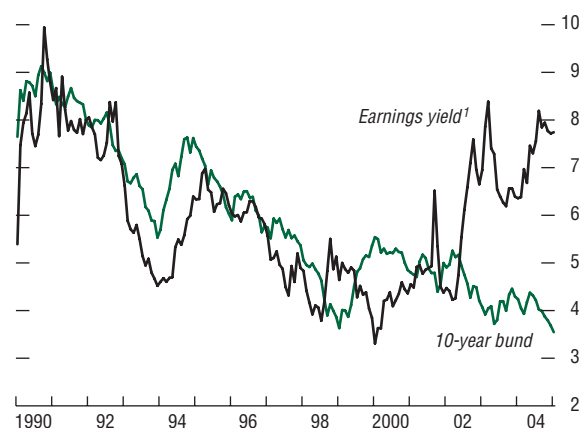
Figure 2.12. U.S. Equity and Benchmark Government Yields
(In percent)



Source: Bloomberg L.P.

¹Earnings yield is the inverse of the price-earnings ratio.

Figure 2.13. German Equity and Benchmark Government Yields
(In percent)

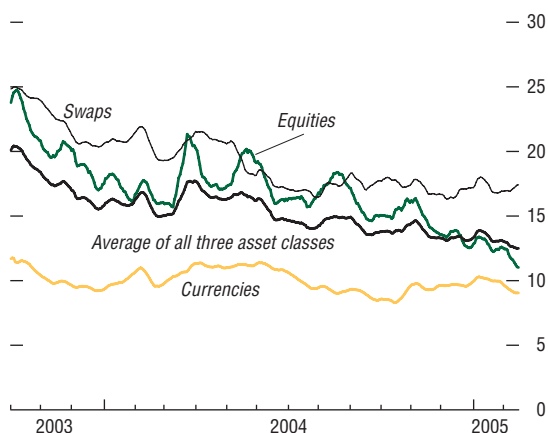


Source: Bloomberg L.P.

¹Earnings yield is the inverse of the price-earnings ratio.

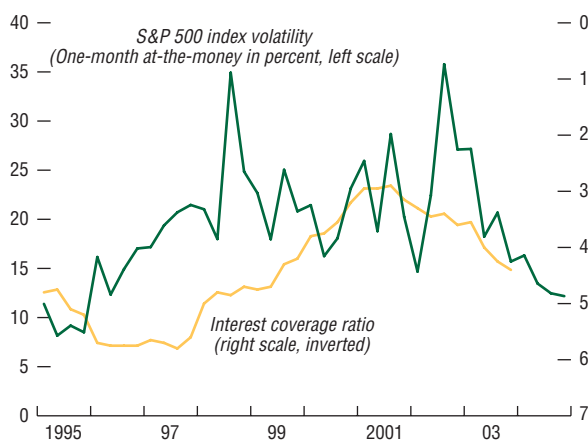
⁵See the IMF's *World Economic Outlook*, 2005.

Figure 2.14. Implied Volatilities
(In percent)



Source: Bloomberg L.P.

Figure 2.15. Equity Volatility



Sources: Bloomberg L.P.; and Credit Suisse First Boston.

tal and pressure for their currencies to appreciate. Reserve accumulation in Asia has soared (Figure 2.19). Currencies in Asia appreciated modestly in those countries with a degree of currency flexibility and markets expect a further appreciation during 2005 (Figure 2.20).

In this connection, a revaluation of the Chinese renminbi is seen as the key to a broadening of the adjustment process. A revaluation of the renminbi would probably create headroom for other Asian currencies to strengthen, and pressures on them to do so would intensify. As yet, however, there are no indications that a removal of the peg is imminent. At the end of February 2005, the (fairly illiquid) nondeliverable forwards market signaled expectations of appreciation over the next 12 months of only about 5 percent, and this varied considerably over 2004 (Figure 2.21).

Interest rate differentials are moving in the direction of supporting inflows of capital to the United States. Longer-term U.S. treasury yields have risen relative to yields on comparable bonds in the euro area and Japan (Figure 2.22). This move in relative interest rates should encourage continued foreign flows into U.S. fixed-income markets, while at the same time inducing U.S. investors to curb purchases of foreign government bonds.

Currency market volatility has remained relatively modest, suggesting that markets expect further currency adjustments to remain moderate (Figure 2.23). The pricing of options implied that markets believe the most likely outcome, by far, is a gradual continuation of the current trends. Disorderly moves are given a very low probability (i.e., the probability distributions are not as “fat-tailed” as they have been at times in the past).

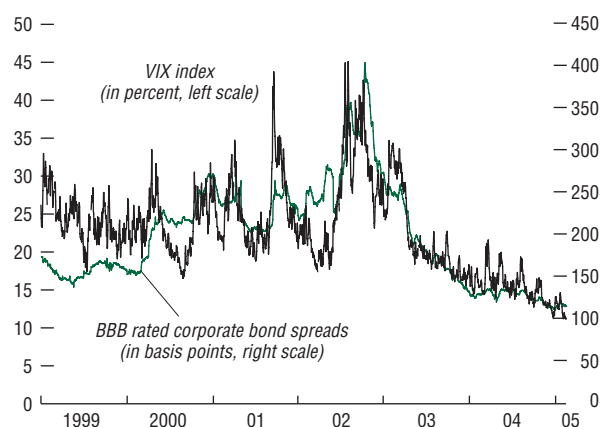
The financial system and global financial flows are functioning in a manner that gives policymakers time to implement credibly the policies that will be necessary to correct macroeconomic imbalances. Despite the current market calm, the relatively low proba-

bility of a sharp dollar decline, and the continued apparent attraction of U.S. capital markets to foreigners, the size, source, and destination of the flows financing the U.S. current account deficit are areas of market concern. At some point, markets may become impatient with the pace of change, and asset prices will start to play a more forceful role in bringing about the needed adjustments. In that event, U.S. government bond yields and credit spreads on corporate bonds would likely increase sharply. Equity valuations that appear reasonable in the current low interest rate environment will appear less attractive as the cost of capital to corporations rises. Higher yields and spreads in the U.S. fixed-income markets would also likely spill over to emerging market bonds, contributing to a deterioration of the external financing environment for emerging markets.

It is difficult to forecast when markets might grow restive. However, the persistence of large U.S. external current account deficits, financed in part by official flows from Asia, may eventually reach a limit. One possible indication that such a limit is approaching would be if countries with rapid increases in external reserves began to experience excessive money growth and inflation. In that case, markets would begin to anticipate reduced intervention. In addition to complicating the implementation of monetary policy, reserve levels can also grow to a point at which they impose disproportionately high fiscal costs. In this case, the benefits of accumulating reserves for prudential (or other) purposes may be offset by the costs to the budget of financing a high level of reserves.⁶ Moreover, as reserve levels rise, questions about whether their accumulation represents an optimal allocation of resources are likely to increase. Markets are sensitive to these potential constraints on reserve accumulation and are likely

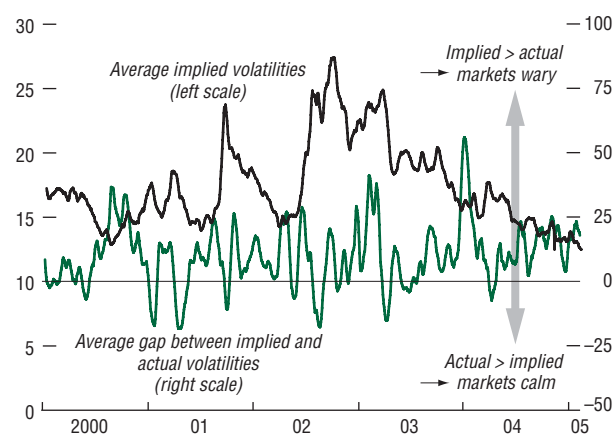
⁶Reserves are typically held in instruments that yield less than the cost of government borrowing.

Figure 2.16. Equity Volatility and Corporate Spreads



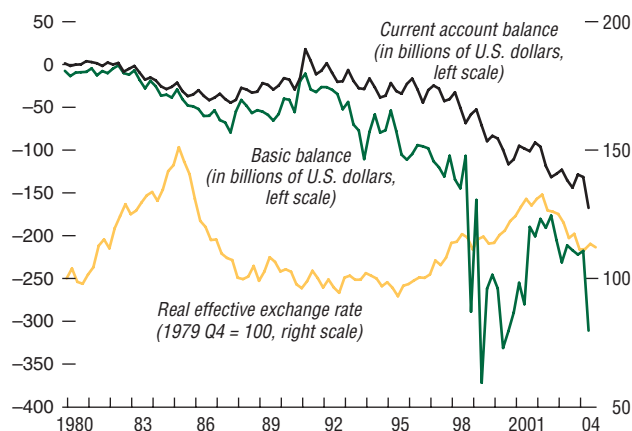
Sources: Bloomberg L.P.; and Merrill Lynch.

Figure 2.17. Implied Versus Actual Volatility
(Implied minus actual volatility, in percent of actual volatility)



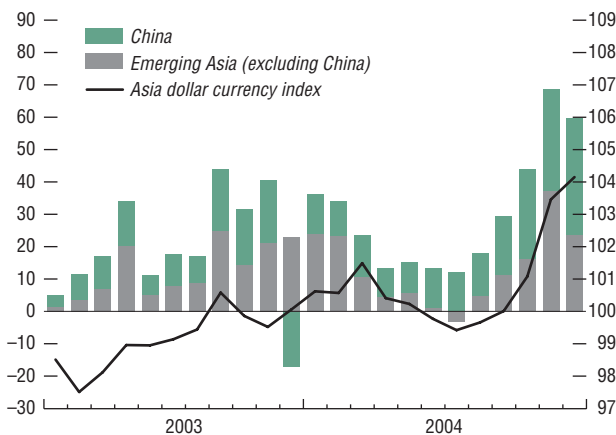
Sources: Bloomberg L.P.; and IMF staff estimates.

Figure 2.18. United States: External Balance



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

Figure 2.19. Emerging Asia Reserve Accumulation¹
(In billions of U.S. dollars)



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

¹Includes China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, and Thailand.

to react in anticipation of a change in the pace or composition of reserve accumulation. At the moment, however, these limits are not seen to be binding.

Developments and Vulnerabilities in Emerging Markets

Spreads on emerging market bonds have continued to narrow and remain near eight-year lows in early 2005. Improvements in domestic fundamentals, accommodative monetary policy and low returns in mature markets, and an appetite for risk reinforced by low financial market volatility have contributed to the compression of spreads (Figure 2.24).

The investor base for emerging markets has also expanded. Low interest rates in mature markets and the attractive risk-adjusted returns of emerging markets in recent years have attracted new investment flows. Since 2000, emerging market bonds have been one of the best performing assets, and emerging market equities have generated higher risk-adjusted returns than mature equity markets (Figure 2.25). In addition, credit rating upgrades, particularly for those countries that have garnered investment grade ratings, have widened the universe of potential investors in emerging market bonds.

Emerging Market Valuations Near Record Levels

Emerging market bond spreads have narrowed across the board, leading to reduced differentiation among riskier credits. In particular, the spread between B and double-B rated credits has narrowed considerably (Figure 2.26). The same phenomenon can be seen in the high returns for the riskiest credits and in the fact that the ongoing search for yield has attracted new and possibly riskier borrowers into the asset class, notably on the corporate side (Figure 2.27).

Emerging market debt valuations now appear stretched relative to their historical

relationship with fundamentals and liquidity. Spreads are more than 100 basis points narrower than forecast on the basis of a staff model that incorporates ratings and a measure of liquidity as determinants of spreads (Figure 2.28).⁷ Nonetheless, these valuations reflect common trends across all credit markets. As a result, spreads against comparably rated U.S. corporate bonds remain attractive (Figure 2.29).

Improved Credit Quality Supports Valuations and Helps Broaden Investor Base

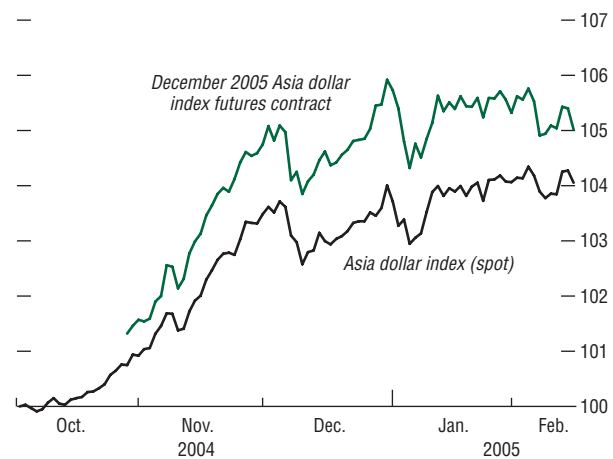
The average credit quality of J.P. Morgan Chase's EMBI Global (EMBIG) has reached a new high, more than recouping the decline in average quality after Korea graduated from the index at end-April 2004. Upgrades have outnumbered downgrades by an increasing margin since 2003. As a result, an estimated 49 percent of the combined dollar- and euro-denominated EMBIG indices (by market capitalization) are now investment grade. Moreover, a well-known private sector model suggests several sovereigns are candidates for upgrades for 2005, while none is a strong candidate for a downgrade (Credit Suisse First Boston, 2005).

A broadening investor base has also been a critical element of the emerging market rally, and it has helped buoy demand for new issues in the primary market.

- Pension funds and insurance companies have allocated an increasing proportion of their assets to emerging markets. The inclusion of some emerging market borrowers in major global bond indices has contributed to this trend, as have credit rating upgrades to investment grade for a number of countries. Strategic allocations from these investors reportedly remained strong throughout 2004, reaching an estimated \$12 billion,

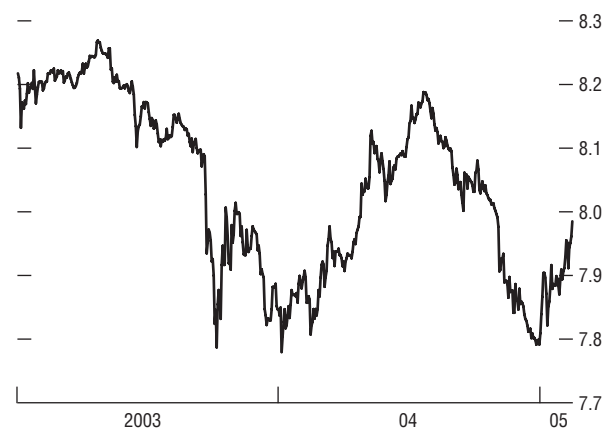
⁷See the *Global Financial Stability Report*, April 2004, Appendix I.

Figure 2.20. Asia (Excluding Japan) Currency Index



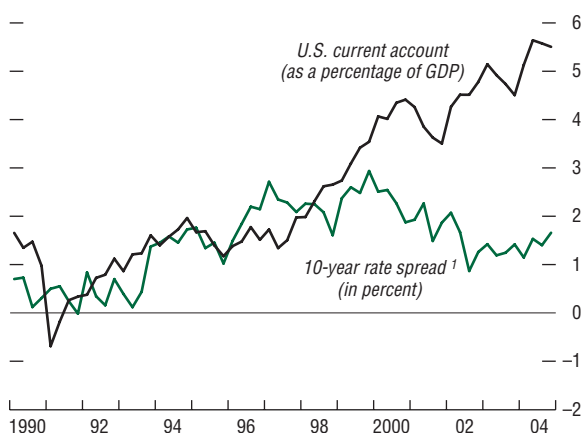
Sources: Bloomberg L.P.; and J.P. Morgan Chase & Co.

Figure 2.21. Chinese Yuan 12-Month Forward Rates
(In yuan per U.S. dollar)



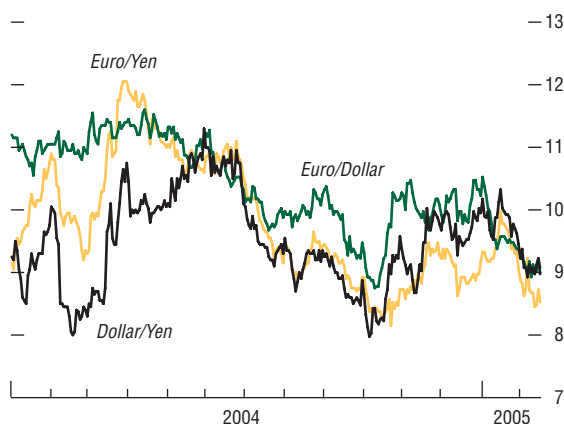
Source: Bloomberg L.P.

Figure 2.22. United States: 10-Year Rate Spread and Current Account Balance



Source: Bloomberg L.P.
¹U.S. treasury yields minus average of bund and JGB yields.

Figure 2.23. Currency Volatilities
(Three-month forwards, in percent)



Source: Bloomberg L.P.

about one-quarter of sovereign emerging bond issuance that year. Anecdotal evidence suggests that the pipeline for new strategic investments planned for 2005 is equally substantial. Decisions to make allocations to emerging markets appear to be predicated on an understanding that such markets have performed well over the long run in spite of periodic crises. This suggests that, barring a very sharp market deterioration, these investors are likely to stay invested in emerging markets through a downturn.

- Evidence concerning investors following more short-term trading strategies remains difficult to come by.⁸ Nonetheless, it is clear that the number of such investors has increased considerably in the last two years. Many investment banks have reopened or enlarged proprietary emerging market trading desks. Also, the number of hedge funds has proliferated, and many are reported to be on the forefront of the drive to invest in local markets.
- Dedicated emerging market mutual funds continue to receive steady, if modest, net inflows, though these funds (at least in the United States) have not yet recouped all of the heavy net outflows experienced in the spring of 2004.

Search for Yield Extends to Local Emerging Markets

Over the past year, foreign investment flows into local currency instruments have increased substantially. Flows have been concentrated in the most liquid local currency markets,

⁸Such investors, including hedge funds and investment banks' proprietary desks, are generally characterized by a total return objective (i.e., as opposed to returns relative to a benchmark) and the use of significant leverage. They are also frequently able to take advantage of a wide array of investment strategies, including the ability to short markets, and employ leverage, and can thus take on greater risk. Their use of leverage suggests that they are more vulnerable to forced closures of underperforming positions.

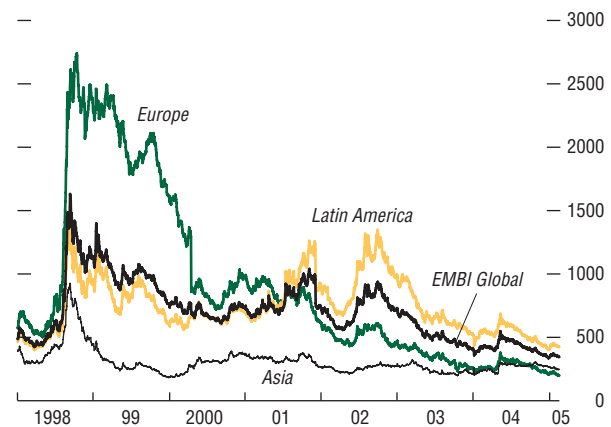
including government bonds in Brazil, Hungary, Mexico, Poland, and Turkey. The proportion of government bonds held by foreign investors in these markets doubled in aggregate over the past year, and ranges from a still-small 4 percent in Brazil to 20 percent of the market in Poland, and 30 percent in Hungary (Figure 2.30).

The demand for local currency government bonds has been whetted by the decline of yields on hard-currency-denominated credit instruments, including emerging market external bonds. As valuations on other assets become increasingly stretched, investors have ventured further out on the risk spectrum in a search for relative value. In addition, some investors have been attracted by the possibility of currency gains. Reflecting these factors, recent data suggest that trading of local emerging market bonds has increased significantly (Figure 2.31).

Local currency investment has been facilitated by the development and deepening of local markets.⁹ Part of this process has involved the introduction of derivatives instruments to hedge foreign exchange risk. More recently, countries have also taken advantage of growing liquidity to extend the local yield curve, addressing the need of local and foreign investors for higher duration instruments, and the need of local corporate issuers for longer maturity benchmark bonds. Brazil and Turkey have issued fixed-rate local currency bonds at longer maturities, of up to five years, with strong interest from foreign investors. In the case of Brazil, this complements the extension of the inflation-indexed bond curve out to 40 years. Mexico also extended its yield curve significantly in 2004 by issuing a 20-year peso-denominated bond, which is estimated to be about 70 percent owned by foreign investors.

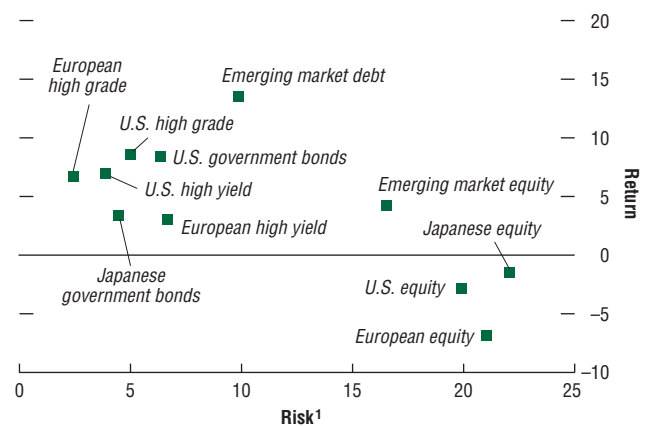
⁹See the March 2003 *Global Financial Stability Report*, Chapter IV, for a discussion of the policies needed to deepen local securities markets.

Figure 2.24. EMBIG Sovereign Spreads
(In basis points)



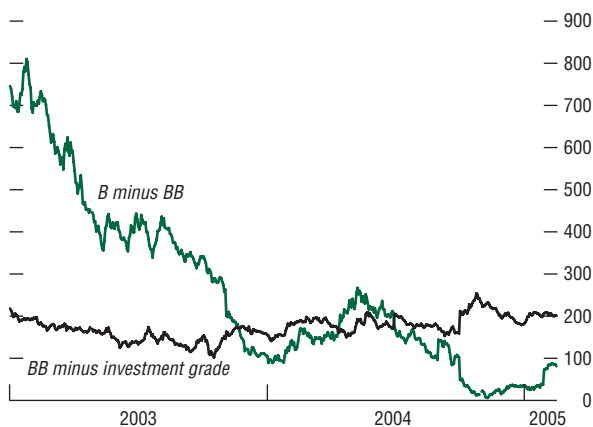
Source: J.P. Morgan Chase & Co.

Figure 2.25. Risk-Return Trade-off
(In percent)



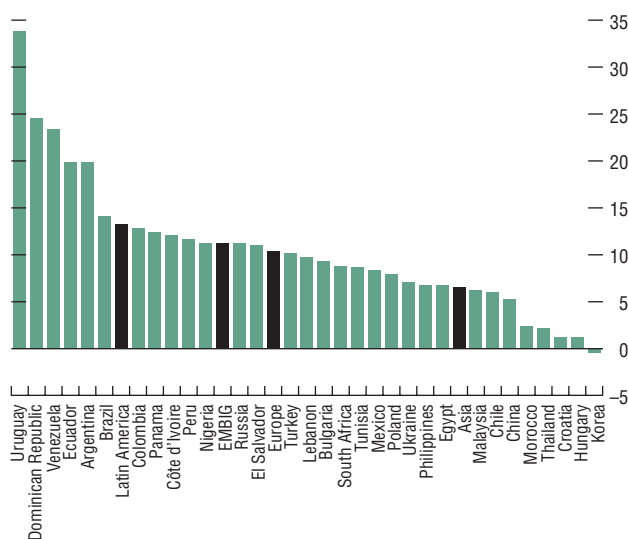
Sources: Bloomberg L.P.; Merrill Lynch; and IMF staff estimates.
¹Five-year average of annualized standard deviations of total returns.

Figure 2.26. Emerging Market Credit Bucket Spread Difference
(In basis points)



Source: J.P. Morgan & Chase Co.

Figure 2.27. EMBI Global Performance, 2004
(In percent)



Source: J.P. Morgan Chase & Co.

Due to the high correlation between external and domestic debt, moving into some local currency markets offers little additional diversification benefit. The exceptions to this are the markets of low-yielding investment grade countries such as Mexico and Poland, where the correlation between external and domestic debt is low (Figure 2.32). For higher-yielding credits such as Brazil and Turkey, the credit risk premium is high and changes in country risk affect yields on external debt, the exchange rate, and yields on domestic debt at the same time, resulting in high correlations among these assets, particularly in times of stress.¹⁰

For borrowers, attracting foreign investors into local currency markets provides an opportunity to reduce exposure to currency risk and diversify the investor base, potentially lowering interest costs and resulting in more stable access to financing. The development of local market instruments has facilitated their inclusion in global bond indices that are used by a broad range of investors as benchmarks. For example, the local currency bonds of selected investment-grade emerging market countries (Chile, the Czech Republic, Hungary, Mexico, Poland, Slovenia, and South Africa) were recently included in the Lehman Global Aggregate Index. This has made it easier for longer-term investors to hold emerging market local currency bonds.

Despite increased investor interest in local currency instruments, access to some local markets remains limited by registration requirements, taxes, and regulations that require a minimum length of time before investments can be unwound. In some cases, investors have circumvented these obstacles through the use of structured notes and credit derivatives to gain access to local currency exposure without having to hold the underlying

¹⁰For example, see the discussion on shifting interest rate expectations and their effect on emerging market local currency bond yields in the September 2004 *Global Financial Stability Report*, Chapter II.

ing securities. Although difficult to quantify, anecdotal evidence suggests that the use of such instruments for local currency exposure increased rapidly last year.

Spike in U.S. Interest Rates Could Roil Emerging Markets

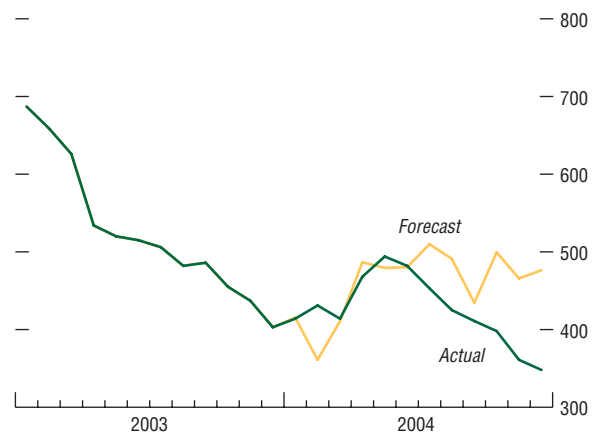
Expectations of a gradual reduction of global liquidity are helping to keep global credit spreads low. However, a spike in interest rates, which could lead to a rapid decompression of credit spreads and a less hospitable external financing environment, remains the key risk for emerging markets. The possible catalysts for a decompression of spreads include the following:

- Higher-than-anticipated inflation would cause markets to raise interest rates across the maturity spectrum and could lead to an increase in the inflation risk premium from current low levels. An increase in underlying interest rates would also cause a decompression of credit spreads. However, it is unlikely that the change in inflationary expectations would be so large as to cause a major dislocation in markets.
- There is also a low probability that heightened risk aversion arising from uncertainty over the financing of global imbalances could create turbulence in the currency markets that could spill over to the U.S. bond markets, leading to higher underlying interest rates and a decompression of spreads.
- It is also possible that the global compression of credit spreads could be reversed by adverse developments in the U.S. corporate bond market. In that event, investors could seek to reduce their exposure to credit risk more broadly.

Emerging Market Financing

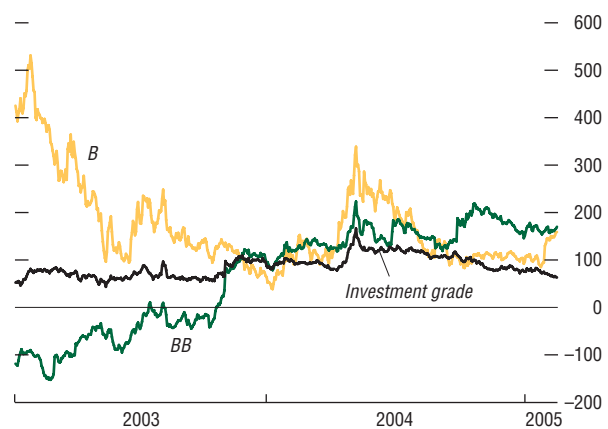
Gross issuance by emerging market countries hit a record high in 2004 (Table 2.1 and Figure 2.33). Bond issuance rose in response

Figure 2.28. Forecast and Actual EMBIG Spread
(In basis points)



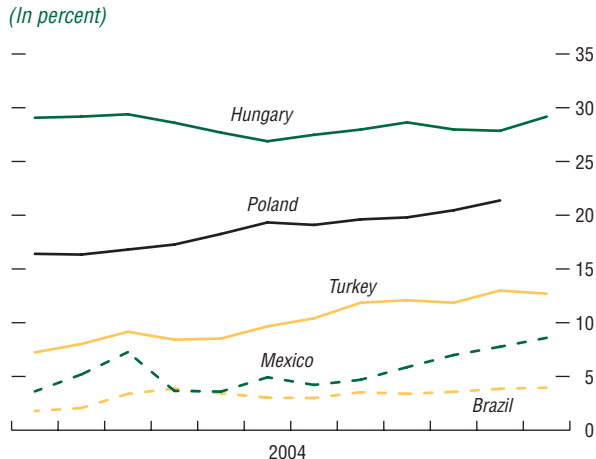
Sources: J.P. Morgan Chase & Co.; and IMF staff estimates.

Figure 2.29. Differentials Between Corporate and Emerging Market Spreads
(In basis points)



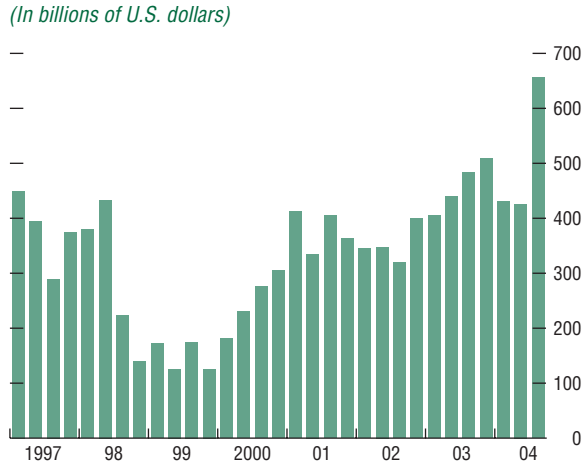
Sources: J.P. Morgan Chase & Co.; and Merrill Lynch.

Figure 2.30. Foreign Participation Rates in Local Markets
(In percent)



Sources: National central banks; and IMF staff estimates.

Figure 2.31. Trading Volumes in Local Emerging Market Instruments
(In billions of U.S. dollars)



Sources: EMTA; and IMF staff estimates.

to strong demand for emerging market assets, low global bond yields, and the tightening of spreads during 2004. Issuers brought forward issues planned for 2005 and 2006. By early February 2005, emerging market sovereigns had already completed about half of their planned external issuance for 2005. Equity issuance exceeded the previous highs recorded in 2000, especially in Asia and the EMEA region (Europe, Middle East, and Africa). The higher growth in emerging market economies, particularly in Asia, relative to mature markets and an increasing interest by investors in local currency exposure facilitated increased equity issuance. Syndicated lending remained below previous highs, but was still well above recent years.

Net issuance also rose, notwithstanding high bond amortizations, but it did not exceed the previous high of 1997 (Figure 2.34). Net issuance continued to be low in Latin America, as it has been since the withdrawal of Argentina from the market in 2001.

Bond Issuance

Bond issuance remained strong for the second half of 2004, though not as high as in the first half (Figure 2.35). The increase in issuance was dominated by Asia and EMEA credits, with Latin America remaining close to the historical trend. In the EMEA region, sovereign issuance reached record highs, while in Asia there was increased access by corporates to the market. Collective action clauses were typically included in new issues (Box 2.5, see p. 43).

The increase in private corporate issuance was notable. In the last half of 2004, the proportion of such issuance in the total reached about 50 percent, above the quarterly average in previous years (Figure 2.36). The increased demand for emerging market corporate bonds represents a move out along the risk spectrum in the search for yield. This could represent an additional risk to the market to the extent that investors are less familiar with,

and less able to evaluate, emerging market corporates' risk.

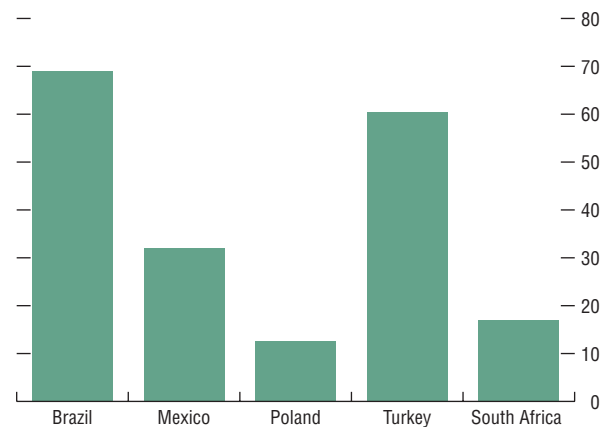
The changing currency composition of bond issuance was also a significant development. In 2004, emerging market issuance in euros reached about 25 percent of total issuance, almost double the level of euro issuance in 2003 (Figure 2.37). Sovereigns issued over two-thirds of the total, with many from Latin America and Asia that would not normally seek to issue in euros. Funding in euros was facilitated by significant demand from European mutual funds, pension funds, insurance companies, and banks. For emerging market countries, euro issuance serves to diversify the currency composition of their debt, reducing the risk of saturating the dollar-denominated market. Such issuance may also open the possibility of tapping new investors.

The issuance of global notes in local currency was a recent innovation in the market (Box 2.6, see p. 44). The extent to which local-currency-denominated global bonds represent a new channel for overcoming the "original sin" of being unable to issue long-term, fixed-coupon debt in domestic currency remains an open question. The number and size of such issues remains limited. Moreover, recent successful issues have been made in a particularly hospitable external financing environment. The successful issue of local currency notes is linked to the increased demand for higher-yielding local market assets as well as expectations of currency gains related to the weakening U.S. dollar.

Equity Issuance

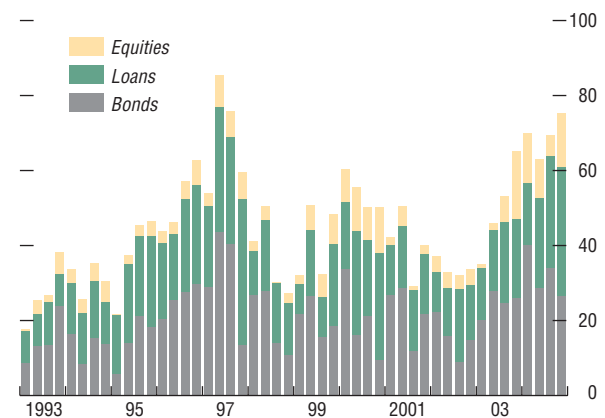
Equity issues in the second half of 2004 continued to be dominated by Asia, as in the first part of the year, but significant issuance was also seen from the EMEA region in the fourth quarter. In contrast, Latin American equity issuance remained at historically low levels, only about 4.7 percent of the total, in keeping with the tradition of financing from retained earnings or borrowing (Figure 2.38).

Figure 2.32. Correlations Between Local and External Debt



Source: Citibank.

Figure 2.33. Emerging Market Financing
(In billions of U.S. dollars)



Source: Capital Data.

Table 2.1. Emerging Market Financing

	2001	2002	2003	2004	2003				2004				2005 ¹		
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Nov.	Dec.	Jan.
<i>(In billions of U.S. dollars)</i>															
Gross issuance by asset	162.1	135.6	199.3	280.3	35.0	46.0	53.2	65.1	69.9	63.0	69.3	78.1	24.9	25.4	22.2
Bonds	89.0	61.6	98.8	131.5	20.1	27.9	24.6	26.1	40.0	28.6	33.9	29.0	9.8	5.7	18.8
Equities	11.2	16.4	28.3	43.4	1.2	2.0	7.1	18.0	13.1	10.4	5.6	14.4	5.1	4.5	1.5
Loans	61.9	57.6	72.2	105.3	13.7	16.1	21.5	20.9	16.8	24.0	29.9	34.7	10.0	15.1	1.8
Gross issuance by region	162.1	135.6	199.3	280.3	35.0	46.0	53.2	65.1	69.9	63.0	69.3	78.1	24.9	25.4	22.2
Asia	67.5	53.9	88.0	121.3	12.9	15.7	25.1	34.3	33.1	29.7	25.5	33.0	12.6	8.0	6.4
Latin America	53.9	33.4	42.8	53.0	7.8	12.1	9.1	13.8	14.4	9.6	15.9	13.1	3.8	4.3	5.3
Europe, Middle East, Africa	40.8	48.3	68.5	106.0	14.3	18.2	19.1	17.0	22.4	23.7	27.9	32.0	8.5	13.2	10.5
Amortization by asset	148.0	129.3	124.2	135.5	22.1	34.3	29.6	38.2	38.4	33.2	31.9	31.0	8.5	12.7	4.3
Bonds	60.0	59.8	61.8	76.0	10.5	17.5	15.6	18.2	25.0	17.9	17.1	16.0	4.4	5.8	2.5
Equities	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Loans	88.0	69.5	62.4	58.5	11.6	16.8	14.0	20.0	13.5	15.3	14.7	15.0	4.1	6.9	1.8
Amortization by region	148.0	129.3	124.2	134.5	22.1	34.3	29.6	38.2	38.4	33.2	31.9	31.0	8.5	12.7	4.3
Asia	66.5	56.2	49.4	53.2	8.3	12.0	14.5	14.7	16.1	13.2	11.9	11.9	4.1	4.2	2.4
Latin America	45.9	41.2	40.8	47.7	7.6	10.1	8.0	15.1	12.7	13.4	10.6	11.0	2.0	5.4	1.4
Europe, Middle East, Africa	35.5	31.9	33.9	33.6	6.2	12.2	7.1	8.4	9.6	6.6	9.4	8.0	2.3	3.0	0.4
Net issuance by asset	14.2	6.4	75.1	144.8	12.9	11.7	23.6	26.8	31.4	29.8	37.5	47.1	16.4	12.7	17.9
Bonds	29.1	1.8	37.0	55.5	9.6	10.4	9.0	8.0	15.1	10.7	16.8	13.0	5.4	-0.1	16.4
Equities	11.2	16.4	28.3	42.4	1.2	2.0	7.1	18.0	13.1	10.4	5.6	14.4	5.1	4.5	1.5
Loans	-26.1	-11.8	9.8	46.9	2.1	-0.7	7.5	0.9	3.3	8.8	15.1	19.7	5.8	8.3	0.0
Net issuance by region	14.2	6.4	75.1	145.8	12.9	11.7	23.6	26.8	31.4	29.8	37.5	47.1	16.4	12.7	17.9
Asia	0.9	-2.3	38.5	68.2	4.7	3.7	10.6	19.6	17.0	16.5	13.6	21.0	8.4	3.7	4.0
Latin America	7.9	-7.8	1.9	5.3	0.2	2.0	1.0	-1.3	1.7	-3.8	5.3	2.1	1.8	-1.1	3.9
Europe, Middle East, Africa	5.3	16.4	34.6	72.3	8.1	6.0	12.0	8.5	12.7	17.1	18.5	24.0	6.2	10.1	10.0
Secondary markets															
Bonds															
EMBI Global (spread in basis points)	728	725	403	347	626	515	486	403	414	482	409	347	363	347	356
Merrill Lynch High-Yield (spread in basis points)	795	871	418	310	757	606	543	418	438	404	384	310	403	310	329
Merrill Lynch High-Grade (spread in basis points)	162	184	93	83	156	120	110	93	94	97	91	83	93	83	85
U.S. 10-yr. treasury yield (yield in %)	5.05	3.82	4.25	4.22	3.80	3.52	3.94	4.25	3.84	4.58	4.12	4.22	4.12	4.22	4.13
<i>(In percent)</i>															
Equity															
DOW	-7.1	-16.8	25.3	3.1	-4.2	12.4	3.2	12.7	-0.9	0.8	-3.4	-1.9	0.3	-0.9	-2.7
NASDAQ	-21.1	-31.5	50.0	8.6	0.4	21.0	10.1	12.1	-0.5	2.7	-7.4	1.9	-2.6	3.2	-5.2
MSCI Emerging Market Free	-4.9	-8.0	51.6	22.4	-6.8	22.2	13.5	17.3	8.9	-10.3	7.4	-0.2	3.9	5.5	0.0
Asia	4.2	-6.2	47.1	12.2	-9.3	21.4	14.9	16.3	7.6	-12.2	4.2	-0.5	4.3	4.0	1.4
Latin America	-4.3	-24.8	67.1	34.8	-0.9	22.6	12.4	22.4	6.2	-9.2	16.6	-1.1	4.3	7.9	-1.9
Europe, Middle East, Africa	-20.9	4.7	51.2	35.8	-5.3	23.7	9.3	11.7	13.2	-7.4	7.8	1.0	3.0	6.9	-1.4

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

¹Issuance data (net of U.S. trust facility issuance) are as of January 31, 2005, close-of-business London. Secondary markets data are as of January 31, 2005, close-of-business New York.

Syndicated Lending

Syndicated lending, both on a net and on a gross basis, remained well above average in the second half of 2004, led by EMEA and Asia. Lending to Latin America increased but remained well below the flow to other regions

(Figure 2.39). Lending to European corporates made up the biggest increase in flows in the second and third quarters of 2004, with flows concentrated in Russia and Turkey. In Asia, flows continued to be dominated by Hong Kong SAR and China.

Foreign Direct Investment

There was a modest recovery in foreign direct investment (FDI) in emerging markets in 2004 (Figure 2.40).¹¹ As in previous years, Asia continued to receive the largest share, driven by flows into China, supported by strong economic growth and world demand for its exports. Latin America also had a significant increase, led by Mexico and Brazil. In these countries, FDI flows were boosted by increased cross-border merger and acquisition activity in the banking and manufacturing sectors, respectively. Flows into Eastern and Central Europe were led by increased flows into Russia.

Banking Sector Developments in Emerging Markets

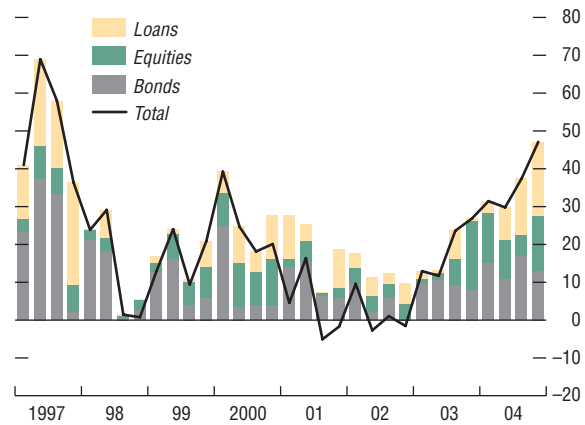
Banking systems in emerging markets generally show improving capital positions, asset quality, and earnings (Table 2.2, see p. 35).¹² Most market-based measures, including market valuations of bank stocks relative to the broader market indices and computations of distance to default derived from a standard valuation model (Box 2.7, see p. 46), also reveal a generally positive picture. In Asia, banks further improved their financial positions with the ongoing economic expansion, and banks in Latin America are showing stronger results, especially in countries that were not recently afflicted by crises. The expansion by foreign banks in a number of countries in emerging Europe is driving strong results. Performance has been more mixed in banking systems in the Middle East, Central Asia, and Africa.

Regulatory attention in many emerging markets is focused on improving institutions and risk management capacity. Immediate concerns are the risks posed by rapid credit

¹¹Based on World Bank estimates.

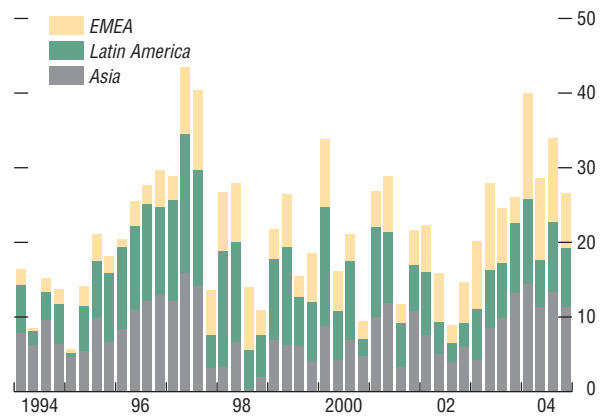
¹²Classifications and definitions of various financial soundness indicators are not uniform across countries. Thus, any cross-country comparisons should be considered only indicative.

Figure 2.34. Quarterly Emerging Market Net Issuance
(In billions of U.S. dollars)



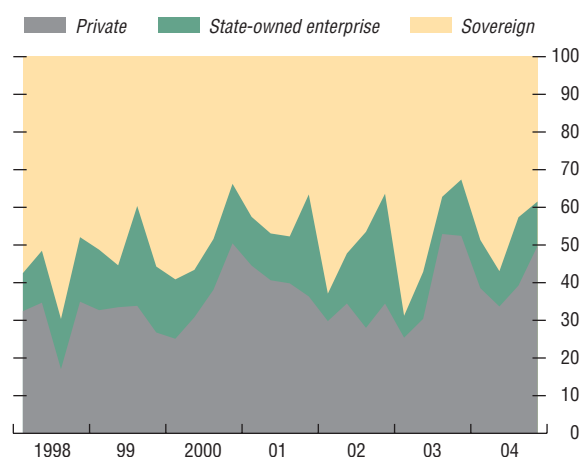
Sources: Capital Data; and IMF staff estimates.

Figure 2.35. Emerging Market Bond Issuance
(In billions of U.S. dollars)



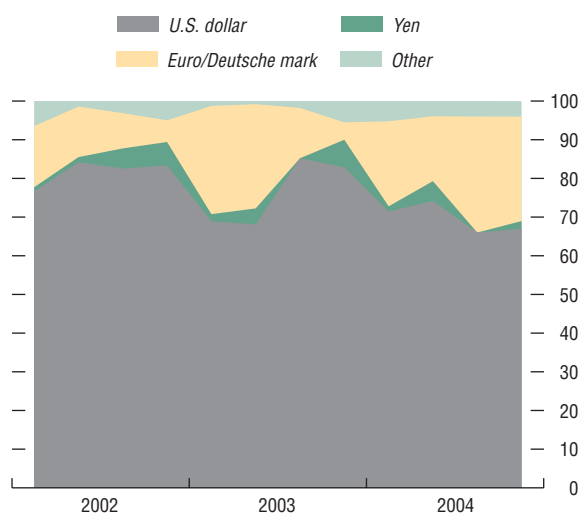
Source: Capital Data.

Figure 2.36. Share of Emerging Market Bond Issuance
(In percent)



Source: Capital Data.

Figure 2.37. Emerging Market Bond Issuance by Currency
(In percent)



Source: Capital Data.

growth and the potential effects of higher interest rates. Longer-term reforms are progressing slowly.

Asia

In the Asian emerging markets, banks' earnings, asset quality, and capital adequacy have generally improved over the last two years under favorable macroeconomic conditions. Performance has also been bolstered by greater operational efficiency and government-supported dispositions of impaired assets in key countries. The generally positive developments are reflected in higher ratings of banks by private sector rating agencies, considerable improvement in distance-to-default measures, and a modest improvement in relative market valuations of bank stocks (Figure 2.41).¹³

Authorities in a number of countries in the region are moving to address structural issues in their banking systems. Efforts are being made to tighten regulation and supervision and recapitalize and restructure financial institutions. However, there remains considerable scope for further strengthening balance sheets and risk management of domestic financial institutions. In particular, nonperforming loan (NPL) ratios in the region, while declining, remain high despite restructuring and takeover of loans by government-sponsored asset management companies. Problem loans are especially pronounced at state-owned banks in some cases, where lending activities tend to be prone to outside pressures. Corporate restructuring is also lagging behind other regulatory reforms in some of the countries in the region.

In some cases, balance sheets of financial institutions are exposed to interest rate risk.

¹³As explained in Box 2.7, the distance-to-default measure is computed as the sum of the ratio of the estimated current value of assets to debt and the return on the market value of assets divided by the volatility of assets.

Having benefited from a benign interest rate environment, a number of institutions continue to carry substantial government securities in their portfolios, which may be affected by a reversal of the low interest rate environment. While in some countries the authorities have moved to require additional buffers to absorb the effects of increases in interest rates, in others the capacity to cushion the effects remains limited.

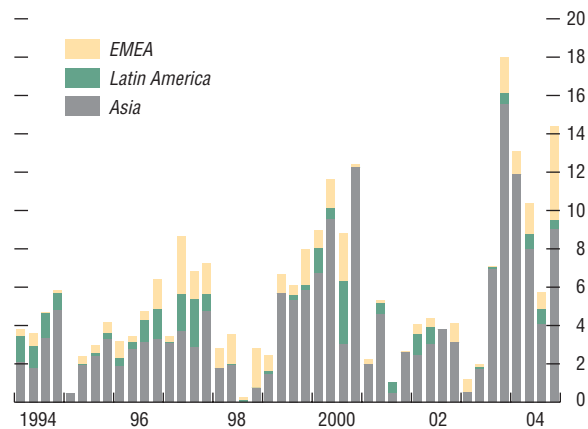
Generally, there is a need for faster convergence to international best practices in supervision and regulation. Issues warranting attention to varying degrees in some countries include proper enforcement of prudential regulations, alignment of capital adequacy requirements with the international standard, consolidated supervision, supervisory independence, prompt corrective action provisions, effective bankruptcy arrangements, and transparency.

Europe

Market-based indicators for the banking sector show a faster improvement in the European emerging markets than elsewhere in the region, with a declining likelihood of default, higher profitability, and prospects for long-term growth (Figure 2.42).¹⁴ The strong earnings performance was sustained in 2004, and asset quality and capital adequacy strengthened. The favorable prospects are reflected in continued strong bank ratings. While banking systems in the region generally seem poised for continued strong performance, rapid credit growth, especially in the retail sector, poses a risk in some countries. In addition, credit expansion in some cases is denominated in foreign exchange and to sectors with no foreign exchange earnings, thereby increasing the risks.

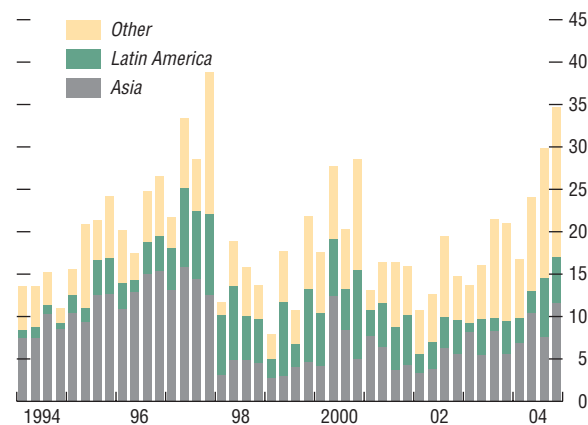
¹⁴The rise in the distance-to-default measure in Figure 2.42 indicates a decline in the prospects for banking system insolvency.

Figure 2.38. Emerging Market Equity Issuance
(In billions of U.S. dollars)



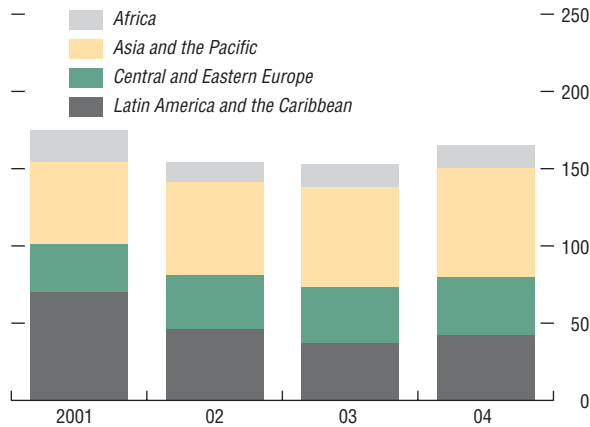
Source: Capital Data.

Figure 2.39. Emerging Market Syndicated Loan Commitments
(In billions of U.S. dollars)



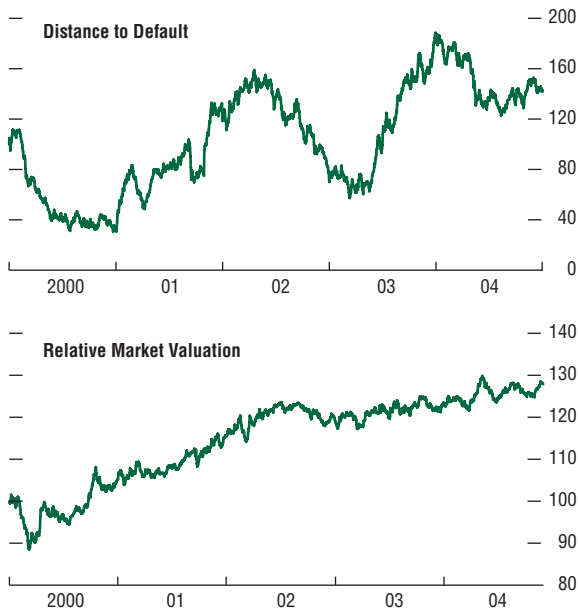
Source: Capital Data.

Figure 2.40. Foreign Direct Investment
(In billions of U.S. dollars)



Source: World Bank.

Figure 2.41. Asian Emerging Markets: Market Indicators
(January 3, 2000 = 100)



Sources: Datastream; and IMF staff estimates.

In many emerging European countries, the level of financial intermediation is lower than in developed economies, so that rapid credit growth, to an extent, may be structural. However, growth rates of well over 40 percent experienced in some countries have the potential to create problems in credit screening and pricing. The substantial growth of foreign currency credits increases the exchange-rate-induced credit risk in the banking system. Also, since mortgage credit has been a major component, banks have become more exposed to the real estate market.

Most emerging European countries have improved their supervisory structures. A number of EU accession countries have implemented legislative reforms aimed at harmonizing their laws with those in the EU. Effective implementation of legislative changes concerning the operational independence of supervisory authorities, strengthening supervisory oversight, and tightening the bankruptcy process is part of the unfinished agenda of financial sector reforms in some countries.

Western Hemisphere

The financial systems in much of the region appear healthy with the exception of those emerging from financial crises. Stock indicators, such as capitalization and NPL ratios, and flow indicators, such as profitability, are stable or improving. Market-based measures suggest that the financial position of banking institutions has been strengthening, as has investor confidence in them (Figure 2.43). These trends are evident in most of the larger economies of Latin America. The improvement is somewhat tentative in countries emerging from banking crises, where fundamental reforms still need to be fully implemented.

Three of the main factors contributing to the positive outlook are

- A benign macroeconomic environment, characterized by rising growth rates, moder-

Table 2.2. Emerging Market Countries: Selected Bank Financial Soundness Indicators
(In percent)

	Return on Assets			Nonperforming Loans to Total Loans			Regulatory Capital to Risk-Weighted Assets		
	2002	2003	2004 ¹	2002	2003	2004 ¹	2002	2003	2004 ¹
Emerging Asia									
Mean	0.8	1.0	1.5	12.7	11.2	10.1	14.5	15.2	14.8
Median	0.8	1.0	1.4	13.1	10.9	9.5	13.2	13.8	13.7
Standard deviation	0.4	0.5	0.6	8.9	8.2	8.2	3.3	3.9	3.8
Emerging Europe									
Mean	1.5	1.6	1.7	9.3	8.0	7.8	17.5	17.1	16.0
Median	1.4	1.4	1.6	7.7	5.1	5.4	16.2	14.9	15.2
Standard deviation	0.5	0.7	0.6	7.0	8.2	7.9	4.4	5.6	4.2
Latin America									
Mean	-2.6	1.0	1.4	12.5	10.1	8.6	13.2	14.3	16.2
Median	1.0	1.2	1.2	8.7	7.7	5.3	14.2	14.1	14.8
Standard deviation	10.9	2.2	1.8	10.3	8.4	8.1	6.1	2.7	5.6
Middle East²									
Mean	1.1	1.3	...	15.4	15.2	...	15.6	15.0	...
Median	0.8	1.2	...	16.1	14.0	...	16.7	15.9	...
Standard deviation	0.7	0.7	...	4.6	5.9	...	4.5	4.9	...
Sub-Saharan Africa									
Mean	2.7	3.0	...	19.9	17.3	...	17.7	15.7	...
Median	2.4	2.3	...	22.1	19.1	...	17.6	17.0	...
Standard deviation	2.4	2.1	...	9.4	9.7	...	4.4	4.1	...

Source: National authorities; and IMF staff estimates.

¹Refers to gross nonperforming loans (NPLs). For 2004, the latest available figures.

²Including Azerbaijan and the Kyrgyz Republic.

ate or low inflation, and low real interest rates. Global interest rates have begun to increase, but from levels that were seen to be exceptionally low, and the pace of increase has been moderate. For many countries in the region, higher U.S. rates were offset by lower country risk premiums. The depreciation of the U.S. dollar may have contributed to financial strengthening, for example, in the export sector in countries with currencies tied to the dollar.

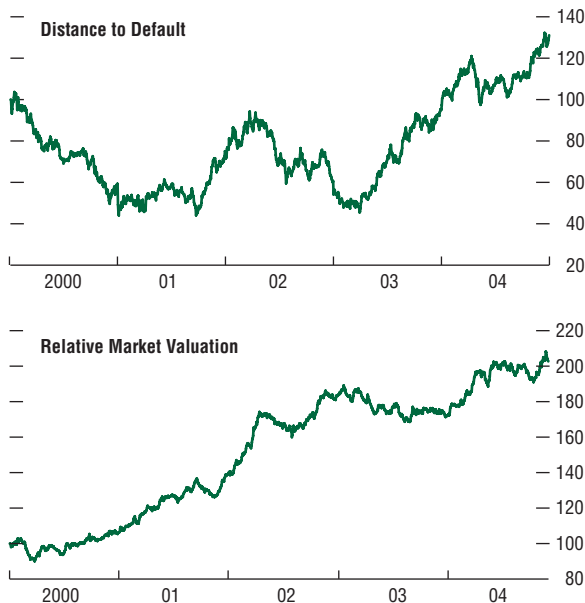
- Improved loan quality, as indicated by lower NPL ratios and lower provisioning, has translated into higher profitability. While in some cases an overhang of NPLs has been carried forward from past economic downturns, the flow of new impaired credits has been moderate.
- Fast growth in consumer and mortgage lending. Lending to the household sector has been vigorous, and relatively profitable. In much of Latin America, this line of busi-

ness has been developing from a very low base, and lenders can enjoy high demand once institutional hindrances are overcome.

Available indicators suggest that banking systems are well placed to handle a rebound in interest rates and direct credit risk, for example, from consumer and mortgage lending.

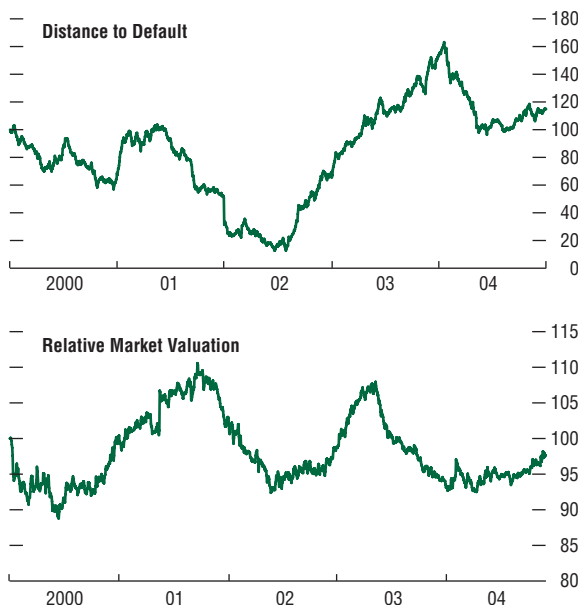
Financial system performance in many of the larger Latin American countries has been satisfactory. In particular, the financial system in countries not affected by crises is benefiting from and contributing more to an overall economic upswing. A number of measures have been taken to strengthen the prudential regulatory framework, in some cases following recommendations made in the context of the joint IMF–World Bank Financial Sector Assessment Program. The countries most affected by major financial crises have seen a rebound in financial intermediation and bank soundness.

Figure 2.42. Emerging Europe: Market Indicators
(January 3, 2000 = 100)



Sources: Datastream; and IMF staff estimates.

Figure 2.43. Latin America: Market Indicators
(January 3, 2000 = 100)



Sources: Datastream; and IMF staff estimates.

Middle East and Africa

Data limitations suggest greater caution in interpreting regional aggregate financial soundness indicators in the Middle East, Central Asia, and Africa. These indicators point to a marginal weakening in banks' performance in the Middle East, although individual country experiences vary. Favorable economic developments augur well for banking reforms in some countries in the region. There are indications that in some countries the authorities are moving to address structural weaknesses, including in the legal and regulatory areas, asset quality, and capital adequacy at state-owned banks. Large exposure to the sovereign and high degree of dollarization remain the main risks in some countries. Generally, in the oil-rich countries, the banking systems remain highly liquid, profitable, and well capitalized. In a number of African countries, the banking systems continue to be burdened by serious weaknesses, and implementation of reform measures remains slow.

Structural Issues in Mature Markets

Recent Developments in Energy Markets

The run-up in crude oil and other energy prices during 2004 has increased investor interest in the energy sector. The following will update our previous analysis of the energy markets, published in the September 2004 *Global Financial Stability Report*.

Investor Perceptions of Structural Shifts in Energy Markets

Perceived structural shifts in energy markets have increased interest and participation in energy-related commodities. Industry analysts have noted that the rise in absolute and relative crude oil prices during 2004 reflected investor perceptions of declining excess capacity among global producers, particularly in specific grades of crude oil and downstream products, in light of upward revisions to current and prospective global demand from

non-OECD countries, such as China. Investor flows have been spread along the entire energy supply chain, with signs of tight capacity and bottlenecks in production, refining, and distribution. Indeed, the reason most frequently cited by market participants for the rise in oil prices is the lack of spare capacity, particularly for light sweet crude oil and related refining capabilities, following 20–25 years of underinvestment.¹⁵

Investors do not perceive a general or global shortage of crude oil, but over the medium term, they appear increasingly concerned about potential bottlenecks. For example, investors believe that existing production and refining capacity places a premium on light sweet grades, whose available supplies are being questioned.¹⁶ Recent changes in market prices appear to confirm investor perceptions: as crude oil prices in general rose during 2004, prices for various grades of light sweet crude oil rose relatively more than heavier grades. Moreover, when the absolute price of crude oil retreated from recent highs in October 2004, the spread between light and heavy grades continued to rise and/or

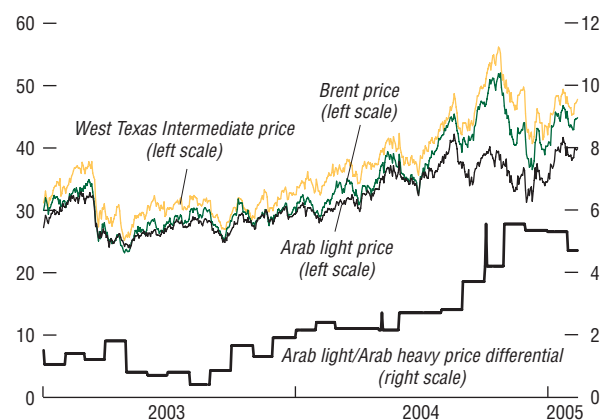
(continued on p. 41)

¹⁵During the 1970s, sustained high oil prices, and various tax and other incentives, encouraged capital expenditure on exploration and infrastructure development. Indeed, overinvestment in these facilities contributed to a decline in oil prices during the 1980s and discouraged, to some extent, infrastructure development. More recently, as exploration and production (E&P) companies adjust oil price expectations upward, there has been growing interest in expanding oil reserves through either exploration or acquisition.

¹⁶Industry analysts have noted that much of the current global crude oil production is based on aging oil fields, and that fields abundant in light sweet crude have peaked (Texas fields peaked during the 1970s) or may be nearing their peak productive age (e.g., Brent production in the North Sea). Moreover, recent exploration has yielded smaller and more difficult-to-access replacement fields that generally produce heavier, or more sour, grades of crude oil. The April 2005 *World Economic Outlook* discusses in greater detail the general erosion of spare oil production capacity during 2004, and medium- and long-term outlooks for supply and demand factors affecting the oil market.

Figure 2.44. Arab Light/Heavy, Brent, and West Texas Intermediate Crude Oil Pricing

(In U.S. dollars a barrel)



Source: Bloomberg L.P.

Box 2.2. Pension Fund Update

Pension funds have the opportunity to enhance financial stability by acting as a stable, long-term investor base. However, they face a number of challenges as populations in many industrialized countries age. The September 2004 GFSR discussed the risk management and investment strategies of pension funds, which can have significant effects on capital markets, and highlighted several ways through which policymakers can enhance such practices and their role as long-term investors.

Funding Developments

In 2004, global funding levels recovered marginally, with increased contributions primarily helping with improvements in the funding gap. Between 2000 and 2002, the equity market and interest rate declined sharply, reducing the funding ratios of many pension funds. In 2003 and 2004, the impact of relatively strong equity returns was largely offset by that of the continuing decline in corporate bond yields (increasingly used to discount liabilities), and improvements in funding positions at year-end 2004 were primarily the result of increased contribution rates. In the United States, analysts estimate that the defined benefit plans of the Fortune 100 companies were 88 percent funded on average at the end of 2004, up from 78 percent at the end of 2002. Similarly, in the Netherlands, the equity market recovery and increased contributions since 2003 have also helped with the average funding ratio, up from about 105 percent at the end of 2002 to an estimated 118 percent at the end of the third quarter of 2004. In January 2005, however, the combination of a decline in long-term bond yields and negative equity returns led to what some observers described as the most significant monthly decline in funding ratios in recent years (i.e., over 4 percent for a typical U.S. pension fund).

While no significant shift from equities to bonds has been observed in the most recent period, some pension funds have invested a growing share of their portfolio in alternative

asset classes. In the United States, a recent Pensions & Investments survey indicated that the top 200 plan sponsors did not drastically change their asset mix in 2004, continuing to hold relatively large equity portfolios. Meanwhile, like other institutional investors, many pension funds have sought to benefit from risk-adjusted returns provided by markets and products that are less correlated with conventional equity or bond indices. In the United States, some market participants estimate that increasingly corporate and public pension funds are devoting 10 percent or more of their assets to alternative asset classes, such as hedge funds (including funds with an energy or commodities focus), private equity, distressed debt, and venture capital.

Policy Initiatives

Awareness of the economic, financial, and household challenges associated with the implications of aging has continued to grow. Ongoing reforms of pension and other benefit systems are increasingly being debated in the general public and in policymaking spheres. The debate has progressed most significantly in the United Kingdom in the last six months, as is evident in the release of the Interim Report of the Pensions Commission and the ongoing discussions about the creation of a pension fund guarantee scheme. The Interim Report highlights three possible ways forward in the United Kingdom: (1) a major revitalization of the voluntary system, (2) significant changes in the state system, and/or (3) an increased level of compulsory private savings. The Final Report of the Pensions Commission, to be released in the fall of 2005, will focus on analyzing these factors. (See also Chapter III for further discussion of the Interim Report.)

On the supervisory front, significant changes have been implemented in the Netherlands. The formal merger of the Nederlandsche Bank (DNB) with the Pensions and Insurance Supervisory Authority on October 30, 2004, marked the completion of a process to develop a more integrated supervisory framework. In

October 2004, the DNB issued a consultation document proposing a Financial Assessment Framework (FAF) for pensions. The FAF is expected to be submitted to the parliament during 2005, and to be implemented in the beginning of January 2006. The framework's major proposals include (1) the introduction of fair value accounting for pension fund assets and liabilities, in order to report what the authorities see as a more realistic measure of pension financial positions, and (2) new funding measures aimed at increasing the level of confidence that pension funds will remain properly funded, and facilitating corrective measures to avoid underfunding (see the September 2004 GFSR, Box 3.4, p. 104).

In the United States, the financial position of the pension guarantee fund has prompted further reform considerations. The funding situation of the Pension Benefit Guaranty Corporation (PBGC) deteriorated for the fourth consecutive year in 2004, with a deficit of about \$23 billion. In early 2005, the administration outlined a pension reform proposal aiming to bring stability and flexibility to funding rules, and to encourage fully funded plans. The proposed regulatory changes focus on three aspects: (1) funding rules and incentives to encourage funding cushions (e.g., allowing plan sponsors to make additional deductible contributions); (2) disclosure to workers, investors, and regulators about pension plan status (e.g., replacing multiple measures of pension liabilities with one measure); and (3) insurance guarantee premiums to better reflect a plan's risks and to better support the PBGC's financial solvency (premiums to be determined by plan funding levels and PBGC's expected losses).

New Financial Instruments for Pension Funds

The development of markets for long-dated and index-linked bonds, which are essential to risk management in the pension fund industry, is progressing. Such instruments are an important complement to a more risk-based regulatory framework: they facilitate and encourage pension funds to better match their assets and

long-term liabilities. In February 2005, the French Trésor introduced a new 50-year euro-denominated bond, in response to the positive feedback received from a survey of investors, including pension funds, regarding the demand for a long-dated bond. In Japan, the authorities issued index-linked bonds with a 10-year maturity in 2004; they intend such instruments to represent about 2 percent of their total public debt issuance in 2005. In the United Kingdom, the Debt Management Office announced in March 2005 that, from May 2005, it would issue 50-year conventional gilts, and that later in the year, it may also issue 50-year index-linked gilts. Prior to this decision, the longest dated government debt instrument was a 30-year bond. Consultations with market participants have confirmed the demand from the U.K. pension industry (and other investors) for long-dated, high-quality bonds, and that such demand is likely to increase in the future. The German authorities have also indicated their intention to issue index-linked debt securities during 2005.

A very interesting development has been the planned issuance of a "longevity bond" by the European Investment Bank, aimed at helping pension funds manage longevity risk. The instrument, which is described in Chapter III of the GFSR, is designed to help U.K. pension funds (and others) hedge longevity risk. Further developments of similar or related instruments would enhance the risk management and capital capacity of pension funds and insurance companies in this area, and potentially increase the supply of annuity products.

The above developments are in line with several of the key policy recommendations made in the September 2004 GFSR. In many countries, pension funds continue to face important challenges, including the adequacy of their funding levels, and the need to ensure that they will be in a better position to absorb market movements. In this context, we welcome the above measures aimed at further focusing the industry and its regulators on risk management and the development of prudent funding cushions, and therefore on further promoting financial stability.

Box 2.3. Insurance Industry Update

As noted in recent issues of the GFSR, insurance firms in a number of mature markets have increasingly taken on credit risks that were formerly borne by banks and other market participants. At the same time, regulatory authorities in several countries have moved to implement more market-sensitive and risk-based capital adequacy standards. In response, insurers have generally improved their own risk management systems and, in some cases, moved to de-risk their balance sheets.

On the regulatory front, the Solvency II project continues to progress, with the adoption of a discussion paper (MARKT/2515/04). It had been anticipated that the Solvency II framework would be ready for adoption in 2007, but it now appears that finalization may be delayed. Modeled on the Basel II capital adequacy standards for banks, Solvency II envisions a similar “three pillar” approach to insurance regulation. More broadly, the goal is to have solvency standards that reflect more closely the balance sheet risks of insurers.

On January 1, 2005, the United Kingdom put into effect the risk-based solvency standards for life insurance companies as set out in Consultative Paper 195 (CP195), by including the proposed requirements in its Integrated Prudential Sourcebook (PSB) for insurers. As described in the April 2004 GFSR, the new standards encompass two important developments in the regulation of life insurers. The first is a “twin peaks” solvency approach for “with-profits” products (policies that pay a bonus depending on the firm’s investment results),¹ which entail applying the more stringent of a (traditional) minimum capital requirement, and an “enhanced capital requirement,” which takes account of expected bonus payments and other contingent liabilities. The second development is an individual capital adequacy standard, under which each life insurer develops the appropriate capital standard for its own self-assessed risk.

¹The twin peaks calculation is compulsory for life insurers with aggregate with-profits liabilities of 500 million pounds or more.

In addition to imposing more risk-oriented capital standards, the new PSB regime is likely to encourage the use of more sophisticated risk management practices. In addition, a few U.K. insurers at the end of 2004 issued capital instruments that are designed to satisfy the PSB definition of Innovative Tier 1 capital for insurers. The instruments are a form of subordinated debt, with clauses permitting cumulative deferral of interest payments and, in some cases, principal repayment, in the event of certain adverse financial developments, thus allowing the securities to be counted as Tier 1 capital under the new standards.

Elsewhere, the Netherlands issued a consultation paper in December proposing a more risk-based solvency standard. The Netherlands also merged the Pensions and Insurance Supervisory Authority with the Netherlands central bank on October 30, so as to create a unified regulator for financial institutions. No major initiatives appear to be currently under way in the United States or Japan, both of which already apply risk-based capital (RBC) solvency standards. However, there has been some informal discussion of further refining the U.S. NAIC standards, including potentially applying differing risk weightings for equity holdings, similar to the system used for fixed-income investments.

As insurance firms reshape their balance sheets, there are implications for financial markets. For life insurers in particular, the evolving regulatory environment may encourage more duration matching, probably entailing greater bond holdings—especially in Europe—and more trading of derivatives to hedge the embedded options in their balance sheets. Flow of funds figures suggest that insurers in the United Kingdom and Japan have continued to shift their asset portfolios toward bonds (government and corporate), as opposed to equities, mortgages, or (in Japan’s case) corporate loans. Insurers in the United States have a longer history of investment in corporate bonds, and have continued to allocate a substantial portion of their investment portfolios to credit instruments.

A series of natural disasters in the latter part of 2004 affected the general insurance industry. Industry sources estimate the insurance liabilities for the hurricanes that struck Florida and the southeast United States in 2004 at \$20–\$28 billion. Analysts view such events as likely to prolong the existing “hard” market for catastrophic risk (i.e., relatively high premiums and pricing power for insurers), but as not likely to significantly push up rates or threaten solvency ratios for larger insurers. A series of typhoons in Japan resulted in insurance claims of about \$4.9 billion and a sharp drop in earnings for non-life insurers in the first half of fiscal 2004 (April–September). Japan also suffered a major earthquake in October 2004 that resulted in about \$130 million in claims, almost all of which was covered by the Japan Earthquake Reinsurance Company, a state-reinsured joint venture of the 20 leading private Japanese non-life

insurers.² The terrible earthquake and related tsunami disaster in South Asia at the end of 2004 may raise the political urgency of global preventive action, including support for reinsurance coverage for developing countries vulnerable to natural disaster. However, because the countries affected had very little insurance coverage, the effect on the capital adequacy or earnings of major insurers is expected to be quite small.

²The Japanese government bears about 83 percent of the potential insurance liability of the company, which is currently capped at 4.5 trillion yen (\$43 billion). The California Earthquake Authority (CEA) is an insurance pool with a different form of state involvement. The state of California provides no funding for the CEA and bears no potential liability for CEA exposure, but it does set CEA rates and fees. The Florida Hurricane Catastrophe Fund, however, is a public sector entity, with which all insurers writing hurricane and related policies in Florida are required to reinsure.

(continued from p. 37)

remained at an elevated level (Figure 2.44).¹⁷ Although OPEC is traditionally considered the swing producer and major source of the world’s excess production capacity, investors’ suspicions of potential bottlenecks for light sweet crude gained credibility during the fourth quarter of 2004 when light sweet crude prices rose sharply, and the incremental supply from OPEC was mainly composed of heavier and more sour grades of crude oil (see the April 2005 *World Economic Outlook* for further details).

Natural gas is another energy source in which investors perceive supply constraints. As a potential (environmentally preferred) substitute for oil and coal in generating electricity and in home heating, its price move-

ments are often influenced by price dynamics from other markets, particularly oil. Most simply, natural gas supply has limited distribution facilities. Although pipelines have been built to connect gas reserves (e.g., in Russia) with many of the major end markets (e.g., continental Europe), environmental concerns related to construction activity frequently limit the ability to expand existing pipelines and storage facilities. Shipping of liquefied natural gas (LNG) is one way to transport the product, but environmental and local safety concerns have limited the development of LNG ports, especially along the East Coast of the United States, which is one of the largest natural gas markets. Currently, much of the observed price vola-

(continued on p. 45)

¹⁷Comparing the spread between Arab light and Arab heavy crude is often a preferred measure among oil analysts for comparisons of lighter benchmark grades (e.g., West Texas Intermediate (WTI) or Brent) to heavier benchmark grades (e.g., Dubai) because the Arab light/heavy spread eliminates transportation costs and other market-specific shocks (e.g., hurricanes and other local disruptions) that can distort the spread.

Box 2.4. Credit Derivatives Market Came of Age in 2004

The agreement among the leading credit derivatives market makers on standardization of credit default swap (CDS) indices (DJ iTraxx in Europe and DJ Trac-x in the United States), improved liquidity and brought about a large reduction in CDS bid/ask spreads. The number of quoted reference entities increased particularly in 2004, and was mostly concentrated in high-yield names. As a consequence bid/ask spreads on high-yield names were reduced to values comparable with those of higher-quality names. The reduction of bid/ask spreads also facilitated the development of new derivative products.

As a result of increased liquidity, CDSs started to be consistently quoted and traded for the three- and 10-year maturities (in addition to the five-year sector), providing the basis of a more complete credit spread curve. The existence of several quoted points on the curve allowed the development of the forward credit spread curve, thus supplying another powerful tool for managing credit positions. Consistent quotations for CDSs on subordinated debt are now also available.

Strong trading liquidity in standardized synthetic collateralized debt obligations (CDO) tranches, and related hedging needs, opened the way for correlation trading. Correlation became a significant operational issue for market makers only when CDO tranches began to be structured to meet specific investment and risk management needs of clients. At that point, dealer books became, from time to time, more unbalanced, and there was a need to rebalance positions. Liquidity in index tranches trading (i.e., the DJ iTraxx and DJ Trac-x) allowed dealers to derive consistent implicit correlation values from market prices, enabling them to identify the needed hedge. Correlation is also a driving factor for pricing other credit derivative's products. For example, in a first-to-default (FTD) basket, an investor can buy or sell protection against the first default of one of the credits referenced in the basket. Therefore, the cost of the FTD depends not only on the default probability and recovery rates associated with each issuer but also on the correlation of credit events affecting them.

The very low level of credit spreads encouraged the development of new financial instruments, such as credit spread options, first and Nth-to-default baskets, constant maturity CDSs (CMCDSs), and constant maturity collateralized debt obligations (CMCDOs). Credit spread options provide an effective way to buy or sell protection on credit spread movements for the reference name. The type of options currently traded (usually European-style) encompass payer and receiver swaptions and straddles on all the indices, as well as single-name CDSs of different maturities. The investor who sells protection with CMCDSs and CMCDOs is exposed to counterparty default risk, but is partially insulated from credit spread movements. The received coupon is in fact floating, and periodically readjusted to reflect current spread levels of CDSs of the same maturity.

The credit derivatives market has continued to develop in terms of participants and organizational structure. There are now at least 20 market makers with quite distinct levels of sophistication, risk appetite, and product capacity providing pricing and liquidity. Market depth and liquidity have been, so far, large enough to manage a variety of credit events (e.g., Parmalat in 2003), without serious disruptions and with continuous two-way pricing. Efforts to automate settlement procedures among market makers, who execute about half of the daily transactions in the market, has reduced the backlog in confirmation procedures.

Despite its rapid pace of development, the credit derivatives markets remain vulnerable. There are two major sources of vulnerability, according to market participants. First, it is difficult to assess whether credit derivatives markets, as well as the underlying credit market, will continue to operate smoothly in the event of a major credit event (e.g., a credit event related to a major automobile manufacturer). Second, for some reference names some market participants perceive that the amount of protection bought or sold exceeds the value of the underlying assets. Therefore, if a credit event occurs, there may not be enough deliverable assets for all the claimants.

Box 2.5. Collective Action Clauses

Since the first Mexican issue with collective action clauses (CACs) in New York in March 2003, the use of CACs in international sovereign bonds issued under New York law has generally become market practice. In 2004, sovereign bond issues that include CACs under New York law by emerging market countries represented more than 90 percent of total value of new issues, and 44 percent of the value of the outstanding stock of bonds by emerging market countries.

Market practice for CACs in bonds issued under New York law has rapidly converged toward using a voting threshold of 75 percent of outstanding principal for majority restructuring provisions.¹ This has been the case across both investment-grade and noninvestment-grade sovereign bonds. In this context, Guatemala and Venezuela, following Brazil's move in June 2004, lowered the voting threshold in their recent sovereign issues from 85 percent to 75 percent, to reflect market practice.

Since September 2004, two more emerging market countries—Hungary and El Salvador—included CACs in their international sovereign

bonds issued under New York law, while nine emerging market countries—Brazil, Colombia, Guatemala, Lebanon,² Mexico, Panama, Peru, Turkey, and Venezuela—continued with their established practice of including CACs in their bonds issued under New York law. China did not include CACs in its recent bonds issued under New York law.³ There were no new issues by mature market countries in that jurisdiction. The inclusion of CACs in bonds issued under New York law continued to bear no observable impact on pricing.

There have been several issues that included CACs under English law, following market practice in that jurisdiction: Brazil, Hungary, Jordan, and Turkey among the emerging market countries, and Austria and Finland among the mature market countries. Jamaica was the only country that issued under German law. As is customary in that jurisdiction, this issue did not include CACs. There were no issues under Japanese law.

²The Lebanon bonds include only majority restructuring provisions.

³Israel did not include CACs in its October 2004 bond issued under New York law, which is fully guaranteed by the United States with respect to principal and interest.

¹See IMF's "Guidelines for Public Debt Management, Amended 2003."

Emerging Markets Sovereign Bond Issuance by Jurisdiction¹

	2002				2003				2004 ²			
	Q1	Q2	Q3	Q4	Q1	Q2 ³	Q3	Q4	Q1	Q2	Q3	Q4
With CACs⁴												
Number of issuance	6	5	2	4	9	31	10	5	25	19	21	14
Of which: New York law	...	...	...	...	1	22	5	4	14	12	14	12
Volume of issuance	2.6	1.9	0.9	1.4	5.6	18.0	6.4	4.3	18.5	15.9	12.2	9.1
Of which: New York law	...	...	...	...	1.0	12.8	3.6	4.0	10.6	9.5	7.7	7.7
Without CACs⁵												
Number of issuance	17	12	5	10	14	4	7	7	2	2	1	4
Volume of issuance	11.6	6.4	3.3	4.4	8.1	2.5	3.5	4.2	1.5	0.4	0.3	2.7

Source: Capital Data.

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

²Data as of January 3, 2005.

³Includes issues of restructured bonds by Uruguay.

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

⁵German and New York laws.

Box 2.6. Issuing Global Bonds in Local Currencies: Toward the Absolution of Original Sin?

Colombia took a step in 2004 toward overcoming what has been termed the “original sin” of emerging markets: the inability to issue international bonds in their own currencies.¹ Colombia was only the fourth emerging market issuer and the second sovereign to issue such a bond. In November 2002 Bancomext, a Mexican bank specializing in foreign trade finance, issued a Mexican-peso-denominated Eurobond for 1 billion pesos (\$100 million). Uruguay issued the equivalent of \$200 million in inflation-protected local currency bonds in October 2003. After Colombia’s issue, four Brazilian banks issued real-denominated international bonds.²

The structure of the Colombian bond is innovative. It is denominated in local currency, with the interest and principal calculated in local currency, but payable in U.S. dollars at the spot exchange rate around the day when interest or principal falls due. The bond is thus equivalent to investing in local government debt, except investors do not have to undertake a spot currency transaction at each point when cash flow is generated to turn the local currency proceeds into dollars.

The bond offers advantages for both the investor and the issuer. For the investor:

- It provides a vehicle to take exposure in high-yielding local currency markets. The Colombian global peso-denominated bond yields 11.875 percent annually, compared with around 6.9 percent on a Colombian dollar-

bond of a similar kind. In addition, investors are also attracted by the possibility that the Colombian peso could continue to appreciate.

- It is protected against convertibility risk. Because it is a global bond payable in dollars, the investor does not have to worry about exchange controls.
- Because it is a global bond, it is governed by the legal statutes of the state of New York, which some investors might find more favorable than local Colombian law in the event of a default.
- It allows investors to take exposure in local Colombian government debt without having to fulfill local registration requirements or pay local taxes.
- The bond is cleared through Euroclear, an international clearing system that facilitates the transfer and payment of funds. A global bond issue settled through Euroclear widens the investor base to funds lacking the facilities or the mandate to invest in local emerging markets.

The size of the issue and the final price reflect these advantages. The issue was initially planned for \$250 million, but generated orders for up to \$1.1 billion, and was subsequently increased to \$325 million. The issue was reopened in January 2005 for another \$150 million equivalent. In terms of pricing, the bond was originally issued to yield almost 50 basis points less in pesos than the local Colombian TES treasury bond of equivalent duration. This discount reflects the relative benefits foreign investors receive from global bonds in terms of reduced transaction costs for local currency exposure, protection against convertibility risk, and jurisdictional benefits, compared with investing in Colombia’s local market. One concern for investors, however, is the relatively small size of the issue, which may restrict its liquidity in the secondary market.

Advantages for the Colombian government include the following:

- The structure provides a way of sharing the currency risk between the investor and the government: it eliminates the convertibility

¹“Original sin” is the term used by Eichengreen, Hausmann and Panizza (2003).

²Banco Votorantim, the financial arm of Brazil’s largest industrial group, issued an 18-month \$75 million equivalent external real bond in late November at a yield of 18.5 percent. Unibanco followed shortly thereafter with a similar 18-month \$75 million equivalent external real bond at 17.9 percent. These were followed by two additional three-year real-linked bonds, one by ABN Amro (\$75 million at 17.9 percent) and another by Banco Bradesco (\$100 million equivalent at 17.5 percent). The government of Colombia issued in February 2005 another \$300 million equivalent of peso-denominated global bonds maturing in 2015.

risk for the investor, but transfers the exchange rate risk from the sovereign to the creditor.

- It reduces the mismatch between assets in pesos and liabilities in dollars on the government's balance sheet, one of the main consequences of original sin, and reduces the share of dollar debt in GDP, thus reducing the sensitivity of the debt-to-GDP ratio with respect to changes in the exchange rate.
- It reduces the effect that short-term capital inflows may have on the volatility of the local government debt market.
- It allows the government to diversify the investor base for investors who are interested in Colombian local currency debt but unwilling or unable to undergo the complicated procedures for buying local paper. The 50 basis point interest rate discount on the global bonds represents the tangible benefit to the government of widening the investor base.
- The bond may provide a benchmark for corporate issuers considering similar operations.

How far does the bond go in solving the problem of original sin? An important source of original sin, according to Eichengreen, Hausmann, and Panizza (2003), is the lack of liquidity in small country currencies. Investors prefer dollars, euros, or yen because they can be used around the world as a means of exchange. Thus, a country's ability to issue bonds in its own currency may depend fundamentally on its size in the international market. While liquidity may still be a concern for some investors, the significance of Colombia's issue lies in the fact that it was able to place an international bond in local currency in spite of the fact that no previous market existed in these bonds and that their liquidity in secondary markets is low. This suggests that a lack of liquidity may not be an insur-

mountable barrier for emerging markets attempting to overcome original sin.

Another aspect of original sin is the inherently volatile nature of emerging financial markets. Even with exemplary policies, emerging market countries tend to be small, relatively open, and subject to external current or capital account shocks. These shocks tend to have large effects on the exchange rate, domestic interest rates, prices, and output, and thus on the ability of the sovereign to service its debt.

Colombia's ability to issue local currency bonds without protection for exchange rate risk reflects the country's improved macroeconomic policy environment, which augurs well for its continued stability and growth. But it is also a reflection of the current external environment for emerging markets, which is extraordinarily favorable. The widespread perception that the dollar is set to decline against major currencies over the medium term is also an important factor in the investors' decisions.

Despite Colombia's success, it is unlikely that local currency bonds for emerging market countries will become a standard part of investors' portfolios soon. They remain specialized instruments for those willing to take exposure on particular local currencies, with knowledge of the local conditions that influence those currencies. In addition, they cannot correct for the fact that emerging markets live in a volatile economic and financial environment. The fact that Colombia's bonds have met with high demand indicates that investors expect the country's policy frameworks and credit conditions to remain stable for some years to come. But it is also a reflection of the extraordinarily favorable environment for emerging market debt and the unprecedented search for yield by foreign investors in local markets that existed in 2004.

tility in natural gas is seasonal, induced by limited storage facilities and peak demand during winter heating season. However, investors in natural gas anticipate price increases, comparable to (or greater than)

those expected for crude oil in the medium term, as demand for environmentally superior energy sources, such as natural gas, continues to outpace the growth of supply and distribution capacity.

Box 2.7. Distance-to-Default Measures of Bank Soundness

Banking sector soundness can be gauged by distance-to-default (DD) measures derived from the information contained in bank equity prices. In a standard valuation model, DD measure is determined by (1) the market value of a firm's assets, V_A , a measure of the present value of the future free cash flows produced by the firm's assets; (2) the uncertainty or volatility of the asset value (risk), σ_A ; and (3) the degree of leverage or the extent of the firm's contractual liabilities, measured as the book value of liabilities at time t , D_t (with maturity T), relative to the market value of assets.

Distance to default measure is computed as the sum of the ratio of the estimated current value of assets to debt and the return on the market value of assets, divided by the volatility of assets. The formula is given by

$$DD_t = \frac{\ln(V_{A,t}/D_t) + (\mu - 1/2\sigma_A^2)T}{\sigma_A\sqrt{T}},$$

where μ measures the mean growth of V_A .

Using market data of equity and annual accounting data, the market value V_A and the volatility of assets σ_A are typically estimated using Black and Scholes (1973) and Merton (1974) options pricing model. The DD measure therefore broadly captures the prospects for bank insolvency. A higher DD indicates reduced chances of a bank's insolvency and an improvement in financial soundness, although the measure is sensitive to underlying assumptions.

For simplicity, in this exercise, the value of assets is estimated to be equal to the sum of the market value of equity and the book value of debt. Distance-to-default measures are computed daily for the portfolio of systemically important banks in each country, making up for the majority of the country's banking system equity. The DD indicators are then indexed, with the first day of year 2000 as the base.

Investors and industry analysts have noted that, during 2004, market volatility was heightened by the frequent revisions of global demand estimates, and the paucity of data on supplies of crude oil. The lack of accurate and timely data causes financial markets to become vulnerable to information shocks. This may be particularly true when the perceived gap between global supply and demand is relatively small, as it is in the oil markets today, and geopolitical uncertainties are relatively high, especially in energy-producing countries.

Energy Investors

Recent investors in energy markets (e.g., pension and hedge funds) represent a variety

of investment horizons and objectives. For example, some institutional investors, such as pension funds, have sought to diversify their portfolios into a variety of alternative investments, including commodities, seeking assets that are less correlated to their largely long-only equity and bond portfolios. Such "non-commercial" investors are generally not considered speculators (see discussion below) and indeed are usually deemed highly desirable investors. Such investors often use index-related strategies, increasing the demand for short-dated futures contracts, which may cause additional upward pressure on prices at the margin.¹⁸

Macro hedge funds are among those that have generated flows into commodity markets.

¹⁸Much of the new capital invested by pension and hedge funds has been through index funds, frequently associated with indices such as the Goldman Sachs Commodity Index (GSCI), which are heavily weighted in energy-related products (e.g., the GSCI is weighted 66 percent in energy, with 25 percent of the energy component represented in crude oil).

These investors typically seek to arbitrage inefficiencies in market valuations, often arising from their perception of structural shifts in underlying fundamentals not yet recognized by broader market participants. Macro funds characteristically build positions before other investors recognize such trends (for example, entering in late 2002 and early 2003) and typically close or reduce positions ahead of other investors (for example, many macro funds reduced positions as WTI spot prices approached \$50 in October 2004). Many large global macro hedge funds are also registered with the Commodity Futures Trading Commission (CFTC) as commodity pools, and their investment style is typically characterized by market observers as one that contrasts with more specialized commodity trading firms (e.g., commodity pool operators (CPOs) and commodity trade advisors (CTAs)) that rely primarily on statistical and directional models. To be sure, many successful commodity investors, whether they are hedge funds or CPOs, combine elements from both of these investment styles.

In the wake of deregulation, specialized energy trading firms emerged as significant energy market participants, in addition to the more recent entry of investment firms purchasing power generation facilities (as discussed in the September 2004 GFSR). These energy traders are quite different from pure financial investors and investment banking firms who are also energy traders. Many are integrated power producers, active in arbitraging power markets throughout the supply chain, connecting inputs (e.g., oil, natural gas,

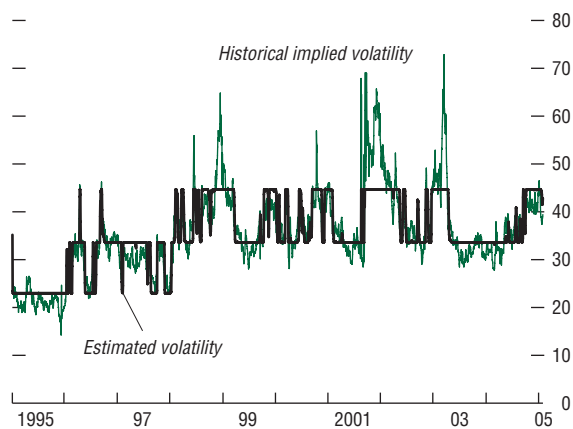
and coal) with commercial and retail energy outputs (e.g., electricity). Their comparative advantage comes from the ownership of power-generating plants and distribution networks, which provide natural long positions in various products along the energy supply chain, as well as superior market information.

Integrated power producers are able to arbitrage the liquid markets for hub delivery with less-liquid off-hub and OTC markets. A typical trade may involve selling electricity to an off-hub utility for its peak demand periods at a fixed price, and hedging this commitment (to some extent) with long positions in the forward market. They can commit to forward positions that exceed their own generating capacity by hedging in the forward markets (as far as five years out), and employing supplemental supply contracts from other power generators, based on their market and industry intelligence. Industry-specific knowledge, combined with portfolio management skills, is considered crucial for managing such trades, which involve both trading and operational risks.¹⁹ By owning power-generating facilities and other long positions in power, an integrated power company can participate in trades that are not feasible for financial firms (i.e., typical investment banks) or traders with smaller holdings of (hub-based) generating facilities (i.e., including those investment firms that have recently purchased power-generating assets). A variation on this trade is one where positions are established in the forward market for power (final outputs) that are in backwardation.²⁰ The forward prices appreciate as contracts mature for delivery in the

¹⁹Operational risks are amplified by the fact that electricity cannot be stored, and delivery requirements are complicated by limited transportation capabilities of regional power grids and by physically segmented markets (e.g., the West Coast U.S. electricity market is physically separated from central and eastern U.S. electricity markets by the Rocky Mountains).

²⁰Some energy markets, such as crude oil, exhibit backwardation most of the time. This is where spot prices are higher than futures prices, which get lower as the date of delivery moves farther into the future. Relatively higher spot prices reflect the “convenience yield” for holding inventories of (and extracting) oil today as a hedge against supply shortages in the future. (See Litzenberger and Rabinowitz, 1995, for a recently developed analytical framework that derives the necessary and sufficient conditions for futures prices to exhibit backwardation, which highlights the central role of uncertainty. Indeed, the Hotelling rule is shown to be a special case applicable in a world without uncertainty.)

Figure 2.45. West Texas Intermediate Crude Oil Futures Price Volatility
(In percent)



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

spot market. The most profitable part of this trade is the arbitrage between the liquid spot prices for hub delivery with prices in less-liquid off-hub locations.

Trading Activity and Price Volatility

Some observers identify “speculative” activity as contributing to market volatility and price movements. However, the only classification scheme that attempts to sort traders into speculative and nonspeculative categories, albeit imprecisely, is the CFTC report of large traders. As part of its market surveillance program, the CFTC classifies traders into two main categories, noncommercial and commercial traders. Commercial traders are the larger of the two, and consist of companies “engaged in business activities hedged by the use of the futures or options markets.”²¹ However, in the view of many experienced commodity investors and traders, changes in the positions of commercial and noncommercial traders do not provide an accurate picture of nonspeculative and speculative activities, respectively. This market belief has been supported by the following: (1) the CFTC data on noncommercial and commercial positions are viewed as only approximations for speculative and nonspeculative activities; (2) it is increasingly difficult to distinguish or categorize investors in the energy markets, especially when, for example, financial firms have purchased physical energy generating assets; and (3) many noncommercial players are known to be long-term investors and should not be considered speculators (e.g., pension funds generally invest

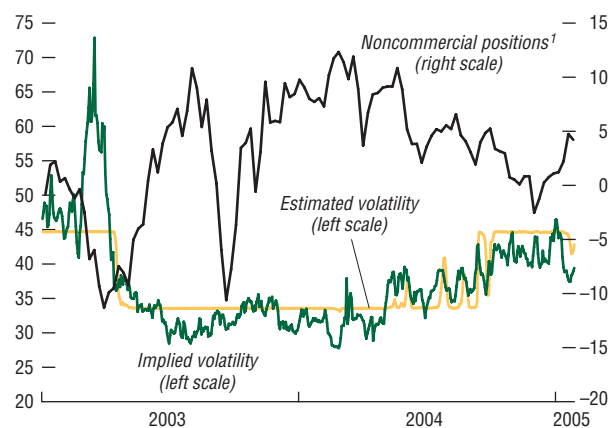
²¹The aggregate of all large-traders’ positions reported to the CFTC usually represents 70–90 percent of the total open interest in any given market. Data for February 1, 2005 indicated that commercial traders held 67.1 percent of the open long positions, but also 69.2 percent of the short positions in crude oil futures on the NYMEX. Market participants have observed that commercial traders occasionally take speculative short-term positions, particularly during periods of larger price swings.

with long-term objectives and only change their allocations infrequently).

Notwithstanding reports that noncommercial traders contribute to price volatility, there is little evidence to support this view. In recent periods, implied volatility in crude oil futures prices has risen since mid-October 2004 to a plateau just beyond the upper end of its historic range of 35–46 percent, after having been generally range-bound since 2000 (Figure 2.45).²² However, during this latter period, total open interest and long positions of noncommercial traders declined (Figure 2.46). Indeed, since mid-2004, when noncommercial traders were generally reducing their long positions, implied volatility in oil futures prices either remained in their estimated “middle state” or rose to a higher state. Consequently, apart from transitory jumps, there is little or no evidence of a sustained or trend increase in volatility associated with increases in long positions held by noncommercial traders.

Industry analysts have emphasized that infrastructure investment plans are highly influenced by the perceived “permanence” of oil price increases. Analysts have observed that infrastructure investments of large E&P oil companies depend primarily on whether or not they believe oil price changes will persist, since such investments may not become productive for several years. Infrastructure investment plans are generally not affected by volatility related to transitory oil price fluctuations, unless it also changes perceptions about the permanence or size of oil price changes. By contrast, financial investments may or may not be affected significantly by a rise in price volatility, which under some circumstances may be beneficial for some financial invest-

Figure 2.46. Implied Volatility of Oil Futures Prices and Crude Oil Positions of Noncommercial Traders
(In percent)



Sources: Bloomberg L.P.; and IMF staff estimates.
¹Long positions as a percentage of total open interest.

²²A three-state statistical model was estimated to test whether volatility has recently increased. Our estimates indicate that implied volatility for WTI oil futures was generally close to the historic average during the period when noncommercial open interest rose sharply, and oil prices peaked (April 2003 through the first half of October 2004).

ments.²³ In any event, market participants have noted that certain forms or sources of price volatility may curtail investment. For example, some noncommercial traders report having reduced their energy market positions during 2004 because of increased intraday volatility and price gapping (e.g., discontinuous jumps in bid and ask prices), which made it increasingly difficult to execute market orders in an efficient manner or at a desired price.²⁴

Summary and Conclusions

Market participants believe structural changes have been the primary influence on oil price increases during the past year. Investor perceptions of bottlenecks and relatively tight capacity in the production, refining, and distribution of key energy products are likely to continue until new investments in infrastructure come online, or demand persists at lower levels. Investors also frequently cite the increased potential for supply disruptions, not only from geopolitical uncertainties but also from the more challenging and costly techniques to develop and deliver energy.

Investors have increasingly sought more diversified investment portfolios, including commodities. As perceptions of tight capacity persist, new investments will likely continue in the energy markets. Pension and hedge fund investors have often utilized indexed funds, whose constituents were largely represented by energy futures contracts. Nevertheless, the recent rise in implied futures market volatility has been within historical ranges, which sug-

gests there is little evidence of a sustained increase in volatility attributable to speculative behavior or the expanding energy-related financial markets.

Surveillance in these markets would be improved with more timely and reliable data on global demand and supply conditions. As spare capacity in energy markets diminishes, in reality or perception, markets may become more vulnerable to overshooting. As such, those charged with providing projections of global and local energy market conditions may consider publishing the degree of uncertainty associated with their point estimates to assist market understanding of relative supply and demand conditions.

Hedge Funds: An Update

Growth and Performance

Hedge funds have continued to receive significant investment flows, as institutional investors globally continue to search for diversification and higher returns. Assets under management by hedge funds grew by about 20 percent globally in 2004, approaching the \$1 trillion level. Notably, according to research by Greenwich Associates, during 2003–2004, the percentage of institutional accounts investing in hedge funds jumped from 18 to 40 percent in Japan, with most of the increase in equity-related hedge funds. In Asia, more generally, assets under management doubled in 2004 from 2003, to an estimated \$60 billion.²⁵ In Europe, the share of

²³For example, a modest rise in implied volatility of crude oil futures prices would change the profile of prices for crude oil futures contracts in a predictable manner. Indeed, investors in shorter-dated futures contracts plan their investments knowing that volatility has the largest impact on the near-dated contracts; shorter-dated futures contracts are generally the most liquid and most volatile. This is sometimes referred to as the Samuelson effect (i.e., volatility is higher at the front end of the futures curve, and declines as the contract and time to maturity lengthens).

²⁴Use of an electronic trading system rather than an open outcry exchange was suggested by several market participants and observers as a way to reduce intraday volatility and price gapping, even though local traders in an open outcry system may account for half of the intraday volume, and are acknowledged by many observers to be an important source of market liquidity.

²⁵The relatively less-developed local markets in the region, and their relatively higher volatility, create opportunities for many hedge funds, but have also restricted them from offering the full range of strategies found elsewhere. As a result, smaller hedge funds (often less than \$50 million in assets under management) are typical in Asia, and long/short equity and multistrategy funds tend to dominate in Asia.

Table 2.3. Recent Inflows, Performance, and Leverage of Hedge Funds

Strategy	2004			2003		
	Estimated Share of New Investments (In percent)	Range of Estimated Returns (Net of fees)	Asset-Weighted Average Leverage	Estimated Share of New Investments (In percent)	Range of Estimated Returns (Net of fees)	Asset-Weighted Average Leverage
Long/short equity (directional)	24.2	11–13	1.1	9.5	38–52	2.9
Mortgage-backed securities	14.8	7–14	4.1	4.5	6–8	4.3
Global macro	10.4	3–4	2.8	13.5	20–21	2.4
Equity hedge	7.7	7–7.5	1.4	2.1	21–23	1.4
High yield	7.4	3.5–10	3.4	3.9	9–13.5	3.3
Emerging markets	7.2	14–19	1.4	6.3	39–41	1.4
Fixed-income arbitrage	7.0	3–6	8.4	4.0	12–19	2.1
Fixed-income diversified	5.3	4.5–6	9.4	21.8	11.5–12	8.3
Distressed securities	1.6	15–19	1.2	9.5	30–34.5	1.2

Sources: Van Hedge Fund Advisors International; Hedge Fund Research; Centre for International Securities and Derivatives Markets; and IMF staff estimates.

institutional investors participating in hedge funds, usually through funds of hedge funds, has grown from 23 to 32 percent. By comparison, the growth of U.S. institutional investors was relatively slower (28 percent used hedge funds in 2004, compared with 23 percent in 2003). However, the absolute size of allocations by U.S. institutional investors was larger than those by investors in Europe and Japan.

Investor flows during 2004 were directed toward the best performing strategies of 2003, which generally failed to repeat their strong performance (Table 2.3). Directional equity and fixed-income strategies approximated the return of the major equity and fixed-income benchmark indices. The more directional equity strategies returned 11–13 percent in 2004, less than one-third of the returns they achieved in 2003. However, these funds attracted close to 25 percent of new hedge funds investments in 2004, compared with less than 10 percent in 2003. Macro funds, which received more than 10 percent of new investment in 2004, also failed to repeat their strong performance of the previous year. Among fixed-income strategies, investors moved from diversified funds to high-yield, arbitrage funds and mortgage-backed securi-

ties funds (MBS), with contrasting benefits. Emerging market funds were among the best performers in 2003 and 2004, but did not experience a significant increase in investment. Despite posting a strong performance in 2003, distressed debt strategies also failed to attract new investment in 2004, and again outperformed most other strategies.²⁶

Leverage appears to have remained largely unchanged for most strategies during 2004. However, leverage appears to have increased among hedge funds pursuing fixed-income strategies, which we previously identified as typically more leveraged than other strategies. Industry observers have noted that the higher leverage employed by fixed-income funds likely represents an effort to maintain higher returns despite narrowing credit spreads (particularly for newer investment flows).

The “institutionalization” of the hedge fund industry was highlighted in the September 2004 GFSR. The growing presence of large banks and brokers in the hedge fund business has continued to develop. Some financial institutions have favored the acquisition of established hedge funds. Recently, BNP Paribas Asset Management merged its hedge fund group with Fauchier Partners, taking a

²⁶Activity in the distressed debt market seems to have been increasingly dominated by hedge funds in recent periods; according to some market estimates, they represent up to 80 percent of trading in the secondary market.

majority stake in the new company; J.P. Morgan Chase took a majority stake in Highbridge Capital Management, and developed their hedge fund administration business, with the acquisition of Dublin-based Tranaut. Other participants, such as Citigroup, appear to favor building in-house hedge fund expertise, at least for a while.

Regulatory Developments

On October 26, 2004, the Securities and Exchange Commission (SEC) adopted Rule 203(b)(3)-2, requiring the registration of certain hedge fund advisers under the Investment Advisers Act of 1940. According to the rule, an adviser of a “private fund” managing \$30 million or more, for 15 clients or more, will be required to register with the SEC by February 2006. For the purpose of the new rule, the adviser is required to “look-through” the fund in order to determine the exact number of investors.²⁷ A private fund is defined as a fund exempt from SEC registration as an investment company, and allows investors to redeem their interests in the fund within two years.²⁸ Opinions are mixed as to whether the requirements of the Advisers Act of 1940 will provide investors and the SEC with better transparency into hedge fund activities. Ultimately, the initial and ongoing legal and internal costs associated with registration and compliance with the Advisers Act may also represent a barrier to entry for new/smaller funds.

In various continental European countries, the regulatory framework has been amended

to facilitate the development hedge funds, including funds of hedge funds (FOFs) for retail investors. In Germany, the Investment Modernization Act, enacted on January 1, 2004, provided the legal framework for the development of domestic (and the distribution of foreign) hedge funds and FOFs; while shares of FOFs can be distributed to individual investors without requiring a minimum investment, single hedge funds may be distributed only through private offerings or to institutional investors. However, the flow of funds into the industry has been viewed as disappointing. At the end of 2004, total assets under management with hedge funds and FOFs were estimated to be approximately €1 billion in Germany, significantly below the amount expected at the beginning of the year. In France, the regulatory framework for hedge funds was implemented in November 2004, with the adoption of rules providing for the development of new hedge fund vehicles.²⁹ The so-called contractual funds and ARIA/EL mutual funds (investment funds with reduced investment rules and the ability to employ more leverage) will be accessible to qualified investors and wealthier individuals.³⁰

In the United Kingdom, although the Financial Services Authority (FSA) has ruled out allowing the distribution of hedge fund products to retail investors, “Qualified Investor Schemes” (QISs), set up in April 2004, are expected to give eligible investors access to hedge fund type investments. The QISs can invest in derivatives markets, short

²⁷Since 1985, the SEC allowed an investment adviser to count an investment pool, such as a hedge fund, as a single client, irrespective of the effective number of investors in the fund. Advisers of funds of hedge funds are also required to “look-through” the funds, to the underlying clients. Similarly, offshore advisers are required to register with the SEC if they have 15 or more U.S. clients.

²⁸Most hedge funds have lock-up periods of less than two years, and hence will qualify as private funds. However, we are aware of longer lock-up periods by some hedge funds, particularly the largest and most successful funds, in response to current strong investor demand. Private equity funds are largely unaffected by these changes, as they usually impose lock-up periods of more than two years (e.g., often five or more years).

²⁹Rules for the development of funds of hedge funds were established in 2003.

³⁰These funds are, in theory, accessible to all investors: no minimum investment thresholds are set for “qualified” and institutional investors, whereas minimum investment thresholds for retail investors are defined in relation to their financial wealth and/or expertise (the minimum required investment declines with wealth and expertise), and depend on the riskiness of the fund (thresholds for contractual funds are higher than thresholds for ARIAs).

sell securities and use leverage, and are allowed to charge performance fees. However, their development has been impaired by the absence of a clear tax regime for such investment vehicles.

Summary

Despite relatively poor return performance in 2004 compared with 2003, new investments continued to flow into hedge funds, as investors, particularly institutional investors, sought diversification and less or uncorrelated risk-adjusted returns. As the hedge fund industry continues to grow, it is likely to “institutionalize” further, with major banks and brokers increasing their presence in these businesses and investment vehicles.

Accounting

The global trend toward convergence in accounting standards for financial institutions (as well as nonfinancial corporates), as described in the September 2004 GFSR, has continued to advance on several fronts. The United States and international accounting standards have moved closer together, while a growing number of countries have taken the International Financial Reporting Standards (IFRS) as a reference point or adopted them wholesale. Areas of particular importance, where more significant progress is needed and expected, include accounting for insurance firms and pension funds, and the treatment of financial derivatives.

A significant development at the beginning of 2005 has been the implementation in the European Union of the IFRS, promulgated by the International Accounting Standards Board (IASB).³¹ The adoption of the IFRS marks a significant convergence in accounting practice between the EU and the United States, as well as other countries. While generally acknowl-

edged as work in progress, the IFRS represent a promising move toward more uniform disclosure.

Much attention has centered on international accounting standard (IAS) 39 regarding the treatment of derivatives and other financial instruments. The standard represents a convergence with U.S. Generally Accepted Accounting Principles (GAAP), with extensive similarities between IAS 39 and the recently revised U.S. Financial Accounting Standard (FAS) 133. While the European Union adopted IAS 39 at the beginning of 2005, the version adopted includes two “carve outs,” at least for the moment.

One of the exceptions made by the EU to IAS 39 is in hedge accounting (particularly in relation to bank deposits). The deletions with respect to hedge accounting are primarily to allow (mainly continental European) banks to use demand deposits as a portfolio hedge for interest rate risk, which is prohibited by the full IAS 39. From the banks’ perspective, adoption of IAS 39 would introduce “artificial” earnings volatility.

Even critics of the carve out acknowledge the difficulty. Some observers note that banks and other financial institutions in the United States have addressed FASB rules (similar to the IAS 39 standard) on this issue by structuring derivatives on their balance sheets to neutralize the accounting impact of showing deposits at near-zero duration. In any case, such an adjustment may not be ideal, as it represents a financial position to accommodate an accounting-induced mismatch, raising again the question of accounting relative to economic reality, and the role of risk management.

The other EU exception is the application of fair value accounting to liabilities—the “full fair value option.” Concerns within the EU include prudential and regulatory worries by

³¹The adoption covered 32 International Accounting Standards and 5 new International Financial Reporting Standards. As of January 2005, 92 countries had either adopted IFRS or decided to allow the use of IFRS as an accounting framework.

various national authorities, concerns about financial stability, and some uncertainty as to whether financial institutions currently have the resources and data to assign fair values to many liabilities. EU authorities also note that the use of full fair value accounting for liabilities may conflict with current regulations in some member countries.

The absence of the option to measure financial liabilities at fair value affects some banks, insurers, and other companies that have economically matching portfolios of financial assets, liabilities, and derivatives. Some institutions had been hoping to use the fair value option to get a degree of natural offset, rather than having to work through the onerous requirements to qualify for hedge accounting. This is no longer possible. The effect of this carve out may be to increase reported earnings volatility.

Authorities in Japan, which has implemented some accounting reforms in recent years, have indicated that, while there is some resistance to the idea of full convergence toward the IFRS, there may already have been benefits to the reforms that have been put in place. Market practitioners believe these accounting reforms have contributed to bank efforts to address balance sheet issues, including nonperforming loans. In January 2005, the IASB and the Japanese accounting standards board announced a joint project aimed at reducing differences between the Japanese and IASB standards.

Although IAS 39 is generally regarded as comprehensive, the current version excludes “insurance contracts,” acknowledging that insurance firms face special difficulties in applying fair value accounting to their policy liabilities. In recognition of this difficulty, the IASB has adopted a two-step approach to setting insurance standards, with Phase I going into effect at the beginning of 2005, and Phase II expected to be implemented by the end of 2007. As such, until 2008, insurers will report assets but not liabilities at market value.

In addition to IAS 39, a revised version of IAS 19, which covers employee benefits, went into effect in the EU on January 1, 2005. As discussed in the September 2004 GFSR, the new version of IAS 19 requires employee pension funds to mark assets to market, but it permits the use of some smoothing mechanisms to limit fluctuations in liabilities. Due to the long duration of pension liabilities, moderate shifts in interest rates can have large effects on the present value of expected liabilities and therefore on solvency (to the extent that liability and asset durations are not matched). Smoothing mechanisms, such as those provided by IAS 19 and U.S. FAS 87, can reduce the impact of such market changes. IAS 19 has also provided for the use of high-grade corporate bond rates for discounting pension liabilities, as currently utilized by FASB regulations.

As it has with financial instruments and derivatives accounting under IAS 39, the United Kingdom has opted for more mark-to-market accounting on pension funds than most other countries. The United Kingdom’s revised FRS 17, which implements IAS 19, goes further in its reporting requirements, mandating fair value accounting for pension fund liabilities as well as assets, generally without smoothing. Similar to IAS 19, companies applying FRS 17 have the option of amortizing unexpected gains and losses over several years, rather than reporting them in their earnings statements. However, FRS 17 requires the full amount of shortfalls (or gains) from expected earnings to be reported in a separate Statement of Total Recognized Gains and Losses (STRGL). This option has now been included in the revised IAS 19. As the pro forma effects of FRS 17 have been disclosed in reports for several years, U.K. markets and investors have been prepared for the possible impact of FRS 17 on earnings, and many companies appear sanguine about the transition.

Proponents of the international accounting standards cite several potential benefits from

harmonization and convergence to “best practice.” It is maintained that international convergence will lead to sounder risk disclosure and better comparability of accounts. That, in turn, will increase the ability to raise capital globally, especially in major financial centers (particularly in the United States). It is also sometimes argued that convergence would lower the cost of capital for most firms. This last claim may be more debatable. On balance, the clearest benefits, as suggested above, may arise from comparable disclosure.

Market and Credit Risk Indicators for the Mature Market Financial System

This issue of the GFSR expands on our review of mature market financial systems with Market Risk Indicators (MRI) and Credit Risk Indicators (CRI). First, the MRI Index now attempts to capture institution-specific risks, measured as a share of market capitalization. Second, the credit risk analysis includes default probabilities associated with first-to-default baskets of CDSs on financial institutions. The set of financial institutions used in this analysis is the same as defined in the September 2004 GFSR, with the exception of Bank One, now part of the J.P. Morgan Chase Group.³² Finally, risk indices for the life insurance sector are introduced.

Banking Groups

Consolidation in the banking sector has produced several large and complex financial institutions (LCFIs). Among the large global banks, some are engaged in investment banking, while others focus more on commercial and retail banking activities.

Some observers argue that the diversified set of activities in which LCFIs are involved represents a natural hedge against possible shocks, and allows them to act as a dependable and efficient intermediary of savings and investment, a key activity for a healthy financial system (see Corrigan, 2004; and Kwan and Laderman, 1999). Many LCFIs have a substantial retail component in their business mix, which may act to offset the volatility of earnings from other lines of business, such as corporate lending or capital markets activities (Azarchs, 2004).

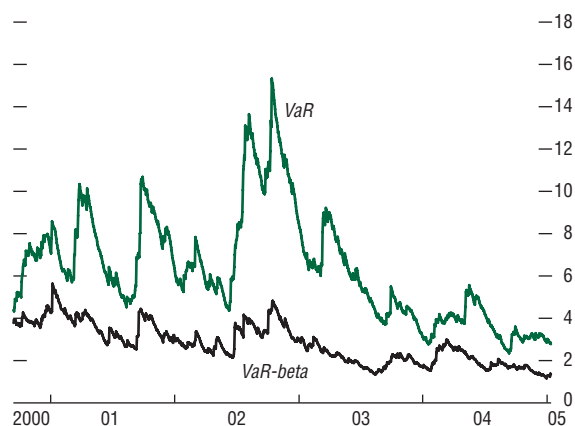
In any case, the operational complexity of these institutions may make them more difficult to manage and monitor than smaller deposit-taking units, given the various sources of business and market risk the management team must address (De Ferrari and Palmer, 2001). In addition, because of their large size and often their global reach, they may more significantly affect financial stability in the case of an adverse market shock. The following analysis will try to highlight the distinct behavior of LCFIs and commercial banks according to different risk measures under various market conditions.

Market Indicators

The following MRI attempt to highlight the specific risks related to a particular institution, since we factor out the effects of world and domestic market volatility from the original equity data (Hawkesby, Marsh, and Stevens, forthcoming). A comparison between the current (VaR-beta) and the September 2004 MRI (VaR) for the complete portfolio of banks as defined above may explain the impact of gen-

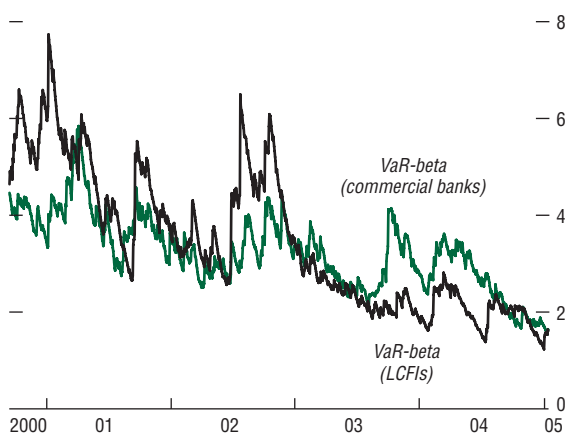
³²The definition of LCFIs is the same as applied by the Bank of England in the *Financial Stability Review*, December 2003, and comprises ABN Amro, Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse Group, Deutsche Bank, Goldman Sachs, HSBC Holdings, J.P. Morgan Chase, Lehman Brothers, Merrill Lynch, Morgan Stanley, Société Générale, and UBS. The commercial banks selected for our portfolio are Australia and New Zealand Banking Group, Banca Intesa, Banco Bilbao Vizcaya Argentaria, Bank of East Asia, Bank of Nova Scotia, CIBC, Commerzbank, Crédit Agricole, Development Bank of Singapore, HBOS, HVB Group, 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.

Figure 2.47. Value at Risk (VaR) for Complete Portfolio of Banks: Total VaR and VaR Without World Market and Local Market Effects (VaR-Beta)
(In percent)



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

Figure 2.48. Bank and LCFI Portfolios: Value at Risk Without World Market and Local Market Effects (VaR-Beta)¹
(In percent)



Sources: Bloomberg L.P.; and IMF staff estimates.
¹LCFIs are large complex financial institutions.

eral market dynamics on MRI, and highlight firm-specific risk factors (Figure 2.47).

Clearly, world and local market conditions have a significant influence on the institutions in our portfolio, often contributing as much as, and sometimes more than, the institution's individual risk to total value at risk (VaR). Once the broad market effects are removed, the major events represented in the data, and discussed in the September 2004 GFSR, still stand out, but with a different ranking in terms of their relative impact or importance.

For example, the equity market decline in early 2001 had the greatest influence on the risk profile of the full portfolio of institutions, especially on LCFIs (Figure 2.48). The surge in volatility related to September 11 and the credit events of 2002 were almost entirely because of overall market movements, while financial sector/bank-specific factors played a more minor role. Uncertainty regarding the evolution of U.S. monetary policy, which surfaced in late 2003, had a much greater influence on commercial banks, possibly because of their perceived higher sensitivity to interest rate risk.

Focusing on bank-specific factors, the VaR profile of Japanese banks shows two significant events when market perceptions of bank creditworthiness became more pessimistic. The two peaks in bank value at risk were observed in October 2002 and the last quarter of 2003 (Figure 2.49). The former is associated with heightened concerns about bank creditworthiness due to the announcement of a far-reaching bank reform plan by the FSA aimed at reducing by half major banks' non-performing loan ratio to approximately 4 percent by March 2005. The second is associated with the market's reaction to the failure of a large regional bank.

Increased diversification, as measured by the ratio between diversified and undiversified VaR, reduces the potential impact of external shocks on the financial sector. After eliminating the broad market effects, our diversification measure becomes higher and more stable

(Figure 2.50). In fact, wide equity market movements, such as the ones experienced from 2000 to 2002, tend to dominate bank-specific dynamics, simultaneously driving all equity prices in one direction and reducing the degree of diversification.

In our portfolio, the diversification measure does not differ much between commercial banks and LCFIs. In May 2004, in relation to the FOMC meeting that signaled the intention to increase short-term official rates, the overall diversification index shows a sudden drop. Even though such a move by the U.S. Federal Reserve had been anticipated, the elimination of the residual uncertainty prompted a discrete unidirectional adjustment of positions. As highlighted in the September 2004 GFSR, the current relatively low level of the overall diversification index indicates a certain vulnerability of the financial sector to a market shock.

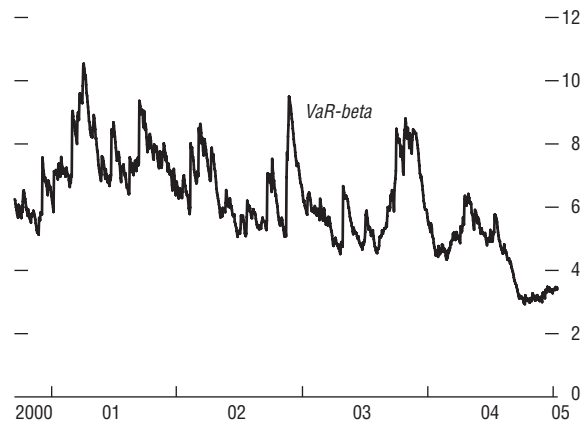
Credit Risk Indicators

The large reduction in credit spreads and low volatility levels observed over the last two years has led market participants to question whether risks from increasingly leveraged positions are building or are possibly understated. Therefore, more attention has been paid to different measures of credit risk.

One widely used measure is “distance to default,” which indicates the number of standard deviations the asset value of a certain institution is away from default.³³ However, a major shortcoming of this measure is that it does not account for changes in default correlations among different institutions, as may likely be the case from a general market shock. Also, especially in a low credit spread environment, policymakers may wish to stress test risk indices or indicators, an exercise that is not easy to implement using distance to default.

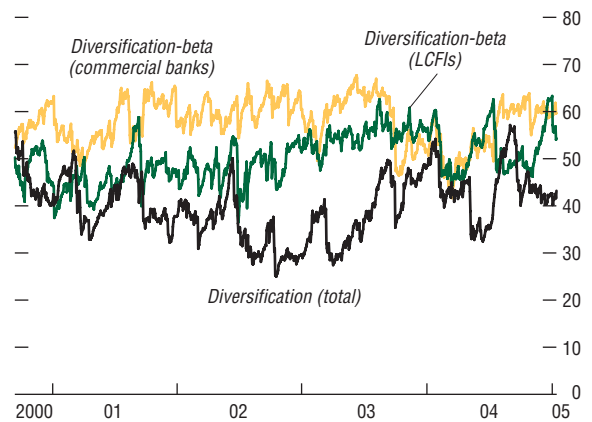
³³See Duffie and Singleton (2003); Bank of England (2004); and European Central Bank (2004).

Figure 2.49. Japanese Banks: Value at Risk (VaR) Without World Market and Local Market Effects (VaR-Beta)
(In percent)



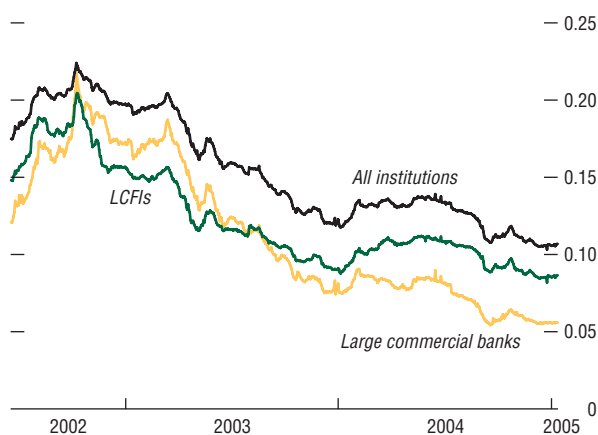
Sources: Bloomberg L.P.; and IMF staff estimates.

Figure 2.50. Total Diversification Effect and Diversification Without Market Effects (Diversification-Beta) for LCFIs and Commercial Banks¹
(In percent)



Sources: Bloomberg L.P.; and IMF staff estimates.
¹LCFIs are large complex financial institutions.

Figure 2.51. Probability of Observing a Default Over a Two-Year Period



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

One way to account for the correlation of defaults is by estimating the first-to-default (FTD) probability from a basket of CDSs on LCFIs and large commercial banks.³⁴ In particular, we monitor the evolution of the FTD probability up to a two-year horizon (see Box 2.4). This approach may be useful for bank supervisors who oversee large and complex institutions in order to identify common or emerging weaknesses among a group of (similar) institutions (DeFerrari and Palmer, 2001).

In our data set, which starts in July 2002, the credit outlook has improved steadily from October 2002, as the probability of observing a single default has greatly diminished (Figure 2.51). During this period, the term structure of default probabilities from the three-month to the five-year maturities has flattened, indicating that the market perceives the recent favorable credit environment as rather stable. However, expectations of possibly aggressive interest rate policy actions from the U.S. Federal Reserve (November 2003–June 2004) had some influence on default probabilities. Throughout this period, LCFIs demonstrated a higher sensitivity than the subset of commercial banks we are using in this analysis.

We also conducted a stress test to evaluate the response of default probabilities to a substantial and sudden worsening of the credit environment. To do so, we chose the worst 10 percent cases from the distribution of all possible scenarios (Gibson, 2004). In this case, the probability of observing a default in the group of all financial institutions (i.e., the portfolio of commercial banks and LCFIs) over a one-year period, in fact, rises from 7 to 22 percent, and on a two-year horizon, from 11 to 33 percent. For LCFIs, the probability of

³⁴The institutions analyzed include the LCFIs and nine other large banks within our portfolio for which CDSs quotations were available: Commerzbank, Crédit Agricole, HVB Group, Royal Bank of Scotland, Sanpaolo IMI, Santander Hispano Group, UFJ Holdings, UniCredito, and Wachovia.

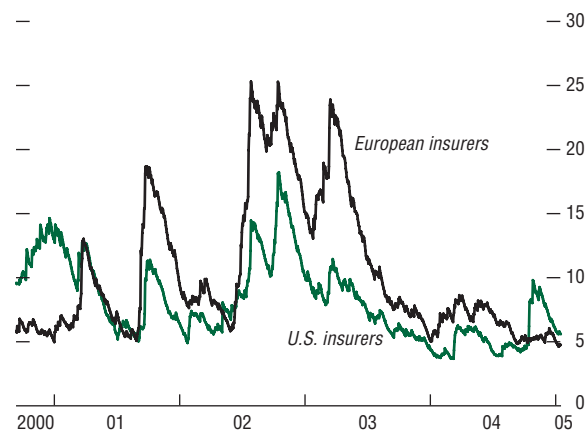
observing a default increases from 6 to 16 percent over a one-year horizon, while for commercial banks the probability rises from 3 to 9 percent. Based on this analysis, as well as other studies, it would be difficult to draw significant conclusions on the relative stability or resiliency of LCFIs and large commercial banks. We intend to continue developing the analysis and monitoring activity in upcoming issues of the GFSR.

Insurance Sector

Market Risk Indicators

Insurance companies' relevance to financial stability considerations has often been debated, but it may have increased in recent years because of the expanding volume of complex financial transactions in which they participate (CDSs, CDOs, long-dated swaps, longevity risk, reinsurance, etc.). Insurers can be distinguished according to the line of business in which they are active: life insurance, property and casualty insurance, and reinsurance. Each of these different subgroups, because of the specific asset and liability structure of their businesses, require a somewhat different and specific analysis. For the time being, we have concentrated on life insurance companies, because of the extent of their investment activities, relative balance sheet size, and thus their relevance to the broader financial system, as highlighted in the April 2004 GFSR.³⁵ As also discussed in Chapter III of the GFSR, the structure of solvency regimes, together with the risk management practices of different institutions, result in different responsiveness to market events. In particular, the relatively larger equity holdings by European insurance companies appear to have translated into a higher sensitivity to

Figure 2.52. Insurance Portfolio Value at Risk (VaR)
(In percent)



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

³⁵The firms included in the sample are Aegon, Aviva, AXA, Friends Provident, Hartford, Irish Life, Legal & General, Metlife, Prudential Financial, Prudential PLC, and Swiss Life.

broad market events than their U.S. peer group has.

Our market risk indicator shows that the risk profile of U.S. life insurers is markedly different from European life insurers, especially before mid-year 2002 (Figure 2.52). The credit events of 2001 and 2002 (i.e., the September 11 incident and several large corporate bankruptcies related to fraud, respectively) were broadly manifest in the equity markets. However, the impact of these events on the U.S. life insurers was short lived, in part because of the insurers' relatively larger holdings of credit rather than equity. By contrast, European insurers have a much larger share of their assets concentrated in equities. Our indicators provide supporting evidence about the market participants' greater concerns about the creditworthiness of the European companies compared with their U.S. counterparts following these events.

Finally, the October 2004 announcement by New York Attorney General Eliot Spitzer regarding his investigation of the relationship between insurance companies and brokers had a very strong influence on U.S. insurers' equity volatilities, which has by now almost completely dissipated.

Credit Risk Indicators

The amount of information available in the credit derivative markets for individual insurance companies is still very limited, as market quotes for many of the companies in our portfolio started only in mid-2003. Nonetheless, even in this relatively short period, it is possible to detect a spread reduction, indicating that the insurance sector is also benefiting from an improvement in the general credit outlook. As the credit derivative market provides greater opportunities for analysis, we will expand our review of the insurance sector.

Conclusions

Since the publication of the September 2004 GFSR, the financial market indicators

reflect a continued decline in market volatility and the market's perception of risk, albeit only slightly. Nonetheless, both VaR analysis and evidence from stress testing on the probability of a first-to-default basket of banks and LCFIs indicate that severe market-wide credit events could have a very significant impact on financial institutions. This suggests that while the soundness of an individual financial institution is of course important to supervisors, increasing attention should also be paid to monitor and detect stress situations developing in the wider financial system.

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