the scale of such flows is also consistent with the view that the United States is playing the role of a global intermediary: it attracts international capital by providing relatively safe, liquid instruments (U.S. government and high-grade corporate debt securities) at relatively high returns and then reinvests them through international markets in less liquid vehicles for higher returns.\footnote{In the 1960s, Kindleberger (1965) argued the United States played the role of international banker, selling liquid, short-term obligations to nonresidents and buying longer-term claims against them. Triffin (1966) claimed U.S. short-term dollar liabilities to nonresidents were too large relative to the U.S. gold reserve, a view that led to the establishment of the SDR. It is also consistent with the view that capital markets have become more globally integrated. According to Feldstein and Horioka (1980), in an integrated global capital market, domestic savings and domestic investment will be uncorrelated. For a survey see Goldstein and Mussa (1993).} A rationale for this role is that U.S.-based institutional investors and global financial institutions are generally perceived as possessing advanced knowledge, expertise, and global reach in placing funds in the higher-yielding markets around the world.

Large differentials between U.S. and German and between U.S. and Japanese interest rates were a key factor driving the large flows into U.S. markets and in the dollar’s strength. At the same time that interest rates remained low and even declined throughout Europe and Japan, monetary conditions began to tighten in the United States as market participants became concerned that economic activity continued to increase relative to estimates of U.S. capacity output. The Federal Reserve’s 25 basis point increase in the federal funds rate in late March 1997 widened the differentials even further. In effect, the combination of asynchronous business cycles and divergent monetary conditions accounted for the relatively wide spreads.

---

Figure 1. Spot Exchange Rates

(Local currency/U.S. dollar)

![Graph of Spot Exchange Rates](image)

Source: Bloomberg Financial Markets L.P.
rates stood at 250 basis points at end-May 1997. Spreads between yen- and dollar-denominated bonds have been particularly large: long-term spreads have been in the range of 300–500 basis points since mid-1995, averaging about 420 basis points in May 1997, and short-term spreads have been in the range of 450–525 basis points, averaging about 510 basis points in May 1997. Large global macro hedge funds viewed the relatively wide yen-dollar interest rate spread as a potentially lucrative trading opportunity. They presumed that the Bank of Japan did not want the yen to strengthen in 1996–97 and preferred not to raise interest rates in light of the continuing cyclical weakness as well as concerns over the loan books of Japanese banks and the banks’ relatively large exposure to interest rate risk. If expectations about the yen-dollar rate and yen interest rates proved correct, then borrowing cheaply in yen, selling yen for dollars, and lending the proceeds to the U.S. Treasury would generate a net profit equal to the sizable interest rate differential. While Japanese banks reduced total cross-border positions by $20 billion in 1996, they increased lending to nonbank entities in the Cayman Islands—a home for some major hedge funds—by almost $19 billion. On the other side of the ledger, entities in the Cayman Islands accumulated $20 billion of U.S. long-term bonds in 1996. These yen-carry trades were even more profitable than anticipated because the yen depreciated in 1996 and the first four months of 1997.

A second factor boosting flows into U.S. markets was a diversification out of instruments denominated in yen and deutsche mark, in part reflecting a precautionary move to avoid risks associated with uncer-

(Figure 2). U.S. interest rate differentials with Germany have been most significant at the shorter end of the maturity spectrum: the spread on three-month

Table 1. Net Foreign Purchases of U.S. Bonds
(In millions of U.S. dollars)

<table>
<thead>
<tr>
<th></th>
<th>Government Bonds</th>
<th>Corporate Bonds</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>58,980</td>
<td>30,572</td>
<td>89,552</td>
</tr>
<tr>
<td>1994</td>
<td>100,481</td>
<td>37,992</td>
<td>138,473</td>
</tr>
<tr>
<td>1995</td>
<td>162,844</td>
<td>57,853</td>
<td>220,697</td>
</tr>
<tr>
<td>1996</td>
<td>293,685</td>
<td>77,978</td>
<td>371,663</td>
</tr>
</tbody>
</table>

Of which:

- Europe 137,148 56,194 193,342
- Germany 19,297 3,514 22,811
- United Kingdom 76,323 43,702 120,025
- Spain 18,421 462 18,883
- Asia 112,597 9,806 122,403
- Japan 48,985 6,099 55,084
- People’s Republic of China 17,209 257 17,466
- Hong Kong, China 15,281 1,737 17,018

1997:Q1 77,048 20,826 97,874


**Figure 2. United States, Japan, and Germany: Interest Rate Differentials**

(In basis points)

Source: International Monetary Fund.

1 Interest rates in Japan and Germany are subtracted from U.S. interest rates.

2 These data are from the Bank for International Settlements and the U.S. Department of Treasury, Treasury Bulletin.
several EU currencies against the deutsche mark (Figure 3). The Finnish markka joined (October), and the Italian lira reentered (November), the exchange rate mechanism (ERM) of the European Monetary System in 1996. While both currencies strengthened upon entry, they have since lost these gains. The strongest currencies have been the pound sterling and the Irish pound, both of which have been supported by robust economic activity and expectations of rising interest rates. The Irish pound is the most appreciated currency in the ERM grid, having risen about 10 percent since mid-1996 above its central rate against the deutsche mark, and the pound sterling was the only major currency to appreciate against the dollar over the past 18 months.

Despite the large swings in the major currencies, month-to-month volatility in foreign exchange markets fell substantially in 1996, particularly for second-tier European currencies (Figure 4). A tangible effect of the drop in volatility has been a sharp drop in turnover in currency spot markets, and both of

Lower volatility has led to, and perhaps been supported by, increased activity in currency options (binary and range options), which allow investors to fine-tune exposures to the level, direction of change, and volatility of underlying asset prices.
these developments were associated with a scaling back of European foreign exchange trading and dealing operations.

Credit Markets: Spread Compression and Increased Volumes

Bond Markets

During the past twelve months, low and declining inflation, fiscal consolidation, ample international liquidity, and a stable international environment supported a global compression of interest rate spreads (relative to benchmark yield curves) and record levels of new issuance in both domestic and international bond markets. Low interest rates in Europe and Japan, and the global search for yields, facilitated capital flows into the United States and higher-yielding mature domestic bond markets outside of Europe (Canada, Australia, and New Zealand), into corporate bonds (Figures 5–7), and into emerging markets (see Chapter IV). The demand for higher-yielding domestic issues was broadly based geographically and included investors in the major European countries, Japan, and North America. In international markets, strong demand for dollar-denominated instruments raised the share of dollar issuance by more than 100 percent in 1996, whereas the shares of yen and deutsche mark issues dropped almost 80 percent and 40 percent, respectively.

Although substantial, the decline in interest rate spreads in the high-yield sectors stopped short of the low spreads reached as recently as 1994. Fears of a tightening of U.S. monetary policy caused periodic, temporary, retrenchments from U.S. bond markets (as with the large sell-off in early 1996). By late 1996, the extent of the narrowing of spreads in some segments of the higher-risk markets—notably the high-yield corporate sectors and selected emerging markets—raised concerns about spreads having narrowed beyond what was warranted by the fundamentals. In anticipation of a rise in U.S. interest rates, spreads widened modestly in most of the higher-yielding markets during the early months of 1997, and when the Federal Reserve eventually raised the federal funds
target rate by 25 basis points in late March 1997, the bond market reaction was muted.

In European bond markets, even though interest rate spreads have recently widened modestly, market participants have priced in a high probability of EMU going ahead in 1999 (Table 4). Spreads over deutsche mark yields peaked in early 1995 as a result of the flight-to-quality associated with the global bond market correction in 1994 and the Mexican crisis in 1994–95. The subsequent narrowing of intra-European spreads continued in 1996 as doubts about political and economic commitments to EMU dissipated, and monetary policy in Germany was further eased. In core Europe (Austria, Belgium, France, Germany, Luxembourg, and the Netherlands), where spreads were thin to begin with, French and Dutch long-term yields fell below deutsche mark yields by late 1996. Spreads in some other EU countries have been strongly influenced by fluctuations in the probability of EMU participation in 1999, displaying considerable sensitivity to news events. Against the German benchmark, the Italian 10-year yield spread narrowed about 350 basis points from early 1996 through the end of May 1997, Spanish spreads fell 300 basis points, and Swedish spreads fell 130 basis points. The United Kingdom is the notable exception to this convergence, a fact attributable to the unique U.K. cyclical position and perhaps to the uncertainty about U.K. participation in EMU.

In 1996, gains in total return indexes for European long-term bonds ranged from almost 50 percent in Italy to about 10–15 percent in core EU countries. Returns on aggressive convergence plays have been even higher. Convergence plays in the early 1990s typically exploited yield differentials in cash markets, whereas convergence plays in 1996 were executed largely through interbank swap markets, a tactic that avoids much of the capital outlay required to establish positions in cash markets. As a result, deutsche mark–denominated swap activity—the “pay side” of convergence plays—increased 44 percent in the first half of 1996 to $2.2 trillion. By late 1996, most of these convergence positions were reportedly unwound with the narrowing of spreads.

The compressed spreads in secondary markets created favorable conditions for issuance of debt securities in international and domestic markets in 1996. In international markets, the funds raised in debt securities markets slightly exceeded funds raised through newly announced syndicated lending facilities. Despite sluggish economic activity and fiscal consolidation in some advanced countries, record volumes of debt securities were issued in both international and domestic markets in 1996.  

5Bloomberg/EFFAS (European Federation of Financial Analyst Societies) 10-year government bond Total Return Indexes (coupons reinvested).

6A simple example is a cross-currency interest rate swap in which the investor makes a stream of interest payments denominated in deutsche mark in exchange for a stream of interest payments denominated in a higher-yielding currency. If the interest rate spread narrows before the contract maturity date, the investor effectively books a profit equal to the change in the spread times the months to maturity (see Annex II of the Background Material for details).
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domestic markets. In international markets, issuance increased by nearly 100 percent on strong demand for funds by U.S. corporations and by Dutch, German, U.K., and U.S. financial institutions (Table 5). Financial institutions accounted for two-thirds of this sharp increase, and U.S. corporations accounted for more than half of all issuance by nonfinancial corporations. In domestic markets, private issuance rose 10 percent, half of which occurred in U.S. domestic markets; most of the remaining issuance occurred in Germany, Italy, Japan, and the United Kingdom. Public issuance declined slightly.

(In basis points)

<table>
<thead>
<tr>
<th></th>
<th>Spot</th>
<th>January 1, 1999</th>
<th>January 1, 2000</th>
<th>January 1, 2001</th>
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<tbody>
<tr>
<td><strong>February 28, 1995</strong></td>
<td></td>
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<td></td>
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<tr>
<td>France</td>
<td>118</td>
<td>29</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>Italy</td>
<td>546</td>
<td>424</td>
<td>415</td>
<td>385</td>
</tr>
<tr>
<td>Spain</td>
<td>438</td>
<td>435</td>
<td>410</td>
<td>378</td>
</tr>
<tr>
<td>Sweden</td>
<td>319</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>204</td>
<td>165</td>
<td>157</td>
<td>143</td>
</tr>
<tr>
<td>European currency unit (ECU)</td>
<td>132</td>
<td>91</td>
<td>70</td>
<td>56</td>
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<tr>
<td><strong>January 30, 1997</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>France</td>
<td>15</td>
<td>–22</td>
<td>–29</td>
<td>–26</td>
</tr>
<tr>
<td>Italy</td>
<td>342</td>
<td>154</td>
<td>105</td>
<td>81</td>
</tr>
<tr>
<td>Spain</td>
<td>231</td>
<td>86</td>
<td>54</td>
<td>33</td>
</tr>
<tr>
<td>Sweden</td>
<td>111</td>
<td>137</td>
<td>131</td>
<td>112</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>370</td>
<td>293</td>
<td>211</td>
<td>146</td>
</tr>
<tr>
<td>ECU</td>
<td>87</td>
<td>6</td>
<td>10</td>
<td>–5</td>
</tr>
<tr>
<td><strong>May 31, 1997</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>39</td>
<td>–23</td>
<td>–28</td>
<td>–21</td>
</tr>
<tr>
<td>Italy</td>
<td>345</td>
<td>189</td>
<td>148</td>
<td>116</td>
</tr>
<tr>
<td>Spain</td>
<td>185</td>
<td>85</td>
<td>49</td>
<td>41</td>
</tr>
<tr>
<td>Sweden</td>
<td>144</td>
<td>173</td>
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<td>130</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>378</td>
<td>289</td>
<td>202</td>
<td>132</td>
</tr>
<tr>
<td>ECU</td>
<td>95</td>
<td>22</td>
<td>14</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: Bloomberg Financial Markets L.P.

1 Calculated based on the one-year forward rates embedded in the yield curve.
2 Based on the data for the first available day of the year.
Figure 8. Stock Market Indices: Major Industrial Countries
(Indices, January 1990 = 100)

Source: International Monetary Fund.

Figure 9. Stock Market Indices: Smaller European Countries¹
(Indices, January 1990 = 100)

- Belgium
  (BEL 20 Index)²
In local currency

- Finland
  (Helsinki Stock Exchange
  All Shares Index)
- Norway
  (OBX Stock Index)
In U.S. dollars

- Netherlands
  (Amsterdam Exchanges Index)
- Ireland
  (ISEQ Index)

- Spain
  (IBEX 35 Index)
- Switzerland
  (Swiss Market Index)

Sources: Bloomberg Financial Markets L.P.; Brussels Stock Exchange; International Monetary Fund; and The WEFA Group.
²January 1991 = 100.
years is the persistence of large inflows into U.S. equity mutual funds. Between January 1995 and April 1997, U.S. equity mutual funds were the recipients of $424 billion in new investments, and they currently manage $1.8 trillion. Mutual funds control 20 percent of the U.S. equity market capitalization, and they have a significant impact on prices, especially because they channel the bulk of new flows into U.S. equity markets.

Although improved profits help explain the rise in U.S. markets, price gains of the magnitude experienced in recent years have pushed some of the conventional valuation indicators into territory that has raised concerns of overvaluation (Figure 10). Dividend yields—currently about 2 percent—have fallen to historical lows and are about half their long-term average, and both the market-price-to-book ratio and the closely related Tobin’s q ratio are deviating from

Figure 10. United States: Equity Market Performance

Sources: Board of Governors of the Federal Reserve System; Bloomberg Financial Markets L.P.; and Standard & Poor’s.
The distribution estimated from prices on May 5 was symmetric—indicating equal likelihood associated with appreciations and depreciations of similar magnitude—and assigned relatively little probability to appreciations of the size experienced over the next two weeks. On this day, the market assigned less than 6 percent probability to the yen-dollar spot rate being below 115 in early September. On May 6, the yen appreciated 1 percent against the dollar. Between May 5 and May 6, the distribution (not shown) shifted to the left and began to exhibit some leftward skew—associating somewhat larger probabilities with large appreciations of the yen. Nonetheless, on May 6, the probability assigned to the yen-dollar rate being below 115 in early September was still less than 9 percent. Between May 6 and May 9, the yen appreciated from 125 ¥/$ to 120 ¥/$. By May 9, the distribution had shifted down along with the spot rate, and the skew had become much more pronounced. At this point the market was pricing into the options a significant probability of further large appreciations in the months ahead. By May 19, after the rate had fallen to near 115, the distribution had returned to a near-symmetric shape, but assigned roughly equal probability to yen-dollar rates within the range of 111 to 118.

Figure 11. Distribution for Yen/Dollar Exchange Rate in Early September 1997 Implied by Options Prices on May 5, 9, and 19, 1997

Sources: Bloomberg Financial Markets L.P.; and IMF staff calculations using data from the Chicago Mercantile Exchange.

Note: Spot exchange rates are shown in parentheses and indicated by vertical lines.
turity for sovereign issuers, which had fallen sharply in the wake of the Mexican crisis to 3.9 years, rose dramatically in 1996 to 9.8 years.

The favorable environment for emerging market borrowers in global bond markets prompted several sovereigns to launch issues to restructure existing liabilities at improved terms (such as Brady bond buybacks and the repayment by Mexico of obligations to the United States and the partial repayment of its obligations to the IMF), to reduce refinancing risk through an extension of maturities, to diversify their investor bases, and to set benchmarks for their corporate borrowers. This situation has also facilitated the entry of several first-time sovereign and corporate borrowers. Large individual deals included the $6 billion of floating-rate notes arranged by Mexico in July 1996, the largest single-tranche Eurobond ever. In November, Russia placed a $1 billion issue—the largest-ever debut sovereign issue—with booked demand reported to have exceeded $2 billion and priced well below expectations. In June 1997, Brazil sold $3 billion of 30-year bonds with $2.3 billion exchanged for Brady bonds. Moreover, several entities placed century (100-year maturity) bonds, including the People’s Republic of China, the Israel Electric Corporation, India’s Reliance Industries, and the Endesa Chile Overseas Company.

International placements of equity by emerging market entities rose during 1996 but remained subdued compared with the previous peak in 1993. American Depository Receipts (ADRs) and Global Depository Receipts (GDRs) continued to be the major instruments used to raise equity capital in the international markets, accounting for a little more than half the capital raised. Issuance by Asian entities rose slightly, to $9.8 billion, and continued to account for the major proportion of equity placements by emerging market countries. Latin American placements rebounded to $3.7 billion in 1996 but remained modest compared with previous years. Placements by entities in the transition economies have continued to grow, and companies from the region doubled their 1995 equity placements to reach $1.3 billion in 1996.

Although the share of commercial bank lending in total flows to emerging markets has declined in importance, such lending continues to be a substantial source of syndicated and structured finance—trade finance, project finance, and bridge finance—and a particularly significant source of funds in some regions. In contrast to 1995, when syndicated bank lending rose by more than 35 percent as the cost of borrowing on international bond and equity markets increased sharply in the wake of the Mexican crisis, syndicated lending rose by a modest 6 percent during 1996 to $79 billion. However, lending to Asian countries continued to grow robustly, increasing by 22 percent and accounting for the largest share of total syndicated bank lending—62 percent in 1996. The relatively higher reliance of the region on bank lending stems in part from the fact that many Asian borrowers are reportedly attracted to the syndicated loan markets because of the flexibility in structuring the drawdown, which is particularly useful in funding infrastructure investments. Lending to European emerging market countries also rose strongly, increasing by 9 percent, while loans extended to Latin America grew more modestly—by 5 percent—and declined for Africa and the Middle East. As interest rate margins on loans in industrial countries narrowed, competition between major international banks for higher-yielding loans to emerging markets intensified and resulted in smaller

---

23 Convertible bond issuance by Asian entities continued to account for a quarter of the region’s bond issuance during 1996, with Korean companies accounting for 40 percent of these issues.
of 1995 to 537 basis points by end-1996.\textsuperscript{25} Total returns on the EMBI reached 34 percent for 1996, compared with returns of 3 percent on the J.P. Morgan Government Bond Index for the United States. In early 1997, emerging market spreads continued to decline and by late February they had once again reached their historical lows of around 400 basis points. Since then yield spreads have fluctuated. As spreads on emerging market debt declined to their previous historical lows reached in late 1993 and early 1994, concern developed that the narrow spreads implied that risk was no longer being adequately priced. However, to put this concern in perspective, spreads on emerging market debt remained well above spreads on comparably rated corporates in the mature markets.

The growing volume of bond issuance by emerging market entities, matched by increased investor interest in emerging debt markets, led to a drastic increase in the turnover of such instruments which, after remaining relatively stable from 1994 to 1995, rose by 93 percent to $5.3 trillion in 1996. Brady bonds are the single most-traded emerging market debt instrument, with transactions during 1996 of $2.7 trillion. The sharp increases in turnover in Brady bonds (from $1 trillion in 1993 to $2.7 trillion in 1996) relative to a modest increase in the stock of such bonds suggests that there has been a substantial increase in their liquidity.

While the liquidity of emerging debt markets improved substantially during 1996, there still appear to be lingering market imperfections. For example, differential yield spreads between the Brady and Eurobond sectors endured, suggesting continued market segmentation. Spreads on Brady bonds have invariably exceeded those on Eurobonds and differentials have recently been of the order of 175–300 basis points. (See Annex I of the Background Material). While market participants have offered a number of explanations for these differentials, most are unconvincing. Some suggest a lack of investor sophistication and some a lack of liquidity.

While emerging equity markets have continued to recover since the 1995 Mexican crisis, 1996 was the first year since the boom of 1993 that these markets posted a collective positive annual return. Total dollar returns measured by the International Finance Corporation Investable (IFCI) Composite Index reached 9.4 percent.\textsuperscript{26} Relative to the mature markets, however, emerging equity markets continued to perform modestly. Returns were substantially higher, for example, on the U.S. S&P 500 index (23 percent). The relatively modest overall performances of emerging equity markets during 1996 masked divergent performance between and within regions. While Latin American equity markets rose by 17.2 percent and Asian markets by 10.5 percent, European, Middle Eastern, and African markets fell by 2.3 percent.

Returns on emerging equity markets accelerated in early 1997, with the IFCI Composite Index rising by 9.5 percent during the first quarter. In contrast to 1996, this collective return was well in excess of the increase in the S&P 500 of 2.7 percent during the period. Returns in Latin American markets continued at robust levels (15.1 percent), while returns in Asian markets fell off (1.2 percent), and returns in the European, Middle Eastern, and African region rose sharply (19.4 percent). Market participants indicated a continuing shift of investor sentiment away from Asia toward Latin America. This shift reflected the perception that the regional slowdown in Asia represented a more permanent adjustment to a lower longer-term growth path as the economies matured and that economic fundamentals in Latin America had improved—projections for growth were revised upward and inflation continued to moderate. Despite the recovery in emerging equity markets during 1996 and early 1997, at their recent peaks they remained below the highs reached in September 1994 prior to the Mexican crisis.

\textsuperscript{25}Since Brady bonds represent some of the most liquid emerging market bonds they are heavily weighted in the major emerging market bond indices. Furthermore, because Latin American issues represent a substantial proportion of outstanding Brady bonds, most of these indices largely reflect Latin American Brady debt. In the EMBI, for example, they receive a weight of 91 percent.

\textsuperscript{26}The International Finance Corporation’s Investable (IFCI) Composite Index, with 1,224 stocks in 26 emerging markets (at end-1996), is a broad index designed to measure returns on emerging market stocks that are legally and practically open to foreign portfolio investment. It is widely used as a benchmark for international portfolio management purposes and comprises regional indices for Asia (with a weight of 47 percent), Latin America (33 percent), and Europe, Middle East, and Africa (20 percent).
Figure 14. Emerging Markets: Sovereign Ratings and Fundamentals

<table>
<thead>
<tr>
<th>Legend</th>
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</thead>
<tbody>
<tr>
<td>YPC</td>
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</tr>
<tr>
<td>INF</td>
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<tr>
<td>I</td>
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<tr>
<td>S</td>
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<td>DS</td>
</tr>
<tr>
<td>RM</td>
</tr>
<tr>
<td>RX</td>
</tr>
</tbody>
</table>

Source: International Monetary Fund, World Economic Outlook.

1 See text explanation.
through forward intervention, the credit must come through either its money market operations or its standing facilities. In either case, the domestic currency provided by the banking system is a pass-through of credit from the central bank, which must be the ultimate counterparty in both legs of the position-balancing transactions of the banking system.

### Interest Rate Defense

In a crisis, a standard defense for the central bank is to raise interest rates to impose a squeeze on short sellers. Nevertheless, to the extent that it continues to lend, the central bank partly finances the attack by providing funds at a ceiling interest rate, as the demand for domestic credit increases. This standard interest rate defense is designed to raise the finance cost to speculators, prior to a possible devaluation, above their anticipated capital gains in the event of a devaluation, a situation that might force an eventual closing of the short positions.

### Derailing Speculative Attack Mechanics with Controls on Foreign Exchange Swaps

Unfortunately, the interest costs of a squeeze are imposed both on speculators and on agents who are short in the currency for commercial reasons; thus a squeeze may affect economic activity if prolonged. To mitigate this cost, a central bank may charge raised interest rates to those identified as speculators and concessionary rates to nonspeculators through credit controls. One way to do this is to identify as speculators those with foreign addresses who engage in foreign exchange swaps with domestic banks and either ban such swaps or insist that heavy forward discounts be imposed on the forward legs of such swaps. Similarly, domestic banks may be forbidden to provide on-balance-sheet overnight or longer maturity credit to foreign addresses. Such controls generate a spread between onshore and offshore interest rates on domestic currency loans, along with a strong incentive to circumvent the controls.
Although greater access to international markets has been highly beneficial for emerging market countries, it has also exposed them to the vicissitudes and volatility of global financial markets. In addition to the macroeconomic challenges posed by relatively large and potentially volatile flows, the large external foreign currency debt of developing countries also makes them vulnerable to swings in international exchange rates and interest rates. The vulnerability of countries to speculative attacks is also often exacerbated by a weak external debt position. Indeed, the benefits of prudent macroeconomic policies have been compromised at times by the fiscal consequences of losses associated with these exposures.

In emerging market countries, sovereign exposures to currency risk can be broadly gauged by the amount of external public debt (Figure 16). In 1996, the outstanding stock of sovereign debt issued or guaranteed amounted to 25 percent of their combined GNP ($1.5 trillion) and three times their foreign currency reserves. Roughly half of the external debt of emerging markets was exposed to foreign interest rate risk: a fifth of that was short-term (less than one-year maturity), and two-fifths of the remaining long-term debt was at variable rates.

During the past two decades, a number of emerging markets have experienced the damaging consequences of adverse movements in international currencies and interest rates. In the early 1980s, the debt-servicing burdens of some Southeast Asian, Latin American, and African countries were severely affected by the appreciation of the dollar, the worldwide increase in interest rates, and the decline in commodity prices. In the first half of this decade, the debt burden of several Asian countries increased significantly owing to their large and unhedged exposure to the Japanese yen. A third of the increase in the dollar value of Indonesian external debt between 1993 and 1995, for example, was attributable to cross-currency movements, particularly the steep appreciation of the yen. The exposure of Indonesia to the yen has been especially costly as about 90 percent of its export revenues are denominated in dollars, while at the time 37 percent of its external debt was denominated in yen. In the Philippines, which has a third of its external debt denominated in yen, the appreciation of the yen accounted for about half of the increase in the dollar value of its external debt in 1995. In China, the appreciation of the yen is estimated to have increased the servicing costs of the public debt by about $5 billion. The subsequent depreciation of the yen in 1996 offset some of the losses incurred by these countries.

The large foreign currency exposure of emerging market countries can be explained by a number of historical and structural factors, including the lack of domestic borrowing instruments, the large capital requirements of development and infrastructure projects, and a large share of official financing (multilateral and bilateral), which tends to be denominated in donor countries’ currencies. More recently, as emerging market countries have gained greater access to international debt markets, the currency composition and the maturity structure of their external borrowing have tended to be driven to a large extent by a desire to reap the immediate fiscal benefits of borrowing in foreign markets with the lowest unhedged nominal interest rates. Several emerging markets (e.g., Argentina, Colombia, Mexico, Hungary, and Turkey) have issued foreign currency debt denominated in yen and deutsche mark in the last few years. Such borrowings often have been driven by the low coupon rates offered on these currencies, rather than by a debt stra-
maintain access to new financing. In spite of the segmentation of baht credit markets, onshore interest rates remained high. In addition, attempts to arbitrage the differential between onshore and offshore rates, for example through the purchase of bills of exchange at steep discounts, continued. The convergence of exchange rates and the reduction of interest rate differentials between the two markets suggest that the controls became progressively less effective (Figure 17).

The Philippine peso came under severe pressure in the immediate aftermath of the baht’s depreciation on July 2. These pressures were largely confined to the
onshore spot market, given the absence of a liquid forward market in pesos. Attention has focused recently on the extent to which pressures on the peso originated in the offshore nondeliverable forward (NDF) market, and were subsequently transmitted to the spot market as participants attempted to arbitrage the differentials between the two markets. However, average volumes and liquidity in the NDF market are substantially lower than in the spot market. The small size of the NDF market suggests that it would be difficult for participants to build up substantial short positions through the market, and these pressures were largely channeled through the spot market. Nevertheless, on July 22, the central bank prohibited local banks—for a period of three months—from engaging in NDF contracts with offshore banks, reflecting the concern that the NDF market had contributed to speculation in the foreign exchange market.

The Bangko Sentral ng Pilipinas (BSP) responded to these pressures by raising interest rates and intervening in the spot market, and there were reports that local banks were also discouraged from making peso credit available for speculation (Figure 20). Overnight interest rates were raised in steps to 32 percent. It was estimated that between July 2 and July 10 the BSP lost more than $1.5 billion of reserves. It stopped intervening on July 11, allowing the peso to depreciate initially by 11.5 percent. The Bankers Association of the Philippines (BAP) unexpectedly invoked circuit breakers, imposing volatility caps on the Philippine Dealing System that shut down the spot foreign exchange market. On the following trading day the BAP eliminated this cap. Subsequently the peso mid-rate fluctuated in a wide range of some 8 percent. Liquidity in the spot market was extremely low and daily trading volume averaged $75 million between July 14
and 24 compared with an estimated $220 million over the previous six months. The low level of liquidity in the market, combined with uncertainty among market participants about the future value of the peso, resulted in reported bid-ask spreads of 5–10 percent.

Since the Malaysian ringgit was subject to pressures in the immediate aftermath of the baht’s devaluation, Bank Negara Malaysia intervened heavily in support of the ringgit until July 11, when it abruptly withdrew from the foreign exchange market. The cessation of intervention allowed the ringgit to depreciate by 2.4 percent on July 11, before Bank Negara reentered the market and the exchange rate appreciated, thereby imposing a cost on speculators. Markets reacted with nervousness to Bank Negara’s intervention in support of the currency, and there was a perceived increase in the downside risks from shorting the ringgit. During the subsequent week, however, the central bank did not intervene in significant amounts, which gradually reduced perceived downside risks, triggering a sell-off, and the ringgit depreciated by 5 percent between July 11 and 18. Interest rates, which rose when pressures began, fell back substantially, leading to a fairly flat yield curve.

The intervention band for the Indonesian rupiah was widened from 8 to 12 percent on July 11 in a preemptive move designed to deter speculation. In the event, the rupiah depreciated by 8 percent by July 21,
and as it fell toward the bottom of the band, some speculative pressures built up to test the floor. In response, Bank Indonesia raised interest rates from 12 percent to 13 percent on July 23, and reportedly intervened heavily in support of the currency.

In what was viewed as a spillover effect from the Asian emerging market currency depreciations, the Brazilian equity market fell by 15 percent during the week of July 11 to 18. This followed a spectacular rise in the market by over 90 percent from the beginning of the year, though, and was viewed by some market participants as representing perhaps a necessary correction. While there was no evidence of short selling of the real, concerns that speculative pressures could lead to a larger-than-expected depreciation, as they had in Asia, contributed to the sell-off in the equity market.

**Figure 20. Yield Curves in Selected Emerging Markets, July 1997**

![Yield Curves](image)

*Source: Bloomberg Financial Markets L.P.*
creasingly favorable relative to those in the mature markets. The increase in emerging market equity prices during 1996 accelerated in the first quarter of 1997, again particularly in Latin America. In the international syndicated loan market, a reduced demand for bank financing by emerging market borrowers coincided with rising supply, and strong competition among banks created considerable pressures on pricing and weakened loan structures, also raising concerns as to whether risks were being sufficiently priced. Refinancings accounted for almost a fifth of new syndications of medium- and long-term loans in 1996, and over a third in Latin America.

This annex discusses emerging market financing, with a focus on recent developments during 1996–97. The first section discusses net capital flows in the balance of payments, the behavior of international reserves, and developments in foreign exchange markets. The following sections discuss developments in emerging debt markets, equity markets, mutual funds dedicated to emerging markets, and international bank lending.

**Capital Flows, Reserves, and Foreign Exchange Markets**

**Capital Flows in the Balance of Payments**

In spite of several unfavorable developments, total private capital flows to emerging markets during the 1990s have proven remarkably resilient (Table 13 and Figure 21). Increases in interest rates in the mature markets during the course of 1994, the Mexican peso crisis and “Tequila” (contagion) effects that followed, and occasional high volatility in the mature assets markets all had only temporary and localized effects on these flows. Similarly, during 1996 the strong performance of many of the mature equity markets, uncertainties relating to the course of interest rates in the mature markets, and perceived vulnerabilities in some of the systemically important emerging market countries failed to deter the overall volume of private flows to emerging markets, which grew by 22 percent to a new record of $235.2 billion. For the first time in the 1990s, private capital flows to the emerging markets exceeded total (private plus official) capital flows in 1996, and $13.2 billion in net repayments of official flows meant that total capital flows actually declined from $232.0 billion in 1995 to $222.0 billion in 1996. Net official flows were negative not only to Latin America, reflecting the substantial repayments by Mexico of the official assistance extended in the aftermath of the crisis, but also to the Middle Eastern, European, and transition economies.

A key characteristic of the surge in private capital inflows to the emerging markets during the 1990s, and one that has been critical in underpinning the resilience of total private flows during the period, has been the steady growth of FDI flows. Encouraged by continued capital account liberalization and the easing...
holder of reserves among the emerging market countries. Other notable increases over the period include Singapore ($56 billion), Brazil ($51 billion), and Thailand ($27 billion).

The large buildup in emerging market central bank reserve assets during the 1990s reflects in part direct central bank intervention to prevent nominal exchange rate appreciation in the face of the substantial capital inflows. It also reflects concerns about the risks of a sudden reversal of capital flows. Recent history, in particular the sharp loss of reserves during the reversal of capital flows to Mexico during 1994 when, within a few days in December, the central bank lost $5 billion in reserves, and portfolio management considerations in a world of increased capital mobility suggest that traditional import-cover measures are no longer appropriate for judging the adequacy of the level of reserves. Reserve coverage needs to be measured instead in relation to a broad range of monetary aggregates and banking system and government short-term liabilities. Relative to these aggregates, the buildup in reserves has been more modest. At end-1996, for example, while Thailand’s reserves were sufficient to cover over six
where rates shot up to 1,300 percent. The Bank of Thailand directed banks, usually the primary providers of baht, both onshore and offshore, to segment the two markets. The limitation of baht credit offshore drove up interest rates substantially more than onshore, causing speculators to settle their forward positions through the spot market, which put upward pressure on the exchange rate. Domestic banks also segmented the customer base by restricting baht lending to foreign clients, or charged them prohibitive swap rates, and stopped buying back baht-denominated commercial paper from offshore. Similar pressures were reported, though to a lesser extent, on both ringgit and rupiah offshore rates, and Malaysian and Philippine banks restricted the lending of local currency to foreign customers. The Czech National Bank limited access by nonresidents to the domestic money market.

In Asia, market participants widely reported coordinated exchange market intervention among the Asian central banks, particularly in support of the baht, and though it was unclear as to whether the recently established network of regional bilateral repurchase agreements had been utilized, the perception that they could be appeared to deter speculation. Since there are substantial offshore markets for these currencies—in Singapore and Hong Kong, China—some of the apparently coordinated intervention by the Monetary Authority of Singapore and the Hong Kong Monetary Authority was simply on behalf of other central banks. Some market participants reported pressures on U.S.
bond markets during the period as Asian and Eastern European central banks sold treasuries. While the baht withstood the pressures in May, and the pressures on the other Asian currencies abated, on May 26 the Czech National Bank abandoned its policy of maintaining the currency inside a trading band against a hard currency basket.

The contagion of speculative pressures on emerging market currencies in May was selective. The countries to which the run on the baht spread had, in the view of investors, a number of features in common with Thailand. Within Asia, Malaysia, Indonesia, and the Philippines had all been affected by the slowdown in the region, though to varying degrees. All had current account deficits, though of a smaller magnitude than that of Thailand, and most had accumulated debt rapidly during the 1990s, though again to a lesser extent. All had undergone booms in the property sector, and all had varying degrees of financial sector fragilities. The Czech Republic shared many of these features and had perhaps even more similarities with Thailand than the affected Asian countries did. Among currencies not affected by the contagion was the Korean won, even though there were many parallels in economic circumstance with Thailand. Several observers have noted that this was perhaps because

Source: The WEF A Group.
decline during 1996 (Figure 24). Sovereign yield spreads, for example, in the J.P. Morgan Emerging Market Bond Index (EMBI), fell from their peak of 1752 basis points in March 1995 to 1044 basis points at the end of 1995, then to 537 basis points by the end of December 1996. Total returns on the EMBI rose from a robust 27 percent in 1995, to 34 percent during 1996. These returns were in contrast to sharp declines in returns in the mature markets, with returns on the J.P. Morgan Government Bond Index for the United States (GBI) dropping to 3.4 percent in 1996 from 17 percent in 1995, and returns on the Merrill Lynch High-Yield (MLHY) index of U.S. corporate bonds dropping to 11 percent from 20 percent.

In early 1997, emerging market spreads continued to decline, falling by the third week of February to about their previous historic lows of around 400 basis points, last reached in late 1993 and early 1994. As spreads had last reached their historic lows in the period preceding the run-up in U.S. interest rates during 1994 that ushered in the Mexican crisis, these levels gave rise to concerns that yields had reached their lower limits in adequately compensating for risk. Spreads then fluctuated, widening at first, then narrowing again, and returns on the EMBI dropped off to 2.6 percent during the first quarter of 1997, though they continued to exceed those of the GBI, with losses of 1.1 percent, and the MLHY, with returns of 1.4 percent. Starting in the last week of February 1997 there was a sharp correction, and by the time the U.S. federal funds rate was raised in the third week of March, emerging market spreads had risen by around 60 basis points. Following the 25 basis point hike in the U.S. federal funds rate, emerging market spreads widened by an additional 60 basis points through mid-April, having risen a total of 120 basis points over a two-month period. Spreads then fell by about 75 basis points through May 1997, to around 450 basis points.

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7Sovereign yield spreads refer to yield differentials relative to comparable government securities in that currency. Spreads in the J.P. Morgan Emerging Market Bond Index (EMBI) are relative to U.S. treasuries.
8Most emerging market bond indices heavily weight Latin American Brady debt. (In the EMBI, for example, they receive a weight of 91 percent.) As discussed below, Brady bonds are among the most liquid emerging market debt instruments.
9The MLHY is an index of high-yield U.S. corporate bonds that are rated below investment grade. All of the sovereigns in the EMBI were rated below investment grade during 1996.
Figure 25. Yield Spreads for Selected Brady Bonds and U.S. Dollar-Denominated Eurobonds¹

*In basis points*

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1. Yield spreads on Brady bonds are “stripped” yields.
2. Latin America: Republic of Argentina bond due 12/03 and United Mexican States bond due 9/02.
some 50 basis points above their historical lows. (Factors driving the compression of emerging market spreads over the recent period are discussed at the end of this section.)

Figure 25 shows that the decline in spreads on emerging market debt during 1996 and early 1997 and the subsequent correction were, with few exceptions, across the board. In the Brady market, the decline in stripped yield spreads for each of the major Latin countries brought them below precrisis levels by mid-1996. While Mexico had enjoyed a spread substantially below the other major Latin countries prior to the crisis, it has not done so since. Bulgaria was a notable exception to the broad-based decline in spreads during 1996, with the stripped yield spread on its Bradys widening early in the year, and then declining sharply in early 1997 with the announcement of plans to proceed with a currency board. On the secondary market for Eurobonds, Hungarian spreads fell by more than 100 basis points over the period, to 70 basis points, while those for China fell by 50 basis points.

Reflecting both changes in perceptions of credit risk and the relatively lower liquidity of emerging debt markets, returns on emerging market debt have been considerably more volatile than those on mature market debt (Figure 26, top panel). The volatility of returns on the EMBI rose steadily, from about 1 percent in early 1993 through the Mexican crisis, peaking in mid-1995 at 3 percent. Volatility has since declined steadily, falling by May 1997 to 1.5 percent. The close correspondence between the level and volatility of spreads—both rising and falling together—indicates that while the rise in yields during 1994–95 and the subsequent period of turnaround tended to be erratic, suggesting increased uncertainty of credit risk, the subsequent decline in spreads was accompanied by diminishing uncertainty.\(^\text{10}\) Despite the reversals in yields during the early part of 1997, volatility continued to diminish. Throughout the period, the volatility of returns on the GBI and the MLHY have remained relatively stable around 0.5 percent and 0.4 percent, respectively.

An important consideration for investors from the mature markets in emerging market debt is the gains from diversification of their portfolios. These gains depend on the correlation of returns between the emerging and mature markets. The bottom panel of Figure 26 presents the correlation of returns on the EMBI and the mature markets.\(^\text{11}\) It shows that after a low in early 1995 following the Mexican crisis, returns on emerging market debt and both U.S. treasuries and high-yield U.S. corporate bonds have tended to be highly positively correlated, with the correlation of returns recently reaching almost 0.8. This suggests that the benefits of diversification among the emerging and mature debt markets have been diminishing.

**Turnover**

The surge of investor interest combined with the growing volume of new issuance resulted in a tremendous growth of trading in all types of emerging market debt instruments and derivatives. After remaining unchanged in 1995, transactions in emerging market debt instruments increased by 93 percent, to $5.296 billion in 1996 (Table 15).\(^\text{12}\) Brady bonds remained

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\(^\text{10}\) As both spreads and volatility of emerging market debt declined, movements in the ratio of yields to volatility (not presented) have been more modest. After declining in early 1995, the ratio has fluctuated around a little less than one. It is important to note, however, that the ex post volatility of returns captures only market risk, and though this includes volatility in returns induced by changes in perceptions of credit risk, it does not capture the level of credit risk. The behavior of such ratios for bonds with default risk can, therefore, be misleading.

\(^\text{11}\) The reported correlations are computed for weekly changes over the preceding year.

Many of the explanations put forward are unconvincing. Some suggest a lack of investor sophistication, and some a lack of liquidity. First, it has been argued that since Brady bonds represent restructured loans, they carry the stigma of prior defaults, whereas Eurobonds are original-issue debt. For such aspects of debt to affect yield requires that investors perceive that there is a greater risk of default on the Brady bonds than on Eurobonds, despite the fact that rating agencies assign identical ratings to sovereigns' Brady and other foreign currency debt. Second, the actual “stripping” of the Brady bonds of their collateral to earn the stripped yield—which requires shorting the collateral, U.S. treasury discount bonds, in a portfolio—entails costs. Market participants place these costs at 40–80 basis points, and they cannot, therefore, provide a complete explanation of the 175–300 basis point differentials. Third, the unusual cash-flow patterns—such as below-market coupons—of Brady bonds may have prompted investors to demand higher yields on Brady bonds. Durations are employed in Figure 27 precisely to make different cash flows comparable. Fourth, since many of the Eurobonds are bearer securities, some investors may be willing to pay a premium—give up yield—for anonymity that allows them to forgo registering the securities. Fifth, Eurobonds have lower volatilities than Brady bonds, and so investors may require a lower yield. While this may be true, it may reflect the fact that Eurobonds trade less frequently than Bradys. The relative magnitudes of turnover discussed above suggest that the Bradys are more liquid than Eurobonds. Sixth, all Brady bonds are callable at par while most of the more recently issued Eurobonds are not. As the prices of emerging market debt have risen rapidly over the past two years with, for example, the Mexican discount bond trading in the low 90s recently, the value of the call feature on Brady bonds has become a consideration. (The value of the call option is also a consideration across different Bradys—with, for example, the Mexican discount bond trading recently in the high 70s compared with the discount bond trading recently in the 90s.) For most of the period since their inception, however, the call option has been so far out-of-the-money that its value has been insignificant. Finally, carrying out an arbitrage trade of buying Bradys and selling Eurobonds, which requires carrying out a repo, is expensive. As the size of particular Eurobond issues has been relatively small, and some are often traded infrequently, many of the Eurobonds trade “special” in the repo market, rendering arbitrage prohibitively expensive. Any sizable transaction would, therefore, be likely to move the market.

Primary Issues

The rally in emerging debt markets provoked a sharp shift in the structure of external financing for emerging markets toward bond issuance. International bond placements by emerging market entities soared in 1996 to $102 billion, far exceeding the previous record of $63 billion in 1993 (Table 16 and Figure 12). Issuance from all regions—with the exception of Africa—rose sharply. The increase was particularly marked for Latin America, where issuance more than

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Figure 27. Brady and Eurobond Spreads1
(In basis points)

Source: J.P. Morgan.

1As on April 11, 1997.


1996, Mexico followed up its April exchange of Brady bonds for $1.8 billion uncollateralized dollar-denominated 30-year global bonds, by using the proceeds of a $1 billion issue to retire a further $1.2 billion of discount bonds. In the same month, the Philippines launched a $690 million 20-year bond in exchange for Brady bonds. The Mexican and Philippine transactions were widely viewed as forerunners for other such exchanges and as heralding the eventual demise of the Brady market. More recently, in June 1997, Brazil swapped a 30-year $3 billion global bond for $2.7 billion (face value) of Brady bonds and $750 million of new money. Among the newly rated sovereign credits, in November 1996, Russia placed a $1 billion five-year issue, its first since 1917 and the largest-ever debut issue by an emerging market sovereign.

There was a broad-based improvement in the terms of issuance for borrowers (Figure 28 and Table 17). Spreads declined, maturities lengthened, the proportion of fixed-rate issues increased, and the proportion of callable bonds rose. While the average spread for unenhanced dollar issues actually increased from 218 basis points in 1995 to 244 basis points in 1996, this reflected higher average spreads on private sector issues as the spectrum of borrowing entities expanded and maturities lengthened. For sovereign issues, spreads declined from an average of 383 basis points in 1995 to 307 basis points in 1996. There was an impressive lengthening of yield curves as several issuers placed 10-, 20-, 30-, and even some 100-year bonds. During 1996 and the first quarter of 1997, some 175 issues, or almost a quarter of all issues by emerging market entities, had maturities of 10 or more years, while six entities issued 100-year bonds. The average maturity of new issues in the dollar sector rose from 6.6 years in 1995 to 7.7 years in 1996, while sovereign maturities, after having shortened to 4.5 years in 1995, rose dramatically to 9.5 years during 1996. The search for higher yields also appeared to shift issuance in favor of fixed-rate issues, as investors traded yield for interest rate risk. The proportion of fixed-rate issues rose from 67 percent in 1995 to 70 percent in 1996, and to 72 percent in the first quarter of 1997. Similarly, bonds with call options, offering a pickup in yield for the risk of the call being exercised, rose from 13 percent in 1995 to 21 percent in 1996.

The U.S. dollar has traditionally been the primary currency in which international issues of emerging market debt have been denominated, accounting for some 70 percent during 1990–94 (Table 18). A remarkable change in the last two years has been the growing diversity of currencies of issuance. The currency sectors targeted by issuers have not always corresponded to the pattern of their export earnings, as issuers have sought to take advantage of pockets of strong local investor—often retail—interest, some-

![Figure 28. Spreads and Maturities for Sovereign Borrowers](image)

Source: Capital Data Bondware.

1Unenhanced U.S. dollar-denominated bonds.

### Table 17. Emerging Market Bond Issues: Fixed-Rate, Floating-Rate, and Call Options

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<td>25.1</td>
<td>12.8</td>
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Source: Capital Data Bondware.

1The combined total for fixed- and floating-rate bonds may not add to 100 percent because convertible and unclassified bonds are excluded.

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18These were the People’s Republic of China, the Endesa Chile Overseas Company, India’s Reliance Industries, the Israel Electric Corporation, the Korean Electric Power Company, and Malaysia’s Tenaga Nasional Berhad.
fault risk could be answered directly if the probability of default implicit in market spreads could be identified and compared with independent estimates of the probability of default. Market spreads would clearly be judged to have declined too far if they were insufficient to cover the probability of default—that is, if the spread were decomposed into (1) a premium estimated to be due to the probability of default and (2) a liquidity premium to encompass the variety of other factors potentially affecting demand, and the liquidity premium were found to be negative (since there is no obvious reason to expect that investors would be willing to pay a premium—give up yield—to hold emerging market debt). Estimating default risk for sovereigns requires simulating a country’s balance sheet to do a financial risk exercise as is done for a bank or other enterprise. It would then be possible to calculate directly the probability distribution that a country would not be able to meet its payments and hence the probability of default. Few countries, however, publish such balance sheets. This is an important difference between sovereigns and corporates: debt-issuing corporations publish balance sheets and are subject to stricter disclosure requirements. Moreover, the legal framework in the event of corporate default is relatively clear. The volatility of perceived credit risk for emerging market sovereigns is, therefore, likely to be greater. Inherently higher volatility of perceptions of credit risk for sovereigns suggests that yields on sovereigns should exceed those for corporates.

Equity Markets

As several of the mature equity markets reached new highs in 1996, emerging equity markets continued to recover from the trough in early 1995, though cumulative returns since the peak in 1994 remained negative. The effects of the Mexican crisis continued to fade, and the volatility of equity prices—in both Latin America and Asia—subsided during 1996 and into 1997 to levels prior to the crisis, while the recovery of economic prospects in Latin America boosted forecasts of earnings growth. These factors combined to make emerging market equity look increasingly attractive relative to the mature markets, and price increases in Latin America accelerated in early 1997. The recovery in emerging equity markets in 1996 was accompanied by increased liquidity for most markets as turnover rose but new issuance remained subdued. While overall flotations of new equity by the emerging markets continued to decline, there were marked differences across regions, as placements by Latin American entities rebounded while those by Asian entities fell. There was an increased reliance on international issuance across regions, however, and the volume of international issuance increased.

Secondary Markets

During 1996 emerging equity markets posted their first collective positive return since the boom of 1993, with total dollar returns measured by the International Finance Corporation’s Investable (IFCI) Composite Index rising by 9.4 percent (Figure 29). Relative to the mature markets, however, emerging equity markets performed modestly. Returns were substantially higher on the S&P 500 index (23 percent) in the United States, for example. The relatively modest

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21See footnote 26 in Chapter IV above.
sions to growth, while those on Asian equity rose modestly by \( \frac{1}{4} \) of a percentage point to 12\( \frac{1}{4} \) percent. Consequently, the differential of 3 percentage points at the start of 1996 narrowed to 1\( \frac{1}{4} \) percentage points by May 1997.

Higher expected returns on equity in emerging markets relative to the mature markets have been associated with generally higher price and return volatility (Figure 30, top panel), with that in Latin American markets exceeding that in the Asian emerging markets. Volatility in emerging equity markets rose steadily during 1994 in the run-up to the Mexico crisis, plateauing at a considerably higher level during 1995. The rise was substantial in both Latin America and Asia. Volatility in Latin American markets rose from 2 percent in late 1993 to 5 percent by mid-1995, and in Asian markets from 1\( \frac{1}{2} \) percent to 3 percent. Volatility then declined dramatically during the course of 1996 and continued doing so through May 1997, with that in Latin America falling below its previous low, to 1\( \frac{1}{2} \) percent, and that in Asia returning to its previous low of 1\( \frac{1}{2} \) percent. The behavior of volatility in emerging equity markets was in contrast to that in the United States, where the volatility of the S&P 500 rose steadily during the course of 1996 and into 1997. In fact, by July of 1996, the volatility of the S&P 500 exceeded that of the composite of emerging markets, by October it exceeded that of the Asian emerging markets, and by early May 1997 it exceeded that of the Latin American markets. The middle panel of Figure 30 compares the ratio of expected returns to volatility. It shows that during 1996 and into 1997, as expected returns on emerging market equity rose and volatility declined, risk-adjusted rates of return rose dramatically for both Asian and Latin American markets. In the United States, on the other hand, the run-up in share prices and increase in volatility caused the S&P 500 to look less and less attractive, while in the United Kingdom, after declining during the first half of 1996, the ratio fell during the later part of the year and then stabilized in 1997.

Market participants have pointed to the ongoing process of increased portfolio diversification by institutional investors in the mature markets as playing an important role in driving portfolio flows into emerging markets during the 1990s. The benefits of diversification into the emerging markets depend on the (lack of) correlation among returns between the emerging and mature markets. The correlation of price changes between the S&P 500 and the emerging markets, over the period 1992 through May 1997, were as follows: composite emerging 0.26, Latin American 0.27, and Asian 0.09. The correlations between the FT 100 and the emerging markets were as follows: composite emerging 0.32, Latin American 0.24, and Asian 0.21. The correlation between the Latin American and Asian emerging markets was 0.14, and that between the S&P 500 and the FT 100 was 0.29. All of these correlations are relatively small, suggesting considerable benefits from diversification. The weakest corre-

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24 The projected output growth numbers employed for 1997 are based on a forecast date of end-March 1996. Some observers have continued to revise their forecast for growth in Latin America upward and those for Asia downward. Figure 29 may, therefore, underestimate returns in Latin America and overestimate returns in Asia.

25 Volatilities are computed as the standard deviation of weekly changes in the (logarithm of) prices over the preceding year. The volatility of total returns over the period was very similar.

26 Besides the higher volatility of returns, however, there are a number of other sources of risk in investing in emerging equity markets. These include inadequate accounting and disclosure practices, limited information, settlement and legal risks, and limited liquidity in some emerging markets.
Net flows into emerging market mutual funds rebounded from their low of $963 million in 1995 to reach $7.2 billion during 1996. There were particularly robust inflows of $4.5 billion in the first quarter of 1996, which subsequently declined through the year, culminating in an outflow of some $326 million in the fourth quarter, a pattern that was common across both region-specific and broad emerging market funds. In the first quarter of 1997, there was a strong recovery of flows with purchases reaching $2.7 billion, concentrated in the broad emerging market and Latin American funds, while there were net redemptions from Asian funds of $532 million. Generally, purchases and redemptions of individual country-specific funds also mirrored the performance of the local markets. The pattern of flows—both total volumes and regional allocations—corresponded relatively closely to the behavior of emerging market equity prices discussed above.

International Bank Lending

Syndicated Loans

The international syndicated loan market for emerging market borrowers during 1996 and the first quarter of 1997 was, albeit to differing extents across regional segments, characterized by moderating demand for bank lending that coincided with a rising supply of loanable funds. This mismatch created considerable downward pressure on pricing and caused loan structures to weaken. The favorable pricing of emerging market bonds caused borrowers increasingly to turn away from bank lending in favor of the longer maturities and less burdensome restrictions offered by fixed-income instruments, while favorable conditions in the loan market itself encouraged refinancing, which accounted for almost a fifth of new medium- and long-term syndications. On the other hand, the low level of interest rates in the mature markets and the tightening of interest margins on loans in these markets caused banks to look increasingly to the emerging markets for higher yields. The resulting intense competition among banks for lending to emerging market entities pushed down spreads, cut fees, increased tenor, and resulted in a weakening of loan covenants.

Following the sharp increase in syndicated bank lending to emerging markets during 1995 of over 36 percent due to the increased costs of borrowing on bond and equity markets in the aftermath of the Mexican crisis, the total volume of syndicated lending rose more modestly during 1996 by 6.4 percent to $79.7 billion (Table 16 and Figure 11). Lending to Asian countries continued to grow robustly, however, increasing by 22 percent and accounting for the largest share of bank lending, 62 percent in 1996, up from 54 percent in 1995. Lending to the European emerging...
countries as well as simply large flows of capital internationally. Monetary stimulus in the major industrial countries has on balance shifted toward an easier stance since early 1996, with slightly tighter monetary conditions in the United States and the United Kingdom partially offsetting the monetary stimulus from Europe, Japan, and Canada (Figure 34). In addition, growth in firms’ demand for bank financing in some of the major countries has been low in relation to monetary growth rates, and thus monetary easing may have significantly affected liquidity (see Figure 34).

The difference in cyclical positions and in the stances of monetary policies—which reflect the difference in cyclical conditions—among the major countries have created large interest differentials between countries. Of particular significance are the higher interest rates in the United States versus the two next-largest economies, Japan and Germany (Figures 35–37; see also Figure 2). The interest differential between yen- and dollar-denominated fixed-income securities has been especially large during the period under review. At the short end of the yield curve, the differential between three-month yen and dollar rates has been more than 4.5 percentage points since January 1996, and in May 1997 exceeded 5 percentage points. At the long end of the yield curve, the
Figure 33. Major European Countries: Local Currency vs. Deutsche Mark, January 1994–May 1997

Source: Bloomberg Financial Markets L.P.
Figure 34. Major Industrial Countries: Real Growth in Broad Money Supply and Claims on Private Sector¹
(In percent from four quarters earlier)

Sources: International Monetary Fund, *International Financial Statistics* database; and The WEFA Group.

¹M3 for broad money supply for all countries except the United Kingdom, for which M4 is used. Claims on private sector are taken from International Monetary Fund, *International Financial Statistics* (line 32d). Data for 1980: Q1 through 1997: Q1.
spread on long-term yen and dollar government bonds rose steadily from early 1996, and in May 1997 stood at more than 4 percentage points. The spread between deutsche mark and dollar yields has increased steadily since early 1996, reaching about 2.5 percentage points in May 1997 for short-term rates and about 1 percentage point for long-term rates.

The relatively attractive yields on dollar investments encouraged Japanese and European investors to increase the weight of dollar bonds in their portfolios. This is reflected most clearly by survey data on currency exposures of investors: since early 1995, investors have clearly tilted their portfolios in favor of assets denominated in dollars, pounds sterling, and other high-yielding currencies (Statistical Appendix Table A1). The appreciation of many of the higher-yielding EU countries’ currencies, as well as currencies in the dollar bloc (Canada, Australia, New Zealand), against the deutsche mark and yen, is consistent with yield-seeking international capital flows. Further, the attractiveness of the relatively higher yields in the United States (and elsewhere) has been compounded by uncertainties about investing in core Europe and Japan, which might have caused risk-adjusted interest differentials to be even larger. Specifically, uncertainty about financial system problems in Japan and uncertainty about the future value of the euro—which has been highlighted by renewed optimism about EMU—might have further increased the relative attractiveness of dollar-denominated investments.

The available data on capital flows strongly suggest that investors have been seeking higher yields by in-
vesting abroad. Outward portfolio flows during the past 18 months have been associated with aggressive buying of foreign securities by U.S., Japanese, French, Spanish, and German investors, as well as positions booked in the major international financial centers outside the United States—the United Kingdom, Singapore, and Hong Kong, China (Statistical Appendix Tables A2–A3). As for the recipients of these capital flows, the United States has clearly been a major target of non-U.S.-based investors. Foreign purchases of U.S. treasury and government agency bonds and notes reached $293.7 billion in 1996, and there was a further $78 billion of foreign purchases of U.S. corporate bonds. Similarly strong capital inflows to U.S. securities markets have been apparent in the first quarter of 1997: foreign purchases of government and corporate bonds during the first quarter of 1997 were slightly above the quarterly average during 1996. In comparison, despite the sharp increase in U.S. equity prices in recent years, there were only $13.2 billion of foreign inflows into the U.S. equity market in 1996.

As noted in Chapter II of the report, particularly wide interest differentials between the United States and Japan, in conjunction with the belief that the Bank of Japan did not want the yen to strengthen in 1996–97, were viewed by some large global hedge funds as a potentially lucrative situation. These so-called yen-carry trades involved borrowing in yen, selling the yen for dollars, and investing the proceeds in relatively high-yielding U.S. fixed-income securities. In hindsight, these trades turned out to be considerably more profitable than simply the interest differ-

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**Figure 36. Major Industrial Countries: Long-Term Interest Rates**

*(In percent a year)*

![Graph showing long-term interest rates for major industrial countries from 1994 to 1997.](image)

1Yields on government bonds with residual maturities of 10 years or nearest. Weekly averages of daily observations.

21987 GDP weights.
ential, for the yen depreciated continuously over the two years from May 1995 through May 1997, which reduced the yen liability relative to the dollar investment that it financed.

With available data, it is difficult to determine the scale of yen-carry trades implemented over the past two years. It is noteworthy, however, that while Japanese banks reduced total cross-border assets by $20 billion in 1996, they increased lending by almost $19 billion to nonbank entities located just in the Cayman Islands (British West Indies)—a home for some of the major hedge funds. Over the same period, entities located in the British West Indies accumulated $20 billion of U.S. long-term bonds. Further, lending by

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Figure 37. Bilateral Exchange Rates and Short-Term and Long-Term Interest Differentials vis-à-vis the U.S. Dollar

Source: International Monetary Fund.

1 Interest differentials shown are U.S. interest rates minus domestic interest rates in percent a year. Exchange rates are drawn on logarithmic scales and are defined in terms of national currency units per U.S. dollar, except for the United Kingdom, where it is defined as U.S. dollars per pound sterling. The figures show monthly averages of daily data from January 1985 through May 1997.
Japanese banks to U.S. nonbank entities expanded by an additional $28.8 billion during 1996. Viewed in light of the significant contraction in total cross-border assets of Japanese banks in 1996, the fact that Japanese banks increased their cross-border claims on nonbanks in the Cayman Islands and the United States by almost $48 billion is consistent with parties in these regions instituting significant yen-carry trades.

The volume of international inflows into U.S. bond markets in 1996 is by far the largest ever—70 percent larger than the previous record set in 1995. Net foreign purchases of U.S. government bonds alone ($294 billion) accounted for 250 percent of the increase in the stock of privately held public debt securities in 1996. This pushed the share of foreigners’ total ownership to one-third of the stock of public debt securities, up from 26 percent in 1995 (Figure 38).

Yield-seeking by private investors accounted for much of the large capital inflows to dollar markets during the past eighteen months, but foreign exchange reserve accumulation by central banks was also an important source of inflows to dollar markets. Central banks accounted for 35 percent of total foreign net purchases of U.S. treasury bonds in 1996. Much of this official accumulation of U.S. treasury securities has been a consequence of efforts by developing countries to manage the impact of large inflows of foreign capital on their respective currencies, which required the accumulation of official reserves. Indeed, more than half of reserve accumulation by all central banks in 1996 was by central banks in developing countries. Among industrial countries, the Japanese monetary authorities have been most aggressive in accumulating reserves during the past two years. During 1995–96, the Bank of Japan accumulated more than $90 billion in reserves, bringing the total in early 1997 to about $218 billion (14 percent of global official reserves). The Bank of Japan’s reserve accumulation in 1996 was almost four times greater than that of the other six G-7 countries combined, and it represented 45 percent of reserve accumulation by central banks in all industrial countries (20 percent of global official reserve accumulation). By contrast, the G-7 countries excluding Japan were responsible for only 5.4 percent of total official reserve accumulation over the year, and about 12 percent of reserves accumulated by all industrial countries during the year.

The magnitude of capital inflows into the dollar markets has also been large relative to the U.S. current account position (Table 22). The U.S. current account deficit in 1996 was $148 billion (or about 1.9 percent of GDP). Capital inflows amounted to $547 billion, or 370 percent of the current account deficit. Accumulation of U.S. securities by foreign central banks alone was only $26 billion less than what was required to finance the current account deficit. Private security purchases by foreigners, however, contributed inflows of $289 billion. Thus, total accumulation of U.S. securities by foreigners amounted to 5.4 percent of GDP, or 275 percent of what was necessary to finance the current account balance. This record level of portfolio inflows—both in absolute value and as a percentage of GDP—was intermediated in U.S. financial markets and invested abroad through purchases of foreign securities by U.S. investors ($108 billion) and by net lending abroad by U.S. banks ($98 billion).

The aggressive purchase of foreign securities by U.S. investors is consistent with the continued international diversification of U.S. investors’ portfolios. The relatively large net amount of cross-border bank lending by U.S. banks reflects two factors. First, U.S. banks have onlent to their foreign subsidiaries to meet strong demand in the Eurodollar market and to finance the demand for dollar securities by foreigners. Second, as discussed under “International Syndicated Loan Markets” below, the international interbank markets have increasingly used repurchase agreements for interbank funding, and U.S. treasury securities are the predominant form of collateral in these markets.

The volume of foreign purchases of U.S. bonds has also been large relative to current account positions in many of the other major countries. In Japan, residents accumulated foreign fixed-income securities in 1996 amounting to 142 percent of the current account surplus of Japan, with well above half of these purchases being bonds issued by the U.S. government and U.S. corporations. Similarly, the German current account

1 Data on international bank lending from the Bank for International Settlements.
EMU in Europe and with the financial system in Japan. It is difficult to quantify the role of these various factors in recent movements of the exchange rates among the major currencies. Perhaps the least tangible factor is that associated with uncertainties about EMU and banking problems in Japan. It is noteworthy, however, that recent analysis by some market participants attribute about half of the dollar’s rally against the deutsche mark since mid-1996 specifically to EMU optimism.2

Volatility in Foreign Exchange Markets

Ample liquidity in the international financial markets and the lack of inflationary pressures helped to maintain low volatility in foreign exchange markets despite large movements in exchange rates among the major currencies (Figures 39–40). The absence of volatility has been especially marked for the currencies of the traditionally higher-yielding industrial countries, both because capital inflows to higher-yielding markets added liquidity to foreign exchange markets, and because the same factors that worked to strengthen many of these currencies also reduced risk premiums for holding these currencies. Specifically, a change in the stance of macroeconomic policy, which has emphasized low inflation and fiscal conservatism, contributed to a sharp reduction in uncertainty regarding the key currency market fundamentals—inflation and fiscal policy.

In the European Union, improved fundamentals have been closely tied with increased optimism that EMU would proceed in 1999. As a result, markets have

priced in not only observed improvements in fundamentals, but also an improved outlook for the future course of macroeconomic policy as EU countries seek to participate in EMU at an early stage. As a result, the currencies of most EU countries, and particularly those of the higher-yielding—or “non-core”—countries, have appreciated against the deutsche mark. This facilitated the reentry of the Italian lira, and the entry of the Finnish markka, into the ERM in late 1996. The strongest currencies in Europe since early 1996 have been the pound sterling and the Irish pound, both of which have received additional support from strong economic growth and expectations of rising interest rates. The strength of the Irish pound has attracted considerable attention because of its inclusion in the ERM and the fact that it has risen about 10 percent since mid-1996 above its central rate against the deutsche mark. The market’s interest in the Irish pound’s strength within the ERM stems from concerns about what entry rate will be used for the pound when EMU begins.

Reduced volatility in foreign exchange markets in 1996 strongly affected turnover in spot foreign exchange markets, particularly European foreign exchange markets. Although recent data on turnover in the global foreign exchange market are not available, lower volatility has been widely pointed to as an explanation for the marked scaling back of European foreign exchange trading operations of the major market participants. Activity in currency derivative markets was unaffected by the absence of turbulence in the foreign exchange markets, as turnover continued to expand briskly. In the over-the-counter markets, the

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Figure 40. Implied Volatility: Yen and Deutsche Mark Three-Month Forwards

Source: Bloomberg Financial Markets L.P.
Note: Implied volatility is a measure of the expected future volatility of the currency based on market prices of the call options on forwards on the currency.
notional principal of currency swaps rose 18 percent at an annual rate during the first half of 1996. On the exchanges, currency futures and options volumes rose 19 percent in 1996 over 1995, in part reflecting a rebound after the sharp drop in 1995. Reduced volatility and turnover in spot foreign exchange rates undoubtedly slowed the demand for currency derivatives, but the structural growth of derivative markets associated with the prevalence of risk management continues to expand derivative markets (see the “Derivative Markets” section below).

This increased use of foreign exchange derivatives for risk management is reflected by reportedly brisk activity in binary range options. These instruments are an effective tool for hedging volatility because their payoff structure is tied to whether or not the exchange rate stays within a specified range. Market participants report that positions of this type were widely used in the French franc–dollar, dollar–yen, deutsche mark–French franc, and many of the other European bilateral exchange rates in 1996. On the long side of these positions, U.S. hedge funds and other high net worth investors are reported to have placed large bets that EMU or official intervention by the Bank of Japan would ensure stable exchange markets in 1996 and early 1997. A notable instance occurred in the fall of 1996, when there were reportedly a large volume of dollar–yen range barriers issued with a range of ¥112–115. On October 29, the dollar reached ¥114.88, just below the knock-out level. Market participants reported that at the time the dollar was temporarily prevented from strengthening further on account of massive selling of dollars by dealers, hedge funds, and others with large long positions in dollar–yen range barriers.

One method of gaining some insight into the market’s assessment of the direction of the major exchange rates in the future is to study information contained in asset prices. Distributions of the major exchange rates computed from foreign currency options premiums are a way to gauge the market’s expectation about the range of possible future values for exchange rates (see Appendix 1 at the end of this annex). This technique reveals considerable dispersion in the market’s assessment of future values for the yen–dollar rate.

### Bond Markets

**Overview**

Low interest rates in core Europe and Japan (see Figures 35–36), as well as continued international diversification of U.S. investors’ portfolios, led to substantial capital flows from the major industrial countries into the higher-yielding bond markets. In conjunction with low, and in some countries declining, inflation rates, these capital flows to the higher-yielding markets were instrumental in reducing yields relative to the major benchmark yield curves and in curtailing volatility in bond markets. The narrowing of spreads attracted considerable attention within the context of EMU as convergence plays were once again established in those markets, but the compression of spreads in Europe was a reflection of a global phenomenon that included the higher-yielding industrial countries outside of Europe—Canada, Australia, and New Zealand—the emerging markets, and corporate bond markets (Figures 41–43). This favor-
able environment for borrowers caused new issuance of fixed-income securities to reach record levels in the international markets and in most of the higher-yielding domestic bond markets. The yield-seeking behavior of investors was reflected also in international bond markets by the strong demand for dollar-denominated paper: the share of dollar-denominated bonds issued in the international markets more than doubled in 1996 over the previous year, whereas the share of yen bonds fell almost 80 percent and the share of deutsche mark issues fell close to 40 percent.

The narrowing of sovereign interest rate spreads globally has in large part been due to low inflation and progress toward fiscal consolidation. Nonetheless, the degree of spread compression may have been amplified by plentiful global liquidity in international financial markets and the related yield-seeking behavior of investors, which has accompanied the sharp decline in interest rates in Japan and core Europe. Additionally, capital inflows into U.S. securities markets were much greater than what was necessary to finance the current account deficit and may, therefore, have contributed to the narrowing in spreads as this capital was effectively intermediated in the United States and reinvested in foreign bond markets (Table 22; see also Table 3).

**European Monetary Union and Convergence Plays**

Spreads in European fixed-income markets (relative to German benchmarks) peaked in early 1995 as a result of the flight to quality associated with the global bond market correction in 1994 as well as the Mexican crisis that developed later in the year. The subsequent narrowing of spreads continued in 1996 because of further easing of monetary policy in Europe and an improved outlook for EMU. The most notable narrowing of spreads occurred in those countries with high spreads at the start of the period. Specifically, the Italian 10-year yield spread narrowed by 350 basis points from early 1996 through end-May 1997, Spanish spreads fell 300 basis points, and Swedish spreads fell 130 basis points. In core EMU countries, where spreads were thin at the beginning of the period, they narrowed to the point that French and Dutch long-term yields traded below deutsche mark yields by late 1996. The United Kingdom is the notable exception to
this latest round of convergence plays, a fact that has been attributed to the asynchronous cyclical position of the United Kingdom versus much of continental Europe, and to considerable uncertainty about when the United Kingdom will participate in EMU.

For the higher-yielding EU countries, from January 1996 to end-May 1997 yield spreads had narrowed by similar magnitudes at the short and long ends of the yield curves. Specifically, from January 1, 1996, through end-May 1997, the difference between rates paid on deutsche mark one-year deposits and Spanish peseta and Italian lira one-year deposits narrowed by 300–350 basis points, compared with the 270–285 basis point reduction in spreads on seven-year deposits for these currencies. Thus, the downward shift in yield curves relative to the deutsche mark curve was only slightly greater at the short end than at the long end of the curves.

The convergence of interest rates in Europe is often attributed to the improved fundamentals (inflation and fiscal accounts) in peripheral countries. The renewed focus on EMU, and the increased likelihood that it will begin on schedule, have shifted expectations of the future path of fundamentals in the higher-yielding EU countries in close alignment with the criteria of the Maastricht Treaty. As discussed below, there is considerable consensus among market participants that these improvements in current and expected future fundamentals have been the primary driving force behind the convergence process, rather than extraneous factors such as excess liquidity.

The combination of monetary easing and convergence plays that narrowed interest rate spreads produced a favorable environment for fixed-income investors, especially for investors in the higher-yielding countries (again with the notable exception of the United Kingdom). Total returns on long-term bonds of maturities exceeding 10 years in 1996 amounted to almost 50 percent in Italy, 34 percent in Spain, 25 percent in Sweden, and on the order of 10–15 percent in core Europe. By comparison, with monetary policy leaning in the opposite direction, the total return on U.S. treasury bonds in 1996 was reduced by price depreciation (Table 23).

Statistics on “buy-and-hold” positions understate the (annualized) returns earned on aggressive convergence plays. Market participants report that these convergence plays were very different from those implemented in 1992. In the earlier episode, convergence plays typically exploited yield differentials in spot markets in an environment of managed exchange rates. These spot market convergence positions would involve funding a long position in the higher-yielding bond with a short position in German Bunds, or even more simply—but more capital intensive—establishing a long position in the higher-yielding bond. In either case, if the yield on
ment in the international securities markets: financial institutions are accounting for a larger percentage of new issues by industrial countries in these markets. Indeed, currently almost three-quarters of issuance in the international markets by industrial countries is attributable to financial institution fund-raising.

In domestic debt securities markets, issuance grew at a much more moderate pace, just over 3 percent in 1996. Private sector issuance grew somewhat faster at about 11 percent, whereas public sector issuance fell in all of the major countries except Germany, Italy, Spain, and the United States. Among the major countries, private sector issuance was particularly strong in most dollar-bloc countries—Canada, Australia, the United Kingdom, and the United States. By contrast, issuance actually fell by private sector entities from

Source: J.P. Morgan.
in 1996 over 1995, or more than double the level in 1994. Syndicated loans to U.S. borrowers, however, soared 386 percent in 1996, an increase of $218.4 billion, which is more than the $213 billion increase in announced credits to all other countries combined.

Japanese banks continued their retreat from international lending markets in 1996, and this worked to hold back overall activity, especially in the interbank market: international lending by Japanese banks contracted by $20 billion in 1996, while fund-raising by Japanese banks in the international markets fell by $7.5 billion (Table 27 and Statistical Appendix Table A4). In terms of the share of international banking assets by nationality of banks, Japanese banks dropped 3 percentage points in 1996, which pushed their share to a 13-year low of 22 percent. Activity by U.S. banks in the international markets was buoyed by increased demand in the Eurodollar market and financing associated with the increased demand by foreigners for U.S. bonds. Much of the activity in international banking markets was associated with the aggressive pursuit of foreign business by European banks, and especially German, Italian, Benelux, Swiss, and U.K. banks. Market participants report that convergence plays associated with EMU have been an important factor in the increased activity of European banks.

It has been widely reported that margins continued to come under pressure in 1996, but this is not reflected in data on weighted-average spreads for OECD countries (see Figure 45). These aggregate loan margins may mask the fact that lending activity has expanded into new areas geographically as well as to new, lesser-known names with reportedly slim risk-adjusted margins. Indeed, the evidence is clear that margins on loans to non-OECD credits did narrow in 1996. In any case, these considerations prompted once again warnings from regulators that diligence must not be ignored in extending credits at razor-thin margins. U.S. regulators, in particular, expressed concerns also with the lengthening of maturities and relaxation of covenants to higher-risk borrowers.

Structural Developments

A notable development in cross-border banking is an increased displacement of traditional interbank credit by repurchase agreements (repos). There are many varieties of transactions that could be classified as repos, but they all consist of a contract that functions as a collateralized loan, and an agreement to repay the loan—repurchase the collateral—by a specified time (typically less than a week). The U.S. repo market is the oldest and also the largest such market, not least because most other countries have only recently introduced repo markets—most often owing to deregulation of money markets. For instance, repo markets opened in 1997 in Germany and in 1996 in the United Kingdom.

Only the international repo market comes close to the size of the U.S. repo market, a fact that reflects in large part the key role of U.S. institutions in the international markets and, thus, the integration of the U.S. domestic repo market with the international repo market. Recent estimates place outstanding repos at about $1 trillion in the international market—or roughly 10 percent of the stock of gross international bank lending—which is similar in magnitude to the U.S. market (Table 28). Assuming an average life of about one week, this suggests annual turnover in the neighborhood of $40–$50 trillion. More important, the growth rates of repo markets have been high: the U.S. repo market has grown at about 20 percent annually in the 1990s, and during their first year of operation, repo markets in the United Kingdom and elsewhere have expanded very quickly.

The proliferation of repo agreements in interbank markets is attributable to several factors. First, there has been a heightened awareness of the credit risk associated with banks’ expansion into less familiar geographic markets and also perhaps increased concern about the credit risk associated with advancing traditional lines to some of the major banks active in the international markets. Second, with banks increasingly active in securities markets, the repo market provides access to cheaper short-term funds than uncollateralized funds. Similarly, the other side of the

\[\text{Figure 45. Spreads on Eurocredits}^1\]

\[\text{(In basis points)}\]

\[\text{Source: Organization for Economic Cooperation and Development (OECD).}\]

\[^1\text{Weighted average of spreads (over LIBOR) applied to Eurocredits signed during the period. Tax-sparing loans as well as facilities classified under “other debt facilities” are excluded.}\]
Figure 46. Major Industrial Countries: Stock Market Indices
(Indices, January 1970 = 100)


the balance of risks to earnings is below analysts’ forecasts. These risks derive from the observation that profit margins cannot continue to improve in an environment of near-capacity economic activity and tight labor markets. The unemployment rate in the United States reached a quarter-century low of 4.9 percent in April 1997.

There are other reasons to be cautious about current valuations of U.S. equities (see Figure 10). First, dividend yields at about 2 percent have fallen to historic lows and are about half their long-term average. This fact may be partly explained by changes in tax laws and an increasing share of tax-exposed investors. Moreover, current dividend yields are not unusual in an international perspective: dividend yields in 1996 were under 2.5 percent in Japan, Germany, Italy, Canada, Sweden, Switzerland, Austria, Denmark, Finland, and Norway, and above 3.5 percent only in the United Kingdom, Australia, Belgium, and New Zealand. Second, the market-price-to-book ratio, and the closely related Tobin’s q ratio, indicate substantial departures from their historical ranges. Although largely explained by the shift away from capital-intensive industries to services, the rise in the ratio of equity prices to book value is still extraordinary. And third, the average price-earnings ratio, while not yet outside its long-term range, is clearly approaching the upper end. On the other hand, given the favorable interest rate environment, the equity-yield gap, which measures the difference between long-term bond yields and the inverse of the P/E ratio, remains within its historical range and, significantly, is still well below the levels reached prior to the 1987 stock market crash. Also, some analysts have argued that the dividend yield is now a less relevant indicator because many investors hold equities for capital gain rather than current income, and also that price-asset ratios have become less meaningful in view of the growing importance of service-based industries.

Some market commentators have suggested that it is inappropriate to judge current valuations by comparing standard valuation indicators to historical ranges. The argument put forward is that the U.S. business cycle has fundamentally changed insofar as the length of economic expansions has increased while the length of economic recessions has decreased. Possible reasons for this structural change include just-in-time inventory management, trade liberalization, more flexible labor and capital markets, and financial market deregulation. Thus, the argument goes, corporate earnings have become less volatile, so the equity risk premium (over government bonds) has declined. Interpreting this argument in the context of the usual model for equity prices as representing the present discounted value of dividend payments, the associated decrease in the discount rate (from a drop in the risk premium component) can easily produce the conclusion that equity prices could increase sharply over a short period of time just owing to a modest decrease in the risk premium. Note that this hypothesis is equally applicable to explaining the narrowing in corporate bond yield spreads discussed under “Bond Markets” above. It is difficult to test this hypothesis as the risk premium is unobservable and estimates can vary widely. Nonetheless, although equity price volatility has shown some increase recently, earnings volatility has dropped sharply, which is consistent with this hypothesis (Figure 48).

On balance, it does not seem that U.S. equity markets are as far out of line as they were in 1987 or as Japanese markets were in 1989, when bond yields were high and rising, corporate earnings were much weaker, monetary policy was stimulative for several years leading up to the markets’ corrections, and general asset-price inflation was apparent, especially in real estate markets (see Appendix 3 at the end of this annex). However, they clearly are at levels that make them vulnerable to negative shocks in the form of higher interest rates, which played an important role in the last two major stock market crashes (the 1987 U.S. and 1989 Japanese corrections), or lower corporate earnings. Also, market volatility has increased significantly in 1996, though this appears to represent a return to more normal levels after a period of unusual stability (see Appendix 2). Finally, the rapid run-up in

equity prices in late 1996 and into 1997—which seems more difficult to justify on the basis of improved fundamentals—also may suggest a cause for concern. One of the factors that has helped propel the U.S. market upward has been significant net inflows from small investors, routed mostly through the conduit of equity mutual funds (Table 29 and Box 5). From 1989 to 1995, household (direct and indirect) holdings of equities rose from 32 percent of all households to 41 percent, and equity holdings as a share of total financial assets of households rose from 26 percent to 40 percent.16 The net inflow into U.S. equity mutual funds from January 1995 through April 1997 totaled $424 billion, almost $300 billion of which occurred since the start of 1996. To put the role of equity mutual funds into perspective, in April 1997 they managed $1.88 trillion in assets, which is equal to 20 percent of the market capitalization of the New York Stock Exchange, the American Stock Exchange, and NASDAQ (the over-the-counter market) combined.17 The relative attractiveness of expected returns on equities, in comparison with other savings vehicles, has been at work here. But the historically low volatility of stock prices in recent years (see Appendix 2) may also have reassured investors. Recently, volatility, as reflected in options premiums, has been picking up (Figure 49). It remains to be seen how recent equity investors will react to an environment where equities appear more risky and turn in less spectacular gains.

There are reasons to expect that a sharp correction in equity prices—which would reduce price-earning ratios to near the long-term average—need not have serious consequences for the U.S. economy. Consumer spending has not been driven sharply upward.

16 See Board of Governors of the Federal Reserve System (1997).
17 These data are from the Investment Company Institute.

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**Table 29. U.S. Mutual Funds: Net New Cash Flow and Total Assets**

*(In billions of U.S. dollars)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Net New Cash Flow</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>To equity funds</td>
<td>To bond and income funds</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Domestic</td>
</tr>
<tr>
<td>1984</td>
<td>54.2</td>
<td>5.9</td>
</tr>
<tr>
<td>1985</td>
<td>68.3</td>
<td>8.5</td>
</tr>
<tr>
<td>1986</td>
<td>164.4</td>
<td>21.9</td>
</tr>
<tr>
<td>1987</td>
<td>40.1</td>
<td>19.1</td>
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<tr>
<td>1988</td>
<td>–23.1</td>
<td>–16.2</td>
</tr>
<tr>
<td>1989</td>
<td>73.0</td>
<td>5.8</td>
</tr>
<tr>
<td>1990</td>
<td>44.5</td>
<td>12.8</td>
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<td>1991</td>
<td>112.3</td>
<td>39.5</td>
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<tr>
<td>1992</td>
<td>156.5</td>
<td>79.2</td>
</tr>
<tr>
<td>1993</td>
<td>229.2</td>
<td>129.6</td>
</tr>
<tr>
<td>1994</td>
<td>84.6</td>
<td>119.3</td>
</tr>
<tr>
<td>1995</td>
<td>212.8</td>
<td>128.2</td>
</tr>
<tr>
<td>1996</td>
<td>323.7</td>
<td>221.6</td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
</tr>
<tr>
<td>January</td>
<td>53.9</td>
<td>29.1</td>
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<tr>
<td>February</td>
<td>40.9</td>
<td>16.1</td>
</tr>
<tr>
<td>March</td>
<td>10.1</td>
<td>10.7</td>
</tr>
<tr>
<td>April</td>
<td>–5.8</td>
<td>15.7</td>
</tr>
</tbody>
</table>

1 Estimated.
Although the markets for derivative financial instruments, particularly in the major industrial countries but increasingly also in the developing world, are large by any measure, it is clear that sustained growth of the global derivative markets is not likely to abate soon. This momentum derives both from the major countries—where derivative markets for some of the largest risks, such as credit risk, are far from mature—as well as from the newer markets in the developing world—which have recorded the most dramatic growth in exchange-traded derivatives activity in the 1990s. Further growth in the global derivative market will present challenges to private risk management technologies and to supervision and regulation. Nonetheless, these markets, and the instruments traded in them, are increasingly better understood by dealers in the over-the-counter markets and by the financial and nonfinancial institutions that are the end users of derivative products.

### Structural Changes in Derivative Markets

Three key structural changes have accompanied the rapid growth of derivative markets. First, derivatives have increasingly become a low-margin, high-volume business. This commoditization of derivative markets does not necessarily imply that the markets are becoming less personalized, or more centralized, but rather simply that the products traded in these markets have become familiar to market participants, and these markets have also become concentrated in well-understood, or "standard," instruments. Some have attributed this standardization of products to the huge losses incurred by financial and nonfinancial enterprises associated with large derivative positions—including Orange County, Procter & Gamble, MG Corporation, and Barings. Although these losses were not always associated with positions in exotic products, the magnitude of the losses provoked an awareness and reevaluation of the purposes and risks of derivatives in general. The immediate consequence was a widespread withdrawal of demand for exotic, highly leveraged structures and a shift toward simpler structures—especially currency and interest rate swaps—and a refocusing on the risks and benefits of using these instruments. Some structures that have traditionally been regarded as exotic—notably, digital and barrier structures—have become mainstream products.

This category of derivative products has its payoff tied—often in a binary fashion—to whether an underlying asset price reaches some trigger level; it has become mainstream because it facilitates the trading of volatility of asset prices directly. Products in this category accounted for an important share of activity in the currency and interest rate segments of the over-the-counter markets in 1996 and 1997.19

19See, for example, Euromoney (1997).
compute market based probabilities associated with the exchange rate being within specific ranges. For example, on this day the market priced the options as though it assigned a 15 percent probability to the yen-dollar rate being below 104 in early September and an equal probability to the rate being above 118.3. The mean of the distribution, at 111.3, is below the peak of the distribution, reflecting a skew toward relatively large appreciations of the yen against the dollar.

There are two important caveats attached to any technique that extracts probabilities from options prices. The first concerns inferences about the shape of the distribution in the range above the highest strike price and below the lowest strike price. For the day plotted, the lowest available strike price was 98. The only information the options data provide about the distribution below 98 is the probability of $S$ being below 98 and the mean of this portion of the distribution ($E[S | S \leq 98]$). If the mean of this portion of the distribution were 96, for example, then the options data alone could not distinguish between a distribution that assigned this probability evenly over the range from 95 to 97; a distribution that assigned this probability evenly over the range of 94 to 98; and any other distribution below 98 that has a mean of 96. For many purposes, such as the computation of the 15 percent confidence limits given above, the distinction between these “observationally equivalent” distributions is irrelevant. Nonetheless, it is important to note that the particular shape of the distribution above the highest strike and below the lowest strike is largely determined by the assumptions one makes about the functional form of the distribution.

The second caveat pertains to the interpretation of the estimated distribution. As noted above, the distribution implied by options prices can provide a context for the mean interpretation of the forward rate. As with forward rates, option prices incorporate market participants’ preferences, or attitudes toward risk, as well as their beliefs about the possible future values of the underlying price. Thus, the probabilities calculated from options do not reflect market participants’ beliefs alone. Instead, they reflect how much market participants are willing to pay to insure against certain outcomes, which incorporates both the probabilities attached to these outcomes as well as the costs associated with them. Without detailed information about the preferences and portfolio holdings of market participants, it is impossible to disentangle the influence of preferences and beliefs. (This difficulty arises with any inference made from financial market prices and is not confined to forwards and options.) Nonetheless, the information in options prices provides a glimpse at the range of possible outcomes that market participants consider possible and how much they are willing to pay to insure themselves against these various outcomes.

Appendix 2

Have Securities Markets Become More Volatile?

As a measure to dampen volatility in the U.S. equity market, the New York Stock Exchange begins to limit computer-guided trading once the Dow Jones Industrial Average moves by 50 points during the day. In 1996, the Dow Jones Industrial Average changed by more than 50 points from the previous day on 56 days. Compared with previous years, 1996 was truly unusual in that 50-point changes in the Dow Jones index were much more common. While this phenomenon is partly due to the rising index level, the large market moves along with worldwide financial market deregulation and the increase in international capital flows have fostered a widespread belief that volatility has increased in recent years. Critics have pointed to the introduction of derivative instruments with complex, nonlinear payoffs, and uncertain macroeconomic policies for additional causes of increasing securities market volatility.

Can one conclude that equity markets, and in particular, the U.S. equity market, have become more volatile recently? Similarly, the “bond market massacre” of 1994 has lead some observers to conclude that bond markets have become increasingly volatile in recent years. Is that a reasonable assessment?

Consider first the volatility of the U.S. equity market, as measured by the standard deviation of weekly percentage changes in the Standard & Poor 500 index.
Comparing recent volatility levels to the postwar record clearly shows that current volatility by this measure is well within the historical range of variation. The U.S. stock market actually displays less volatility now than any time since the early 1970s, and the period following the first oil crisis remains the most volatile since the 1930s (not shown). Any long-lasting effects from the most recent upsurge in volatility following the 1987 crash seem to have all but vanished.

In Japan and Germany, current volatility in the equity markets is not large compared with historical levels, and in both countries the recent trend in volatility is downward sloping. The recent boom and bust of asset prices in Japan have increased volatility but only from a historical low in the early 1980s to a level now just slightly above the average for the last 45 years. Stock market volatility in Germany peaked around the 1987 crash and again in the aftermath of the reunification and the Gulf War of 1990 but has clearly tapered off in recent years.

Next, consider bond markets, where volatility is generally lower. Events that change investors’ beliefs about future inflation typically trigger bond market volatility; oil price shocks and changes in monetary policy are prominent examples. The volatility in weekly long-term U.S. government bonds (top right panel) topped around the shift in monetary policy in 1980, and bond price volatility has fallen markedly since. The bond market turbulence in 1994 associated with the tightening of policy by the Federal Reserve Board halted a further decrease in volatility. The subsequent bouts of turbulence in 1995 and 1996, associated in part with heightened uncertainty about the
strength of the U.S. economy—and thus the possible course of Federal Reserve policy—have also kept volatility from decreasing to the pre-1980s level. This points to the key role of money market volatility in explaining recent bond market volatility, while conventional economic fundamentals such as inflation and economic growth seem to have played only minor roles.\textsuperscript{28}

Comparing volatility of weekly long-term government bond yields across the United States, Japan, and Germany shows that the recent volatility has not been unusual in a historical context in any of the countries. The relatively high volatility in recent years in Japan reflects the fluctuating yen and money market rates, arising from heightened uncertainty about the collapse in asset prices, about the health of the financial system, and about the strength of economic growth. With zero inflation and short-term interest rates near zero, signs of a substantial strengthening of economic growth could have quantitatively important effects on expected inflation and official short-term interest rates, which would then filter into the long end of the yield curve. While bond market volatility in Japan is higher now than in the unusually tranquil 1970s, it is only slightly higher than in Germany and the United States, and the most recent trend in Japan seems to be downward sloping. In Germany, bond market volatility is now close to a historical low by the measure applied here.

The increased popular concern with securities market volatility is not warranted in general. Current stock and bond market volatilities are close to their historical averages in the major economies, and the folklore effects on volatility of the bond market sell-off in 1994 persisted only in the Japanese market and are dissipating now. The Japanese experience does illustrate that economic policies that successfully achieve stable goods prices do not necessarily accomplish the more difficult task of asset-price stability.\textsuperscript{29}

\textbf{Appendix 3}

\textbf{Current U.S. Equity Prices Compared with the 1987 U.S. and 1989 Japanese Bubbles}

A natural approach to gauging whether stock prices are overvalued is to compare them with the theoretical price calculated from the discounted (expected) future stream of dividend payments that the stock has claim to. There are significant practical difficulties associated with this approach because of uncertainty about future dividends and the appropriate risk-adjusted discount rates. An alternative approach is simply to com-

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Figure52.png}
\caption{United States and Japan: Developments in Equity, Bond, and Money Markets Surrounding Significant Stock Market Increases}
\end{figure}

\textsuperscript{28}See Bank for International Settlements (1996c), and also IMF (1996).

\textsuperscript{29}See Christoffersen, Lim, and Schinasi (1997).
deterioration in asset quality and profitability at some time, which shows up in the reported returns on equity and pre-provision profits (banks with higher nonperforming loans incur greater expenses in managing their loan portfolios). Nevertheless, data reveal some major trends.

Over the 1985–94 period, the Canadian, U.K., and U.S. banking systems were consistently the most profitable in terms of core, pre-provision earnings among the G-7 countries. The average pre-provision return on assets over that period was 1.8 percent for U.S. banks, 1.7 percent for Canadian and U.K. banks, 1.1 percent for German banks, 0.6 percent for French banks, and 0.5 percent for Japanese banks (not shown). The relatively strong recent performance of the Canadian, U.K., and U.S. banks compared to those in, for example, France and Japan, is not, therefore, simply due to their having gone through the recent asset-quality cycle more quickly; banks in the three leading countries have simply been fundamentally more profitable. These profits, however, do not reflect relatively wide intermediation spreads.32 As Figure 53 shows, loan rate spreads over deposits have tended to be higher in France, Germany, and Italy compared with Canada, the United Kingdom, and the United States. A relatively higher proportion of low-margin securities and other assets, and relatively worse overall asset quality during the period, appear to explain most of the difference.

While most banks have responded to the increased competition in lending activities by expanding their noninterest earnings, banks in Germany and Japan have actually seen a decline in importance of such income. Noninterest income for the Japanese and three continental European banking systems, which is decreasing, remains a much less well developed source of income than it is for banks in Canada, the United Kingdom, and the United States. This lack of diversification in income has meant that the decline in asset quality was particularly costly, since these banks relied much more heavily on interest income. With increasing loan loss provisions and declining interest income, the banks’ profitability dropped. The real return on equity, for example, has fallen sharply in Japan and in Germany, and less so in the United Kingdom, while it has risen significantly in Canada and the United States owing to a combination of increasing underlying profitability and declining provisions. As the data in Table 33 indicate, however, it is relatively weak earnings generation that hampers the French, German, Italian, and Japanese banking systems, and which has made their recovery from their asset-quality difficulties in some cases quite difficult.33

The issue of core profitability is inextricably linked to the structure of the banking system and, particularly, the advantages that certain types of institutions may have because of different regulatory regimes, subsidies, or ownership structures that place less emphasis on returns to capital. In an environment in which banks are encouraged by the regulatory regime to maximize returns to equity capital, such features of a financial system can make it more difficult for some banks to compete. To be sure, certain of these differences can be to the detriment of the special institutions—a contributing factor to the savings and loan (S&L) crisis in the United States was the more relaxed supervisory and regulatory environment in which they operated, which allowed the S&Ls to run up very large loan losses. Similarly, the lower level of official oversight over the credit unions and credit cooperatives in Japan contributed to difficulties in those sectors. However, often the special treatment of certain types of institutions works to the detriment of the larger, internationally active, commercial banks, in part by reducing the domestic profits on which they attempt to leverage their international activities. (For example, since profit margins on retail banking services tend to be wider than on

32Nor are lower costs the explanation, as is often argued. Operating expenses as a percentage of assets have been consistently higher in Canada, the United Kingdom, and the United States, and somewhat less so in Germany, compared with France and especially Japan, where annual operating costs amount to approximately 0.9 percent of assets, compared with about 3.5 percent in the United States over the same period.

33Note that the Japanese banks only began to make significant inroads on their nonperforming loans after pre-provision earnings soared to record levels in 1995/96.
between credit institutions, whereas private systems are expected to process small-value payments.\(^{10}\)

**Intraday Liquidity**

Participants in RTGS systems may experience a liquidity shortfall whenever they need to send a payments order before receiving one. In this instance, payments may be blocked or queued until sufficient funds become available either through incoming payments or by borrowing in the market; in the limit, settlement may be delayed and gridlock may take place with systemic implications (i.e., payments cannot be processed because of a lack of sufficient funds). To avoid such events, EMU national central banks will allow intraday mobilization of reserve requirements and will provide participants in their RTGS systems with fully collateralized intraday credit in the form of daily overdrafts or repurchase agreements.

No decision has been made on whether non-EMU national central banks will be allowed to grant intraday credit in euros to participants in their RTGS systems linked to TARGET. The Governing Council of the ECB will have to choose one of the three mechanisms currently being prepared by the European Monetary Institute with the aim of preventing intraday credit granted by non-EMU national central banks from spilling over into overnight credit and thus from having a monetary impact. The first mechanism would set a limit—possibly zero—to the intraday credit in euros that the ECB would provide to non-EMU national central banks (for participants in their RTGS systems) and would impose penalty rates on spillovers. The second would just impose penalty rates. The third would require non-EMU participants to complete their operations before the closing time of TARGET, so that they would have time to avoid spillovers by borrowing euros in the money market.

If non-EMU national central banks are not granted access to intraday credit or are penalized, institutions making cross-border payments to the euro area could adapt their behavior in a number of ways. In some instances they would still channel payments through the TARGET system; in others they would not. First, non-EMU national central banks could borrow euros in the market to provide intraday credit to participants in domestic RTGS systems for cross-border payments to the euro area; in this instance, systemic risks could be reduced as much as they would be reduced with direct access to ECB’s intraday credit. Second, non-EMU banks could channel cross-border payments in euros through branches and subsidiaries in the euro area that have access to both intraday and overnight credit; the

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\(^{10}\)See European Monetary Institute (1996), p. 7.
In some countries, complicated public ownership structures are an additional obstacle to privatization and the restructuring of banking systems. In Germany, for example, savings banks (Sparkassen) carry as capital a guarantee from local municipalities, which makes it difficult for them to merge or be purchased by a shareholding company. In response to a complaint by private German banks, the European Union is currently considering whether German public-law banks (Sparkassen and Landesbanken) have an unfair competitive advantage deriving from subsidized public capital injections.

A complicated public ownership structure is also typical of the Italian banking system. Italian public banks became joint-stock corporations at the beginning of the 1990s, but many of them have remained controlled by nonprofit organizations (fondazioni), whose boards of trustees are appointed by local and central governments. The need to obtain the approval of both levels of government has often delayed privatization. Parliament is currently discussing a bill that introduces a number of incentives for fondazioni to sell off their assets, although it leaves a large degree of discretion regarding the timing and scope of the sale.

Market participants have problems monitoring and controlling banking institutions even in EU countries where private ownership prevails. This difficulty results from the lack of public disclosure on several financial activities of EU banks and from the lack of concentration of debt and equity claims, which is typical of most banking systems in the European Union. Weak corporate control is a source of concern because it may provide inadequate incentives to management and delay restructuring.51

There is also a considerable diversity of banking structures across the European Union in terms of domestic versus foreign ownership. Among the larger EU countries, the share of banking assets controlled by foreign banks ranges from 3.5 percent in Italy to 57 percent in the United Kingdom, and it is 14 percent in France, 4.5 percent in Germany, and 12 percent in Spain. Among the smaller EU countries, foreign banks have a particularly strong presence only in Luxembourg, Belgium, and Ireland.

The typology of EU banks varies considerably. Commercial banks prevail in Italy, France, Greece, Portugal, the United Kingdom, Belgium, and the Netherlands. Savings and cooperative banks play an important role in Germany, Italy, and Spain, and building societies have a large presence in the United Kingdom and Ireland. Whereas the number of banks in the latter categories has considerably declined over the last decade, the number of commercial banks has generally increased. The significance of these changes, however, should not be overemphasized be-

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50In Italy, state and local authorities controlled about 58 percent of banking assets at the beginning of 1997. This share is, however, bound to fall by an estimated 15 percent when the privatizations of Instituto Bancario San Paolo di Torino and Cariplo are completed.
51See, for example, BIS (1996a).
significant increases in their debt burden due to their exposure to the Japanese yen. Between 1980 and 1994, East Asian and Pacific countries expanded their borrowing in Japanese yen from below 19 percent to 30 percent of total debt. Although the increase in yen-denominated borrowing was due partly to large concessional loans from Japan to Asian countries and the growing role of the yen in international trade and finance, it also reflected the desire of Asian borrowers to benefit from low interest rates on yen loans compared with U.S. dollar loans. Most of the countries did not hedge their yen exposure either in local currency or in the U.S. dollar, which accounts for a large part of their foreign currency revenues. As a result, the appreciation of the yen vis-à-vis the dollar and the Asian currencies in the 1990s led to a significant rise in the dollar value of their external liabilities (Table 65). The share of yen-denominated debt in total debt was subsequently reduced to 27 percent in 1995, and the share of yen-denominated foreign reserves enlarged.

In Indonesia, for example, a third of the increase in the dollar value of the external debt between 1993 and 1995 was due to cross-currency movements, primarily the appreciation of the yen. Indonesia’s exposure to the yen has been especially costly as about 90 percent of its export revenues were denominated in dollars, while 37 percent of its external debt was denominated in yen. In the Philippines, which has a third of its external debt denominated in yen, the appreciation of the yen accounted for about half of the rise in the dollar value of the external debt in 1995. In China, the appreciation of the yen is estimated to have increased the servicing costs of the public debt by about $5 billion. In Malaysia, the sharp appreciation of the yen in 1994 bumped up the dollar value of the external debt by 6 percent. In India, the external debt increased by almost 7 percent in 1995, almost exclusively on account of exchange rate changes. The subsequent depreciation of the yen in 1996 offset some of the losses incurred by these countries.

The vulnerability of developing countries to external shocks is largely a function of the maturity profile of their foreign currency debt. A distinction needs to be made between a short-maturity foreign currency

Table 64. Long-Term Public and Publicly Guaranteed External Debt Outstanding and Reserves Excluding Gold in Selected Developing Countries, 1995

<table>
<thead>
<tr>
<th>Region</th>
<th>Long-Term Public and Publicly Guaranteed External Debt Outstanding</th>
<th>Total Reserves Excluding Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>94.7</td>
<td>75.4</td>
</tr>
<tr>
<td>India</td>
<td>79.7</td>
<td>17.9</td>
</tr>
<tr>
<td>Indonesia</td>
<td>65.3</td>
<td>13.7</td>
</tr>
<tr>
<td>Malaysia</td>
<td>15.9</td>
<td>23.8</td>
</tr>
<tr>
<td>Philippines</td>
<td>29.9</td>
<td>6.4</td>
</tr>
<tr>
<td>Thailand</td>
<td>17.2</td>
<td>36.0</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td>9.6</td>
<td>13.8</td>
</tr>
<tr>
<td>Hungary</td>
<td>23.6</td>
<td>12.1</td>
</tr>
<tr>
<td>Poland</td>
<td>41.1</td>
<td>14.8</td>
</tr>
<tr>
<td>Russia</td>
<td>100.3</td>
<td>14.4</td>
</tr>
<tr>
<td>Turkey</td>
<td>50.1</td>
<td>12.4</td>
</tr>
<tr>
<td>Western Hemisphere</td>
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<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>62.2</td>
<td>14.3</td>
</tr>
<tr>
<td>Brazil</td>
<td>96.6</td>
<td>49.7</td>
</tr>
<tr>
<td>Colombia</td>
<td>13.0</td>
<td>8.1</td>
</tr>
<tr>
<td>Mexico</td>
<td>94.0</td>
<td>16.8</td>
</tr>
<tr>
<td>Venezuela</td>
<td>28.5</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Memorandum item:  
All developing countries - 1,448.6  538.4


1 World Bank data. International reserves include the country authorities’ holding of SDRs, the reserve position in the IMF, foreign exchange holdings, and gold.

Changes in external debt are measured in dollar terms, as the latter is the main trade or invoice currency for Asian developing countries. The dollar is also the main currency against which Asian domestic currencies are managed (e.g., Indonesia, Philippines).
• When measured relative to GDP, private capital flows of the earlier era were at least as large as in the 1990–96 period and in many instances considerably larger. The main capital exporter, the United Kingdom, saw annual capital outflows averaging almost 5 percent of GDP over 1880–1914, with levels at times reaching 7 percent and even 9 percent in the years before World War I. France and Germany saw smaller flows relative to GDP that, on average, were about 3 and 2 percent, respectively, over the same period (Figure 58). Among capital importers, between 1881 and 1890 annual inflows to Australia averaged 9.5 percent of GDP and about 2.5 percent of GDP in the next decade; Canada had annual inflows amounting to over 6 percent of GDP in the 1880s, about 4.5 percent in the 1890s, 7 percent in the first decade of the twentieth century, and over 14 percent between 1910 and 1913 (Figure 59).
• Foreign capital was an important source of finance for investment in the 1870–1914 period—for example, it financed over a third of domestic investment in New Zealand and Canada and about a quarter of that in Australia and Sweden (Figure 60). In comparison, capital inflows have amounted to about 10 percent of domestic investment in emerging markets during the 1990s.


1The index is defined as the average of the absolute values of current accounts relative to GDP for major capital-importing and capital-exporting countries. The countries include Argentina, Australia, Canada, Denmark, France, Germany, Italy, Japan, Norway, Sweden, the United Kingdom, and the United States.

• Portfolio investments were far more important than direct investment. In the 1870–1914 period direct investment represented about 10 percent of the United Kingdom’s foreign investments.5 By contrast, foreign direct investment has accounted for 39 percent of net private capital flows to emerging markets in the 1990s.
• Some capital-importing countries accumulated a part of the inflows as official reserves (gold and foreign exchange). Available estimates indicate that international reserves quadrupled in Russia and Belgium, doubled in India and Sweden, and increased substantially in the United States during 1870–1914.6 As mentioned in Annex I, emerging market reserve accumulation amounted to almost half of total net flows during 1990–96

5In 1913, the three main creditors, the United Kingdom, France, and Germany, held 80 percent of the US$35 billion stock of securities issued by capital-importing countries. This was six times larger than their holdings in 1874 and indicates a net capital outflow of some US$30 billion (Bloomfield, 1968; United Nations, 1949).
6Bloomfield (1963).
• When measured relative to GDP, private capital flows of the earlier era were at least as large as in the 1990–96 period and in many instances considerably larger. The main capital exporter, the United Kingdom, saw annual capital outflows averaging almost 5 percent of GDP over 1880–1914, with levels at times reaching 7 percent and even 9 percent in the years before World War I. France and Germany saw smaller flows relative to GDP that, on average, were about 3 and 2 percent, respectively, over the same period (Figure 58). Among capital importers, between 1881 and 1890 annual inflows to Australia averaged 9.5 percent of GDP and about 2.5 percent of GDP in the next decade; Canada had annual inflows amounting to over 6 percent of GDP in the 1880s, about 4.5 percent in the 1890s, 7 percent in the first decade of the twentieth century, and over 14 percent between 1910 and 1913 (Figure 59).

• Foreign capital was an important source of finance for investment in the 1870–1914 period—for example, it financed a third of domestic investment in New Zealand and Canada and about a quarter of that in Australia and Sweden (Figure 60). In comparison, capital inflows have amounted to about 10 percent of domestic investment in emerging markets during the 1990s.

• Portfolio investments were far more important than direct investment. In the 1870–1914 period direct investment represented about 10 percent of the United Kingdom’s foreign investments. By contrast, foreign direct investment has accounted for 39 percent of net private capital flows to emerging markets in the 1990s.

• Some capital-importing countries accumulated a part of the inflows as official reserves (gold and foreign exchange). Available estimates indicate that international reserves quadrupled in Russia and Belgium, doubled in India and Sweden, and increased substantially in the United States during 1870–1914. As mentioned in Annex I, emerging market reserve accumulation amounted to almost half of total net flows during 1990–96.
and as a consequence reserve holdings more than tripled over the period.

- Although lending was mostly financed by private sources, the bulk of international borrowing for investment depended directly or indirectly on government action. Most of the borrowing was undertaken by governments, primarily for railway construction, utilities, and public works. The private borrowing was largely done by railroad companies with the assistance of government guarantees.

A combination of push and pull factors explains the movement of capital during 1870–1914. An important institutional feature was the role of investment banks in providing a stimulus to global flows. Given the high fees and commission, it was in the interest of merchant and investment banks to provide information about the profitability of ventures in the newly developing areas and persuade representatives of foreign governments and railroads to issue bonds. The financial intermediaries had considerable bargaining power vis-à-vis both bondholders and the borrowers because of their advantage in collecting and processing information and their ability to raise vast sums of money. In general, investors earned relatively high returns on their portfolio investment. After adjusting for losses due to defaults, Edelstein (1982) estimates that investors earned returns between 160 and 390 basis points over domestic portfolio investments in relatively safe instruments.

The period from 1870 to 1914 was characterized by high variability in capital flows between capital-exporting and capital-importing countries. Investment flows from the United Kingdom were buoyant in the early 1870s, most of the 1880s, the early 1890s, and then again in the years before World War I. It is widely accepted that capital flows from the United Kingdom were countercyclical in nature. A decline in investment demand and thereby interest rates in the United Kingdom would stimulate a capital outflow as investors sought higher returns abroad. This outflow of capital was facilitated by the activities of investment banks, which provided a channel for investors to acquire information about the profitability of ventures in newly developing areas.

Figure 59. Net Capital Inflows, 1880–1913
(In percent of GDP)

Source: Bloomfield (1968).
most often took the form of purchases of bonds issued by borrowers in the capital-importing countries. These funds were used to finance various types of investments, including the expansion of export-related industries. At some point, a recovery in the United Kingdom and/or an increase in the discount rate by the Bank of England to stem its loss of gold reserves would lead to higher interest rates in the United Kingdom and hence a reduced capital outflow. The balance of payments positions of the capital-importing countries would not necessarily deteriorate, however, if the investments funded by earlier inflows led to increased exports to a buoyant United Kingdom economy. The higher export revenues would then offset the decline in capital inflows.

Two factors would at times disrupt this countercyclical interaction between trade and capital flows. First, as capital outflows from the United Kingdom declined, in some cases the export-related projects in borrowing countries were incomplete or otherwise incapable of producing enough exports to offset the decline in capital inflows. Second, even if borrowing countries were in a position to increase their exports, the rise in interest rates in the United Kingdom sometimes led British companies to sell off or otherwise reduce their inventories of imported goods. This would often lead to a sharp decline in the terms of trade of the capital-importing countries at the same time that capital inflows were declining. In some cases, the combination of slowing capital inflows and stagnant or falling export receipts would lead to slower economic growth and, as a result, stagnant or falling domestic revenues and expanding fiscal deficits. Occasionally, this situation would not be corrected quickly enough, and the borrower would have to suspend debt-service payments or abandon its gold standard commitment or both (Table 70). At times, such turning points were accompanied by institutional failures, including banking crises, in the capital-importing and (less frequently) in the capital-exporting countries.

Reaction to failures in contractual obligations depended on the motivation for the lending. When borrowers of development finance did default, assistance was given at the same time as some “conditionality” or accommodation was imposed by the creditors. While it was in the interest of the newly developing countries to have access to the London capital market and the political and economic dominance of Britain assured that international debt contracts were honored, it is worth noting that the British government generally followed a policy of laissez-faire and the capital market operated virtually free of any intervention. As Fishlow puts it, “The government offered friendly offices but no intervention, diplomatic or more forceful, on behalf of bondholders.”

Contrast, the reaction of capital-exporting nations to defaults on sovereign loans raised to close fiscal gaps was, at times, quite drastic. It could involve direct intervention to restructure public finance and its administration.

High capital mobility after World War I lasted only until the advent of the Great Depression and represented an attempt to reestablish the capital market relationships that had existed before the war. But three major shifts had changed the environment: (1) the United States had become a major capital-exporting country; (2) the United Kingdom’s lending had become more focused on its colonies, while the United States took up the role of major purchaser of bonds issued by Latin American and European borrowers; and (3) a much greater share of international lending went to finance public sector nondevelopment expenditures rather than investments.

The United States saw its holdings of foreign assets rise from $6.5 billion in 1919 to $14.8 billion in 1929. External investment by the United States was, on average, 1 percent of GNP in the 1920s, while that of the United Kingdom, which had been 4 to 5 percent of GNP in the first half of the 1920s, fell to below 2 percent in the second half. The limited information available about the distribution of capital among individual capital-importing countries suggests that some countries were more affected than others by the changes in the international environment. In Canada, external debt payments exceeded capital inflows between 1923 and 1926, but there were net inflows amounting to 2 percent of GNP in the late 1920s. By comparison, in...
Box 9. Liberalization of Capital Controls in Emerging Markets

The figure plots an index of capital controls in emerging markets. This index is based on information on 163 countries obtained from the IMF’s annual survey of Exchange Arrangements and Exchange Restrictions and constructed using the methodology of Bartolini and Drazen (1997). Three dummy variables for each country for each year were constructed corresponding to whether a country restricted capital account transactions, used multiple exchange rate practices, or enforced surrender requirements for export proceeds. An index for each country for each year is obtained by summing its dummy variables and dividing by three. It varies between zero and one, with zero representing a complete lack of controls and one the existence of all the restrictions mentioned above. The aggregate capital control index shown is the mean of the country indices for each year.

The loosening of capital controls in emerging markets since the mid-1980s is clearly brought out by the index. The figure also suggests that the decline in capital account restrictions may have contributed to the recent boom in capital flows to emerging markets. The correlation between the index and capital inflows is –0.3 over the period shown and provides some simple corroboration for the claim that liberalization of capital account restrictions and constructed using the methodology of Bartolini and Drazen (1997). Three dummy variables for each country for each year were constructed corresponding to whether a country restricted capital account transactions, used multiple exchange rate practices, or enforced surrender requirements for export proceeds. An index for each country for each year is obtained by summing its dummy variables and dividing by three. It varies between zero and one, with zero representing a complete lack of controls and one the existence of all the restrictions mentioned above. The aggregate capital control index shown is the mean of the country indices for each year.

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Securitization has involved a greater use of direct debt and equity markets—in which the lender or investor holds a tradable direct claim on the borrower or firm—and a shift away from indirect finance—in which an intermediary holds a nontraded loan asset and the saver holds a liability (which may be tradable) on the intermediary. Another form of securitization has involved the creation of exchange-traded futures and options contracts. In this case, a certain type of risk, usually one associated with price volatility, is securitized. While the substitution of direct for indirect instruments has been driven in part by the lower relative cost of borrowing on securities markets by the more creditworthy borrowers (who often have a higher credit rating than banks), the growing importance of both exchange-traded and over-the-counter (OTC) derivatives has been strongly affected by the desire of portfolio managers (particularly from large institutional investors) to either hedge or increase their exposure to certain types of asset-price risks.

A final “structural” factor that has been especially important for the pricing of derivative products has