

# DEVELOPMENTS AND TRENDS IN MATURE CAPITAL MARKETS

## CHAPTER II

Throughout most of the 12-month period ending in June 2000, developments in international capital markets continued to be strongly influenced by the perception that the U.S. economy offered the highest risk-adjusted asset returns in the major currency areas. Favorable perceptions reflected the continued strong performance of the U.S. economy, uncertainty about growth prospects in Europe, and the halting economic and financial recovery in Japan. While this combination of factors might not explain all of the international reallocations of capital and risks, or all asset-price movements, it was an important part of the background against which these adjustments occurred. Beginning with the April–June 2000 period, this favorable sentiment about U.S. returns may have changed.

Throughout most of the period under review, and despite uncertainty about the sustainability of U.S. productivity growth, U.S. markets continued to receive considerable attention from international investors, as reflected in U.S. financial flows and asset price dynamics. Even when U.S. equity markets declined sharply, investors temporarily shifted capital into U.S. fixed-income markets and reentered equity markets when they thought equity valuations had fallen to sufficiently attractive levels. From time to time, investors' faith in the sustainability of U.S. asset returns faltered, and there were occasional periods of high volatility, most notably in U.S. equity markets and in the value of the dollar, which most likely reflected a rebalancing of risks in portfolios. Overall, however, the value of the dollar first appreciated, then depreciated, and on balance held its ground (on a nominal weighted-average basis), despite the growing current account deficit and mounting uncertainty about whether U.S. productivity gains would continue to support high growth with low inflation.

Strongly reflecting investors' sentiments, U.S. investment themes increasingly resonated internationally. Most notable was the worldwide and concentrated allocation of funds into the equity and debt instruments of companies in the technology, telecommunications, and media sectors. Market developments also reflected the rebalancing of portfolios away from government bonds and toward private markets as fiscal positions consolidated in many countries. Reflecting these tendencies, although a continued net capital flow out of Europe weighed heavily on the euro, European equity and corporate bond markets appreciated sharply as capital flowed into them. Some of Japan's markets benefited as well from improved investor sentiment. In late summer and early fall 1999, signs of an economic recovery in Japan persuaded some international portfolio managers—others soon followed—to raise their Japanese equity and, to a lesser extent, bond holdings from underweighted positions relative to Japan's share of global asset markets and the size of the real economy. This rebalancing was associated with a sharp rise in the yen and a rally in Japan's equity market that was sustained until recently.

Toward the end of the period under review, investors increasingly focused on the uncertainties in the U.S. economic outlook, especially on the possibility that monetary policy would tighten when there emerged evidence of persistent rising wage and price pressures and an overheating U.S. economy. At the same time, the Japanese yen showed signs of strengthening further against the dollar, and the euro began to recover from record lows—both indications that investor sentiment might be changing to reflect uncertainties about the sustainability of dollar asset returns. At end-June 2000, considerable uncertainties remained. The key risks reflect these and related uncertainties summarized in the following questions. Is inflation on the rise in the

United States, and what would this mean for U.S. and international portfolio adjustments and asset markets? How far will the euro appreciate, and what impact might it have on the process of financial and corporate restructuring that is now under way and making demands on European finance and financial markets? Will Japan's asset markets adjust smoothly if and when the recovery begins in earnest, and has financial and corporate restructuring established the basis for an enduring expansion in the world's third largest economy? Finally, have risk management practices and financial markets infrastructures improved sufficiently since the Asian, Russian, and Long-Term Capital Management (LTCM) crises to reprice and reallocate capital in the presence of the risks just described, especially if some of the adjustments occur in a less orderly than desirable fashion?

### Foreign Exchange Markets

During the period (mid-1999–mid-2000) under review, the main developments among the major exchange rates were a weakening of the euro against the dollar and a strengthening of the yen. Over the year to June 2000, despite record current account deficits, the U.S. dollar strengthened by about 1 percent in nominal effective terms and ranged around the strongest levels since the late 1980s, appreciating steadily against the euro by 10 percent, but depreciating by 12 percent against the Japanese yen (Figure 2.1). Support for the dollar was underpinned by capital inflows to dollar markets, driven partly by confidence that U.S. productivity gains would sustain further improvements in corporate profitability and thereby bolster equities and corporate bond valuations (Table 2.1 and Box 2.1).<sup>1</sup>

Movements in the major currencies also reflected capital flows out of European markets and toward the United States and Japan.<sup>2</sup> Much of the foreign interest in U.S. corporate securi-

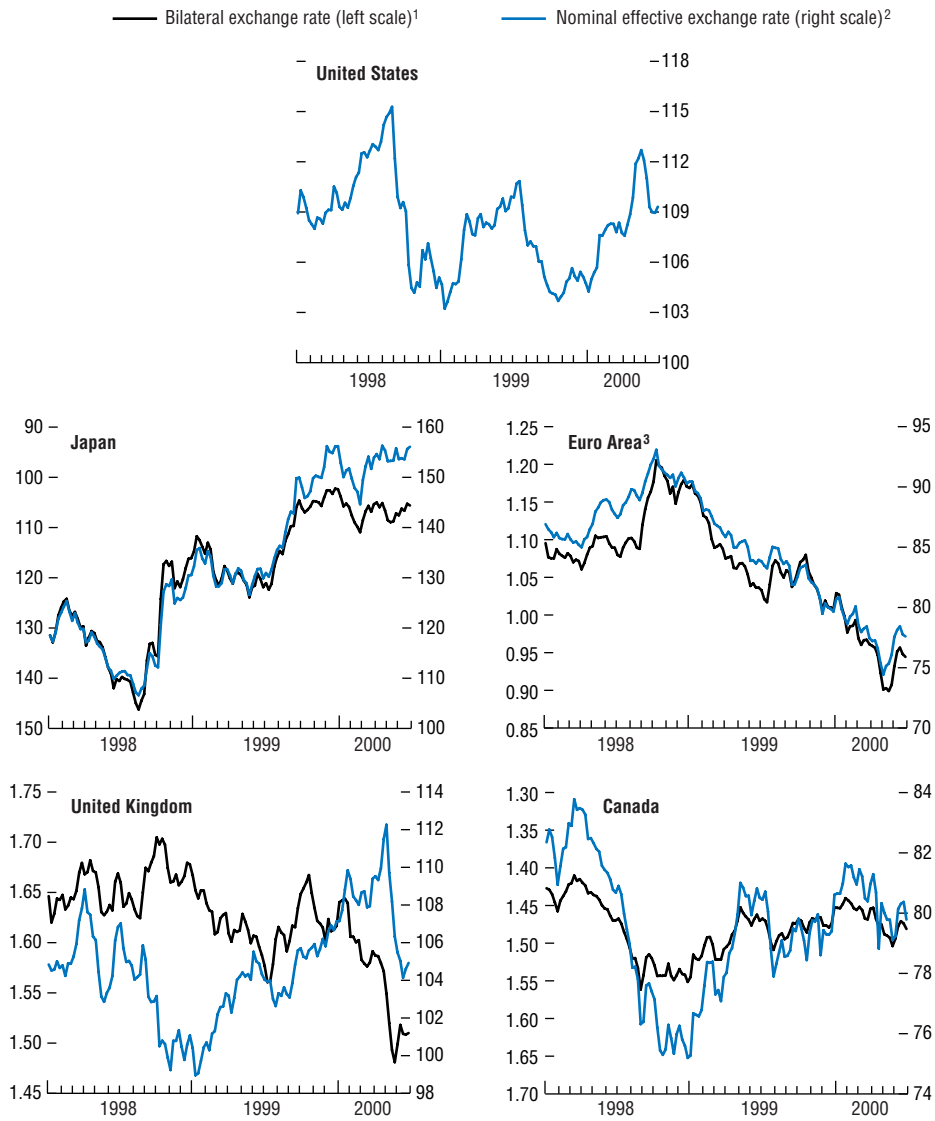
ties came from European investors. Net capital outflows from Europe (amounting to about \$70 billion in the financial account, and including about \$180 billion in net direct investment and portfolio outflows) contributed to the weakening in the euro from \$1.184 at the start of European Monetary Union (EMU) to a low of \$0.885—a depreciation of 25 percent, although the euro rebounded somewhat to \$0.95 by the end of June 2000, a net depreciation of 20 percent. The view that the spread between dollar and euro interest rates was likely to increase further, and the rapidly increasing supplies of both domestic and international euro-denominated securities (Table 2.2)—reportedly including issuance by sovereign and international borrowers who used the proceeds to pay down dollar-denominated debt—also likely contributed to the weakening of the euro against the dollar. As the euro slipped in value, the volatility of the euro-dollar rate increased (Figure 2.2), partly reflecting a withdrawal of capital devoted to market-making amid financial restructuring. However, this decrease in market-making does not appear to have had a lasting impact on liquidity in the euro markets—spreads on currency trades involving the euro have generally narrowed to levels previously associated with the deutsche mark.

The strength of the yen seems to have reflected three main factors: the large and growing Japanese current account surplus; strongly improved investor sentiment and associated capital inflows; and capital repatriation by Japanese investors, who reportedly reduced foreign currency exposures ahead of the end-September 1999 fiscal half-year (during July–September, the yen appreciated by 15 percent against the dollar). Volatility in the yen-dollar market displayed no clear trend during the period under review, although at various points in time it did spike up. Market participants have suggested that interventions by the Japanese authorities were aimed not only at limiting appreciation of the

<sup>1</sup>The associated idea of a “new economy” in the United States is discussed in IMF (2000a).

<sup>2</sup>The considerable recorded outflows from the United Kingdom may partly reflect its role as an international financial center.

**Figure 2.1. Selected Major Industrial Countries: Exchange Rates, January 1, 1998–June 30, 2000**  
(Weekly average)



Sources: Bloomberg Financial Markets L.P.; and IMF.

Note: In each panel, the effective and bilateral exchange rates are scaled so that an upward movement implies an appreciation of the respective local currency.

<sup>1</sup>Local currency units per U.S. dollar except for euro area and United Kingdom for which data are shown as U.S. dollars per local currency.

<sup>2</sup>1990 = 100; constructed using 1989–91 trade weights.

<sup>3</sup>Prior to 1999, data refer to synthetic rate.

**Table 2.1. Net Foreign Purchases of U.S. Long-Term Securities, 1995–99**  
(In millions of U.S. dollars)

	Government Bonds	Corporate Bonds	Corporate Stocks	Total
1995	162,844	57,853	11,240	231,937
1996	273,964	83,743	12,511	370,218
1997	234,024	84,358	69,597	387,979
1998	105,841	121,930	50,020	277,791
1999	84,205	160,537	107,522	352,264
of which:				
Europe	–9,493	111,939	98,060	200,506
Germany	5,191	4,817	13,410	23,418
United Kingdom	–6,190	92,302	42,902	129,014
Spain	–14,756	179	2,657	–11,920
Asia	62,990	11,190	3,379	77,559
Japan	31,741	5,902	5,723	43,366
China	15,770	800	241	16,811

Source: United States, Department of Treasury, *Treasury Bulletin* (various issues).

yen but also at offsetting increases in yen-dollar volatility. Variations in yen-dollar volatility over the period under review also appear to be related to technical factors, including hedging of dollar exposures by Japanese institutional investors. Specifically, Japanese institutions typically hedge about 40 percent to 60 percent of their dollar exposures (totaling \$400–\$500 billion), often with barrier options (see Box 4.1). These hedge ratios depend on the level and volatility of the exchange rate. A change in hedge ratios of, say, 10 percentage points, which is reportedly not uncommon, can generate considerable rebalancing activity—especially if the yen-dollar rate approaches knockout prices on barrier options, triggering volatile market dynamics. This is consistent with the marked increase in actual and implied yen-dollar volatility from about 10 percent in the first part of 1999 to as high as 22 percent in September 1999.

## Credit Markets

Developments in the mature credit markets were driven primarily by the rising trend of interest rates in Europe and the United States and little change in the supportive monetary and fiscal policies in Japan (Figure 2.3). The main sources of higher interest rates were continued strong growth in North America and a firming of the European recovery that, in turn, encour-

aged central banks in these regions to tighten monetary conditions.

A variety of other temporary factors influenced yield curves. In Japan, expansive fiscal policy created concerns about the prospective increase in the supply of long-term Japanese government bonds (JGBs). By contrast, in Europe and the United States, yield curves and spreads of corporate bonds (relative to government bonds) were influenced by strong corporate financing requirements in tandem with reduced public-sector financing requirements. In the United States, the stock of government debt dropped from 48 percent to 39 percent of GDP during 1995–99, while the stock of nonfinancial corporate debt increased from 17 percent to 22 percent of GDP. In Europe, euro-denominated international debt issues reached a record in 1999, exceeding U.S. dollar issuance in that year as well as issuance in the euro's legacy currencies in earlier years.

## United States

In U.S. money markets, liquidity remained ample in 1999 despite the Federal Reserve's reversal of the interest rate reductions made during the autumn of 1998. Nonetheless, the demand for liquidity occasionally pushed up liquidity-sensitive money market spreads, as in late 1999 when spreads relative to treasury bills widened on year

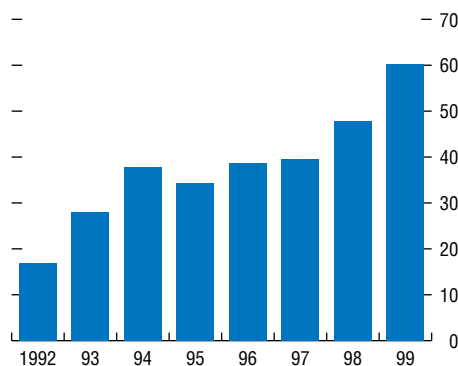
### Box 2.1. Foreign Capital and the U.S. Boom

Alongside the strong performance of the U.S. economy since the mid-1990s, foreign investors have looked increasingly favorably on the U.S. from a global asset allocation perspective. As a result, U.S. securities, and in the past few years particularly U.S. corporate bonds and stocks, have been receiving a large and increasing weight in international investors' portfolios. This can be illustrated with a variety of indicators, but is most easily seen from standard balance of payments figures. Although the U.S. economy presently accounts for about 30 percent of global output, from the perspective of international investors making asset allocation decisions, U.S. capital markets have been receiving a disproportionate share of global capital. In the past year, two-thirds of all capital exported from countries running current account surpluses has been directed toward U.S. capital markets (see first figure).

Capital inflows to U.S. securities markets have been impressive since the mid-1990s. As discussed in the 1997 *International Capital Markets* report, however, recently there has been a fundamental change in the type of U.S. securities toward which foreigners have steered much of their funds. Prior to 1998, the major U.S. beneficiary of the substantial increases in foreign capital inflows had been the U.S. Treasury. For example, from 1995 to 1997, the U.S. treasury market was attracting two-thirds of all capital inflows to U.S. securities markets (see Table 2.1). Two recent developments have fundamentally changed this picture. First, the U.S. Treasury has not had any new financing requirement. Specifically, while the U.S. government's fiscal position has steadily improved since the deficit peaked at nearly \$300 billion in 1992, the fiscal deficit that existed through 1997 has turned into an estimated surplus of close to \$200 billion in the current year. Second, there has been a largely uninterrupted improvement in U.S. corporate profitability during the past decade that has led to a near doubling in corporate profits as share of national income (see IMF, 2000b).

The above factors have resulted in two main shifts in the past two to three years in foreign

**United States: Current Account as Share of Global Surpluses, 1992–99**  
(In percent)



Source: IMF, *World Economic Outlook* database.

portfolio allocations within the United States. The first is that foreigners now strongly favor U.S. private securities over U.S. treasury securities and the second is that these investors have shifted significantly away from their historical bias toward U.S. fixed income securities and toward U.S. equities (though the net contribution of bonds to financing the U.S. current account still outweighs the net contribution of equities). In particular, foreign purchases of U.S. equities were more than 25 percent greater than foreign purchases of U.S. treasuries during 1999, and foreign purchases of U.S. corporate bonds were almost 100 percent greater. Placed in historical context, the influence of the above factors is even more apparent: foreign purchases of U.S. corporate bonds have nearly tripled since 1995 and foreign purchases of U.S. corporate stocks have risen tenfold.

Another way to view the recent significance of foreign capital in the United States is by examining foreign investment *positions* rather than foreign investment *flows*.<sup>1</sup> Non-U.S.-based investors

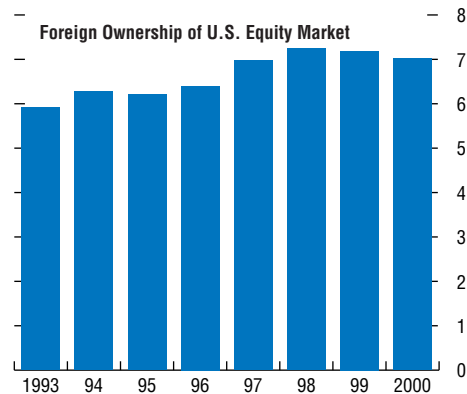
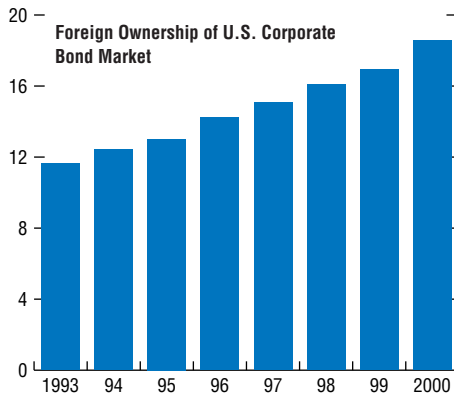
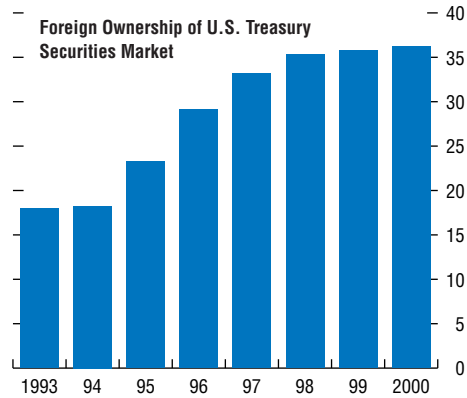
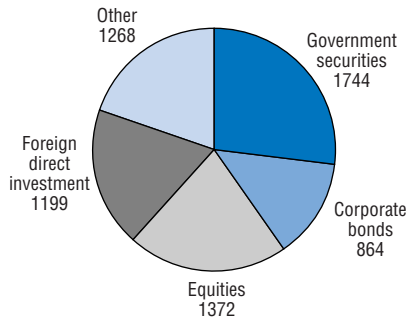
<sup>1</sup>Aggregating portfolios of all investors in the world is, by definition, the “market portfolio”—the weights on individual assets and markets exactly correspond to the relative values of the assets and markets. Estimates

Box 2.1 (concluded)

**Foreign Ownership of U.S. Assets, 1993–2000<sup>1</sup>**

(In percent)

**Shares of Foreign Ownership of U.S. Assets in 2000**  
(in billions of U.S. dollars)



Source: United States, Board of Governors of the Federal Reserve System (2000).  
<sup>1</sup>Data for 2000 refer to the first quarter of 2000.

currently have financial claims on the United States totaling \$6.5 trillion (see second figure). Foreign ownership of U.S. treasury and corporate bonds and stocks totals \$4 trillion, and accounts for about 35 percent of the treasury market, almost 20 percent of the corporate bond

market, and 7 percent of the equity market. To put these numbers in context, note that the U.S. economy accounts for about 30 percent of global GDP, the U.S. equity market accounts for about 40 percent of the global equity market, and U.S. fixed income markets account for around half of global fixed income markets. In light of the well-known fact that investors hold most of their portfolios in domestic securities, the magnitudes of current foreign positions in U.S. markets are substantial.

of investment positions in the United States of non-U.S. investors would be more useful. Unfortunately, it is not possible with the available data to construct portfolios of investors by country of residence.

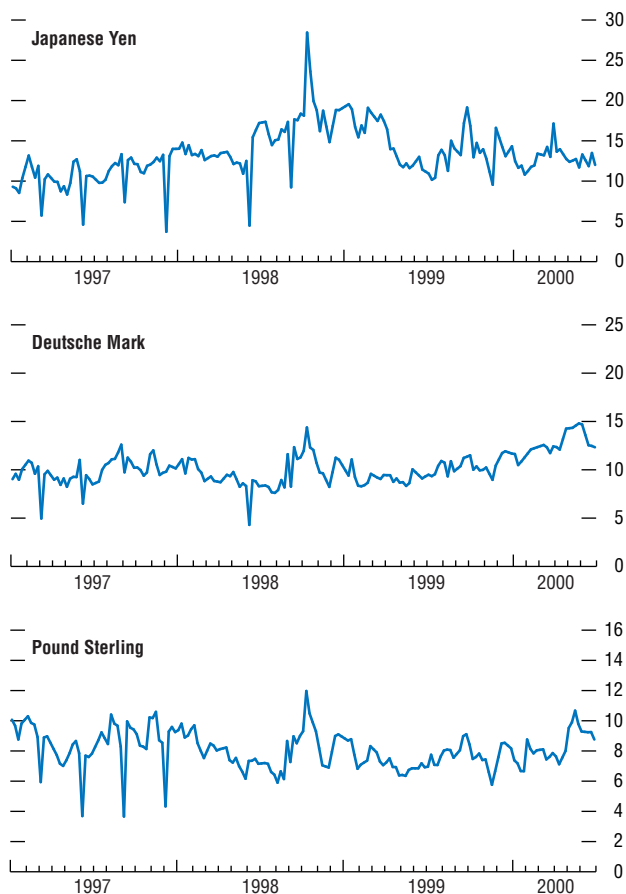
**Table 2.2. Outstanding Amounts and Net Issues of International Debt Securities by Currency of Issue, 1993–First Quarter 2000**  
(In billions of U.S. dollars)

Currency	Amounts Outstanding										Net Issues									
	1993	1994	1995	1996	1997	1998	1999	2000	QT	2000	1993	1994	1995	1996	1997	1998	1999	2000	QT	2000
U.S. dollar	832.2	896.6	964.9	1,224.1	1,555.6	1,966.0	2,512.2	2,634.3		31.5	64.4	68.4	258.9	331.6	410.4	546.2	546.2	122.1	122.1	
Japanese yen	268.0	385.7	446.4	478.4	461.5	484.6	536.8	531.6		33.8	85.4	79.8	84.7	33.1	-26.8	-5.8	-5.8	-1.2	-1.2	
Deutsche mark	192.0	242.5	311.5	338.1	337.9	436.8	n.a.	n.a.		31.2	27.3	49.7	51.9	44.6	71.3	n.a.	n.a.	n.a.	n.a.	
French franc	91.6	129.7	146.2	165.2	177.7	219.3	n.a.	n.a.		34.5	26.4	4.4	28.9	33.9	29.3	n.a.	n.a.	n.a.	n.a.	
Italian lira	37.4	55.8	66.0	92.3	112.1	137.2	n.a.	n.a.		13.0	17.1	8.6	23.9	32.2	17.2	n.a.	n.a.	n.a.	n.a.	
Pound sterling	153.4	176.5	184.3	234.6	280.2	339.7	418.2	430.3		31.7	14.7	9.3	31.6	51.1	57.6	87.8	87.8	16.9	16.9	
Canadian dollar	81.4	83.4	83.6	76.9	67.7	56.0	57.3	57.1		20.5	6.9	-2.2	-6.4	-6.3	-7.6	-2.0	-2.0	0.1	0.1	
Spanish peseta	10.6	10.7	13.2	18.4	21.3	23.6	n.a.	n.a.		3.5	-0.7	1.4	6.3	5.6	1.0	n.a.	n.a.	n.a.	n.a.	
Netherlands guilder	44.9	65.4	83.1	93.2	93.3	120.6	n.a.	n.a.		7.9	14.5	12.7	17.0	12.7	19.7	n.a.	n.a.	n.a.	n.a.	
Swedish krona	3.5	5.0	5.3	5.2	4.5	7.6	7.9	8.5		0.6	1.2	-0.1	0.0	-0.1	3.3	0.6	0.6	0.7	0.7	
Swiss franc	148.8	160.6	187.6	162.1	148.2	162.6	142.8	137.6		-2.3	-6.4	4.0	0.8	-2.9	6.0	2.0	2.0	0.0	0.0	
Belgian franc	2.2	2.3	4.2	13.1	12.9	9.9	n.a.	n.a.		-0.4	-0.3	1.9	9.3	1.7	-4.1	n.a.	n.a.	n.a.	n.a.	
ECU/euro	92.6	90.9	90.4	74.3	65.2	158.8	1,561.2	1,650.4		...	-10.1	-6.7	-12.4	-1.3	87.0	576.0	576.0	121.4	121.4	
Other	66.1	86.1	118.8	152.5	157.2	175.0	129.1	130.2		-8.0	11.5	29.4	36.0	27.0	17.2	20.3	20.3	6.1	6.1	
Total	2,024.7	2,391.2	2,705.5	3,128.4	3,495.3	4,297.7	5,365.5	5,580.0		197.5	251.9	260.6	530.5	562.9	681.5	1,225.1	1,225.1	266.1	266.1	

Source: BIS, *International Banking and Financial Market Developments*, various issues.



**Figure 2.2. Implied Volatility: Japanese Yen, Deutsche Mark, and Pound Sterling, January 3, 1997–June 30, 2000**



Source: Bloomberg Financial Markets L.P.

Note: Implied volatility is a measure of the price variability of an underlying security based on the market prices of the call options on futures on that security. Volatilities are expressed in percent rate of change, and are measured using three-month options on the indicated currencies against the U.S. dollar.

2000 (Y2K) concerns (Figure 2.4). During the last week of 1999 the Federal Reserve injected liquidity into the banking system, and the federal funds rate fell from 5.5 percent to below 4 percent—the widest deviation from its target rate in over nine years. Subsequently, the federal funds target rate was raised in a sequence of six steps to 6½ percent, with tightened liquidity and wider money market spreads in 2000.

Upward pressure on long-term treasury yields from tightening monetary conditions was offset by actual and expected reductions in supplies of U.S. treasuries. In the first quarter of 2000, investors began to hoard liquid long-term treasury securities, particularly after the U.S. Treasury announced that it would repurchase \$30 billion in bonds. Between January and April, 30-year treasury yields dropped by more than 100 basis points, and the yield curve inverted at the long end (see Figure 2.4). These supply-induced dynamics in the U.S. treasury market in turn had three important effects. First, investors unwound speculative short positions. As a result, volatility in the term spread reached historical highs, and during the week following the February 2 announcement of the treasury buyback, the spread between 30-year and 1-year treasury securities experienced the largest swing since the stock market crash in 1987. Second, investors sought alternative pricing benchmarks and hedging vehicles, including a shift away from 30-year treasury bonds toward 10-year treasuries and long-dated U.S. agency obligations such as those of the Federal National Mortgage Association (Fannie Mae).<sup>3</sup> Third, the decrease in long-maturity treasury securities, in tandem with a heavy supply of corporate securities, contributed to large increases in long-term swap and corporate bond spreads over treasury rates. Spreads of U.S. dollar swap rates over treasury rates, for example, peaked in May 2000 at 140 basis points, a record

<sup>3</sup>In the second quarter of 2000, U.S. officials including Federal Reserve Board Chairman Greenspan publicly supported legislation that would repeal or dilute many of the legal provisions that support the U.S. agencies' special status, which reduced the perceived implicit guarantee on agency debt.



high (see Figure 2.4). The increase of corporate spreads over treasury securities has also been significant, though it is well below the level of the early 1990s. Overall, the sharp rise in dollar credit and swap spreads seems to mainly reflect the decline in U.S. treasury yields, rather than an increase in credit risk.

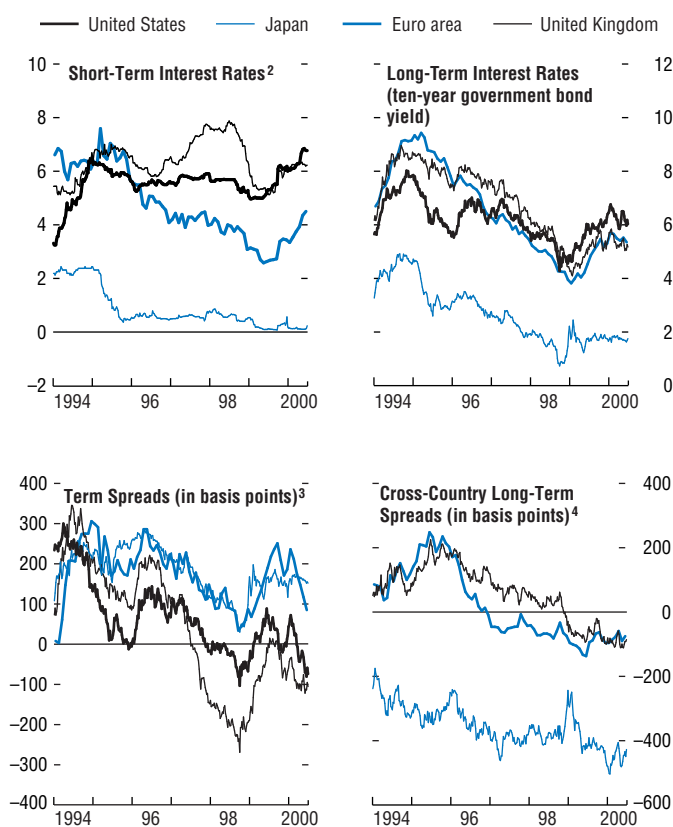
## Europe

In the second half of 1999, long- and short-term euro-area interest rates increased, but lagged behind increases in U.S. and U.K. interest rates. On balance, euro-area monetary conditions remained accommodative throughout 1999, as reflected in strong money and credit growth. These conditions may have encouraged the authorities to raise interest rates during the first half of 2000, leading to subsequent sharp increases in short- and long-term bond yields.

A year and a half after the introduction of the euro, financial market integration has progressed markedly. The general narrowing of money market spreads across borders as well as bid-ask spreads, the sizable level of cross-border turnover, and the decreased reliance on ECB backup facilities by euro-area financial institutions all point to a high degree of integration and improved liquidity management in the unsecured money market. The euro-area money market appears to be developing into a two-tiered structure. The first tier includes the large banks in each national market, which compete for ECB funds at auction and trade liquidity among themselves, effectively distributing liquidity throughout the euro area. These large banks act as hubs for distributing liquidity to a second tier of smaller institutions in national markets.

Overbidding remained a prominent feature of ECB auctions during the period under review. The fixed-rate, fixed-quantity structure of the ECB main refinancing operation (MRO) has apparently given euro-area banks incentives to bid very aggressively for liquidity at auctions. At auctions during the March 24–April 23, 2000 reserve maintenance period, banks bid for between 35 and 70 times more liquidity than was

**Figure 2.3. Short- and Long-Term Interest Rates, January 1, 1994–June 30, 2000<sup>1</sup>**  
(In percent)



Sources: Bloomberg Financial Markets L.P.; and European Central Bank.

<sup>1</sup>Weekly data for United States, Japan, and United Kingdom; and monthly data for euro area.

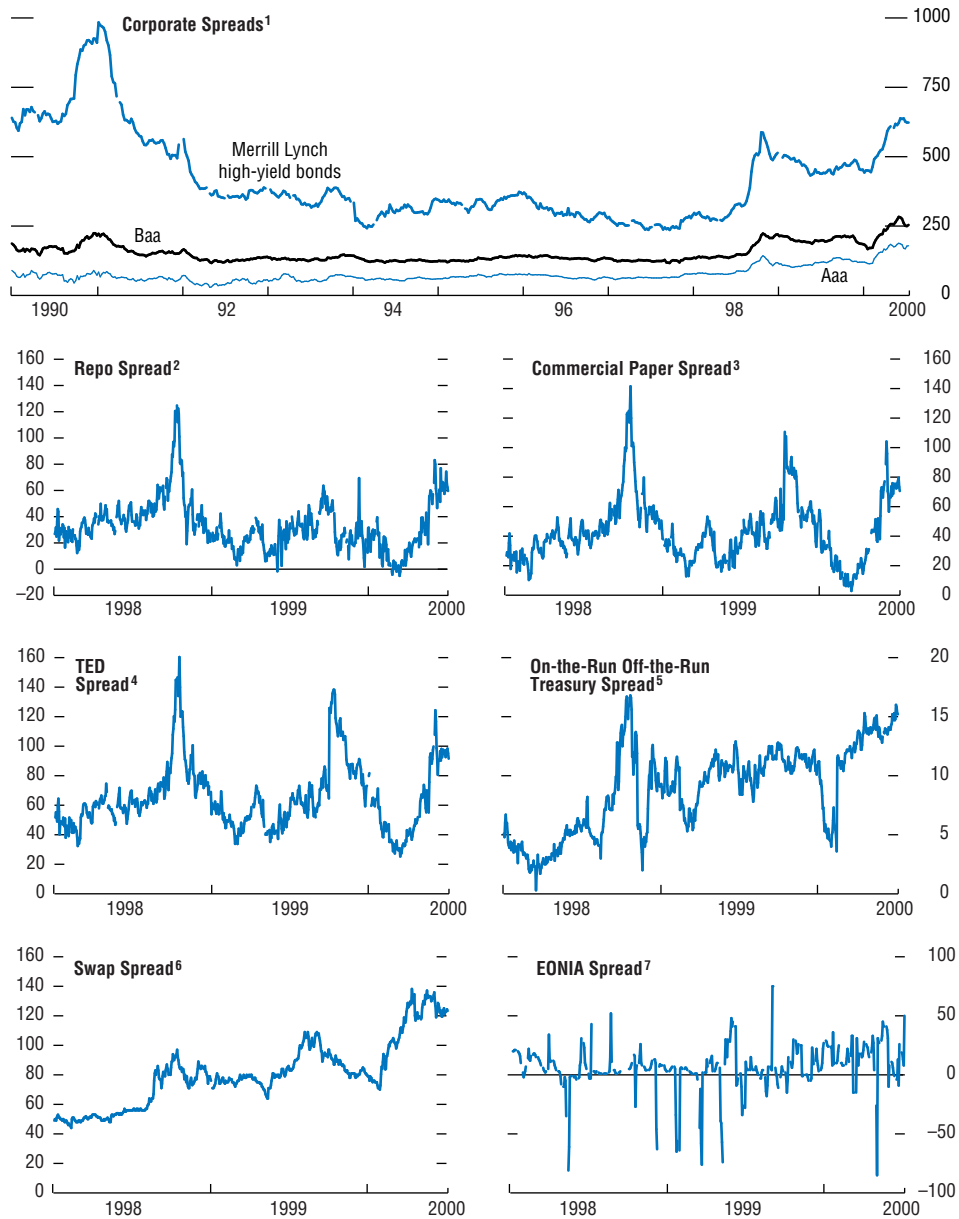
<sup>2</sup>For United States, Japan, and United Kingdom, three-month LIBOR; and for euro area, three-month EURIBOR.

<sup>3</sup>Spread between yield on 10-year government bonds and three-month LIBOR.

<sup>4</sup>Spread between yield on 10-year government bonds and yield on equivalent U.S. government bond.

**Figure 2.4. Selected Spreads, January 5, 1990–June 30, 2000**

(In basis points)



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

<sup>1</sup>Spread over 30-year U.S. treasury bond; weekly data.

<sup>2</sup>Spread between yields on three-month U.S. treasury repos and on three-month U.S. treasury bill.

<sup>3</sup>Spread between yields on 90-day investment grade commercial paper and on three-month U.S. treasury bill.

<sup>4</sup>Spread between three-month U.S. dollar LIBOR and yield on three-month treasury bill.

<sup>5</sup>Spread between yields on a 30-year off-the-run treasury bond and yield on a 30-year on-the-run treasury bond.

<sup>6</sup>Spread of fixed-rate leg of 10-year U.S. dollar interest rate swaps over yield on 10-year U.S. treasury bond.

<sup>7</sup>Spread over main refinancing operations rate.

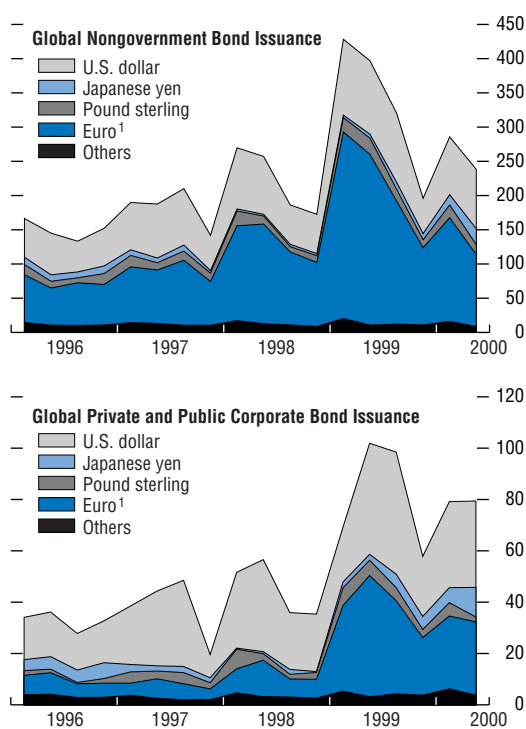
offered by the ECB.<sup>4</sup> On June 8, 2000, the ECB announced that, starting with the operation settled on June 28, it would switch to variable-rate tenders for its MRO, to address the overbidding problem. The new format employs a minimum bid rate, initially set at 4.25 percent—the MRO rate in effect following the 50-basis-point increase on June 8. At the first variable-rate operation on June 27, the ECB auctioned €99 billion at a weighted-average rate of 4.32 percent. Market participants noted that the operation went smoothly and ECB Chief Economist Issing noted that the new procedure had solved the overbidding problem.

Euro-area bond markets have grown rapidly since the start of EMU (Figure 2.5). In 1999, debt issuance by private nonfinancial corporations increased by nearly 300 percent as robust merger and acquisition activity stimulated direct access to credit markets.<sup>5</sup> Going forward, prospective changes in corporate capital gains taxation in Germany (discussed later) are also expected to increase capital market issuance, as corporations and financial institutions may need additional financing to unwind their complex cross-holdings. Despite the rapid growth of European private bond markets, the outstanding stock remains small in absolute terms and in comparison with markets in the United States. Bank loans are equivalent to 100 percent of GDP in the euro area, compared with 50 percent in the United States; by contrast, corporate bonds are equivalent to 3.3 percent of GDP in the euro area, compared with 30 percent in the United States.

Lack of an integrated repo market has hindered the development of a euro-area-wide bond market, as noted in the 1999 *International Capital Markets* report. A recent ECB study suggests that the continued lack of integration of private repo markets reflects (1) the differing liquidity of un-

**Figure 2.5. International Bond Issuance by Currency, First Quarter 1996–Second Quarter 2000**

(In billions of U.S. dollars)



Source: Capital DATA Bondware.

<sup>1</sup>Prior to 1999, data refer to legacy currencies of the euro.

<sup>4</sup>See European Central Bank (2000b), p. 13.

<sup>5</sup>The market for Pfandbriefe—bank-issued bonds backed by mortgages or public-sector guarantees—has expanded beyond Germany, to France, Austria, Denmark, the Netherlands, and Spain. American-style asset-backed securities are common in the United Kingdom.

derlying bonds; (2) the lack of harmonization of legal documentation used for repo agreements; (3) practical difficulties in the cross-border management and settlement of collateral (notably the existence of 29 national securities settlement systems); (4) differential tax treatment of bonds across countries; and (5) an uneven availability of collateral across the euro area.<sup>6</sup>

### Japan

In contrast to other mature markets, Japanese interest rates did not rise (from their very low levels) during the period under review. Because of concerns with the weak recovery in real activity as well as the lingering concern about the financial system, in February 1999, the Bank of Japan lowered the uncollateralized overnight call rate from  $\frac{1}{4}$  percentage point to effectively zero. In April, the Bank of Japan signaled that it would maintain the zero interest rate policy until deflationary concerns were dispelled. The Bank of Japan has indicated since late 1999 that a pickup in private domestic demand would be sufficient to dispel deflationary concerns. The call rate fell to as low as 0.02 percent, engendering a concomitant decline in other money market rates to record lows as well as causing a rapid buildup of banks' excess reserves. However, lending on the overnight market contracted sharply because lenders could not earn sufficient returns to cover the commissions charged by money market brokers (it was more profitable to deposit funds in liquid bank accounts), and because of the decreased demand for excess reserves reflecting the Bank of Japan's policy of providing ample liquidity. Outstanding claims in the call money market declined from about ¥36 trillion to below ¥20 trillion during 1999 as major lenders such as trust banks, insurance companies, and agricultural cooperatives exited the market. Funds have flowed to other instruments, notably expanding the 13-week Financing Bill market,

which has taken over from the certificate of deposit market as the benchmark for short-term interest rates.

Japanese long-term bond rates dipped after the announcement of the zero interest rate policy, but rebounded shortly thereafter and, overall, have exhibited little direction over the past year—remaining in the  $1\frac{1}{2}$ –2 percent range. According to market participants, the main factors that have helped to maintain long rates at this low level include large capital inflows, domestic price deflation, a strong yen, and strong demand for JGBs by Japanese banks (whose holdings were estimated at ¥44 trillion in 1999, compared with ¥31 trillion in 1998). Some observers have expressed concerns that if banks reduce their purchases of JGBs, bond prices could drop sharply, which could in turn cause valuation losses at banks and reduce bank profitability.

Japanese financial institutions reportedly expect that JGB market supply and demand will remain balanced at roughly current prices, even as the stance of monetary and fiscal policies becomes less accommodative. Nevertheless, it has been cited as presenting risks that the Trust Fund Bureau will likely have to reduce its purchases as its funding (postal savings deposits) declines. Although some market participants believe that such tensions will be deftly negotiated without upsetting market expectations, risks remain. The experience in December 1998—when a relatively minor and anticipated change in the Trust Fund Bureau's purchases of JGBs led long-term yields to rise sharply—suggests that it might be difficult to maintain the balance of supply and demand at current prices.

In Japanese corporate bond markets, credit spreads narrowed from their early-1999 highs, in part owing to increased liquidity from the Bank of Japan's zero interest rate policy, and in part owing to anticipated corporate restructuring.<sup>7</sup> In May 2000, five-year A-rated Japanese corporate bonds traded at spreads of around 40 basis points over government bonds, compared with spreads

<sup>6</sup>See European Central Bank (2000a), pp. 35–40.

<sup>7</sup>See Bank of Japan (2000).

**Table 2.3. Announced International Syndicated Credit Facilities by Nationality of Borrowers, 1992-First Quarter 2000**  
(In billions of U.S. dollars)

	1992	1993	1994	1995	1996	1997	1998	1999	1998				1999				2000
									Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
All countries	194.0	279.4	477.1	697.8	900.9	1,136.3	902.0	957.1	198.6	253.7	229.9	219.8	172.5	271.1	264.3	249.2	239.0
Industrial countries	159.6	243.6	422.0	609.4	796.9	973.1	823.4	893.2	185.4	228.2	205.9	203.9	162.6	250.1	250.1	230.4	226.9
of which:																	
United States	115.5	195.0	311.0	398.4	552.6	676.1	592.2	575.6	139.7	168.9	151.8	131.8	113.1	180.7	160.0	121.8	125.0
Japan	0.8	0.6	2.6	4.9	6.7	6.0	11.9	14.8	1.7	0.6	6.3	3.3	4.8	6.0	2.6	1.4	7.7
Germany	0.3	0.9	1.2	12.6	9.1	13.3	12.4	48.3	1.2	6.5	1.4	3.3	1.3	3.1	26.3	17.6	2.0
France	1.4	5.2	6.8	18.1	21.3	38.7	16.1	38.6	3.6	0.6	3.5	8.4	6.7	6.6	11.0	14.3	13.4
Italy	3.2	2.0	5.3	15.1	5.7	11.4	6.3	15.4	0.3	1.3	1.6	3.1	0.8	5.9	0.8	7.9	1.3
United Kingdom	17.7	12.9	28.4	56.2	75.0	103.9	75.7	81.8	19.2	21.4	15.7	19.4	17.1	15.2	24.6	24.9	49.7
Canada	4.4	7.3	16.5	24.7	27.3	45.2	41.1	23.6	5.5	12.8	8.9	13.9	5.0	6.9	6.8	4.9	5.0

Source: BIS.

of about 120 basis points for A-rated U.S. corporate bonds of comparable maturity (yen swap spreads were similarly compressed). The number of announced restructuring plans and the value of takeovers and mergers have both risen sharply in the recent period, and a number of new measures have encouraged restructuring. Nonetheless, some market participants continued to express concerns about the slow pace and limited efficacy of financial and corporate restructuring (see Annex I).

### International Securities and Syndicated Loan Markets

The start of Stage III of EMU and the introduction of the euro were accompanied by increased net issuance of euro-denominated international securities compared with U.S. dollar-denominated securities, which accounted for 48 percent and 43 percent of overall net issuance respectively (see Table 2.2). European financial institutions dominated issues in euros, while U.S. agencies dominated issues in U.S. dollars. The shares of both euro- and dollar-denominated securities in the outstanding stock of international securities rose modestly to 29 percent and 47 percent respectively, while the share of yen-denominated securities shrank.

Merger and acquisition activity boosted syndicated lending, as announced transactions increased by 6 percent to about \$960 billion in 1999, and remained strong in the first quarter of 2000 (Table 2.3). Market analysts suggest that despite the growing access to the private bond markets in Europe, many corporations still prefer the speed, flexibility, and discretion of the syndicated loan market, especially for merger and acquisition finance. They also note that as the banking industry consolidates further, increasing numbers of regional banks will likely be involved in pan-European syndicated loans.

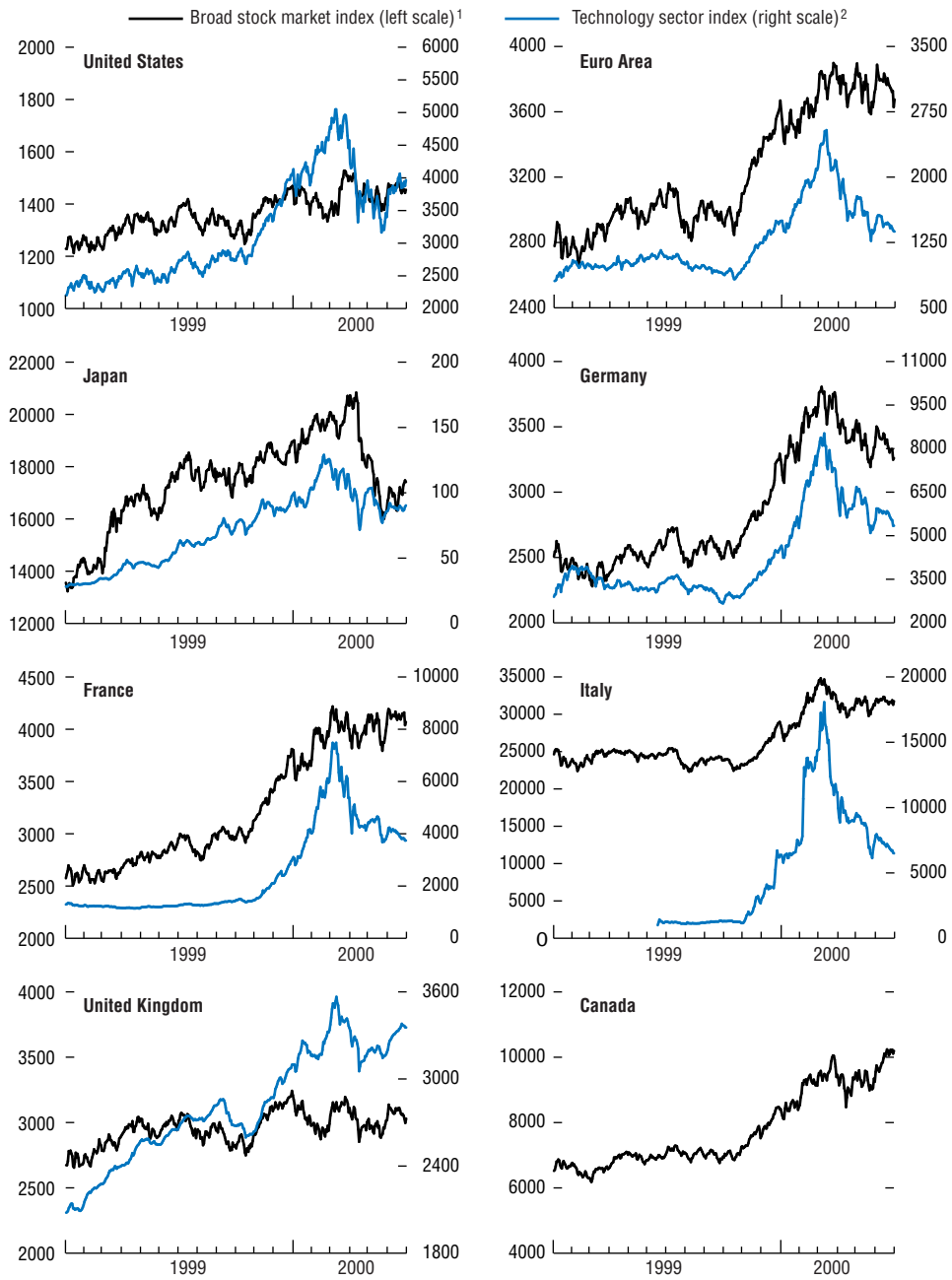
### Equity Markets

There were two main developments in the major equity markets (Figure 2.6). First, technology shares globally increased sharply through March 2000, and then fell back during the subsequent two months. Second, in broader markets, only euro-area equity prices have managed to sustain gains during the period under review.

### Broad Market Indices

Despite the absence of sustained significant gains in U.S. equity prices generally, the relatively high level of U.S. equity prices (as meas-

**Figure 2.6. Major Industrial Countries: Stock Market Price Indices, December 31, 1998–June 30, 2000**  
(National currency)



Source: Bloomberg Financial Markets L.P.

<sup>1</sup>For United States, Standard & Poor's 500 Index; for Japan, Nikkei 225 Index; for euro area, Financial Times Stock Exchange Eurotop 100 Index; for Germany, DAX 100 Index; for France, Société des Bourses Françaises 250 Index; for Italy, Milan Stock Exchange MIB Telematico Index; for United Kingdom, Financial Times Stock Exchange All-Share Index; and for Canada, Toronto Stock Exchange 300 Composite Index.

<sup>2</sup>For United States, NASDAQ Composite Index; for Japan, JASDAQ Index; for euro area, EASDAQ Index; for Germany, Neuer Markt Index; for France, Nouveau Marché Index; for Italy, Nuovo Mercato Index; and for United Kingdom, Financial Times Stock Exchange SmallCap Index.

ured by traditional valuation indicators) has been maintained by confidence in continued buoyant economic conditions, productivity gains, and ongoing corporate share purchases through buy-back programs and mergers. On the other hand, the broader U.S. equity market was negatively affected by portfolio shifts toward high-technology shares.

As broad market indexes advanced sharply in the euro area, the equity market became a more important vehicle to raise capital, partly reflecting the rising pace of merger and acquisition activity. Among the reasons for this, German tax reform signaled new avenues for restructuring domestically and through cross-border merger and acquisition. In December, the government's announced income tax reforms included a surprise proposal to eliminate capital gains taxes (currently 50 percent) on corporate and industrial shareholdings. The DAX index rose by 4.5 percent on the day of the announcement (December 23) and subsequently outpaced the U.S. market.

A major step in consolidation among European stock exchanges came in March 2000 with the creation of Euronext, which merged the stock exchanges of Amsterdam, Brussels, Madrid, Paris, and Zurich. This was followed in May by plans to create the International Exchange (iX), which combines the London Stock Exchange and the Deutsche Börse. The plans for iX also include the creation of a pan-European market for technology stocks (operated out of Frankfurt in place of the Neuer Markt) in a joint venture with Nasdaq.

Through March 2000, the Japanese equity market outperformed other major international stock markets, though these gains quickly proved to be short lived. The stock market recovery was aided by improved sentiment about economic prospects, which induced strong net inflows of foreign portfolio capital as investors raised their country allocations to Japan from long-standing underweight positions. However, during April–June 2000, share prices dropped to mid-

1999 levels on increasing concern about the need for further corporate restructuring, the strengthening of the yen, and cyclical uncertainty.<sup>8</sup> The short-term performance of stocks may also have been dampened by speculation about corporate liabilities from the prospective implementation of tighter pension and mark-to-market accounting standards during FY2000–FY2002. Nonetheless, in the medium term, the expected improvements to transparency and accountability could stimulate corporate restructuring and an unwinding of cross-shareholdings and make companies in traditional sectors more attractive. In addition, prospective pension reform (which implies a shift to defined-contribution-like plans) and the potential reallocation of maturing postal saving deposits into equities are expected to stimulate the Japanese equity market. Specifically, during 2000–2001, ¥106 trillion (21 percent of GDP) in postal saving deposits are expected to mature. While the general expectation in early 2000 was that withdrawals of postal savings could be substantial, evidence to date suggests that most of the funds have been redeposited into the postal saving system.

### Technology Stocks

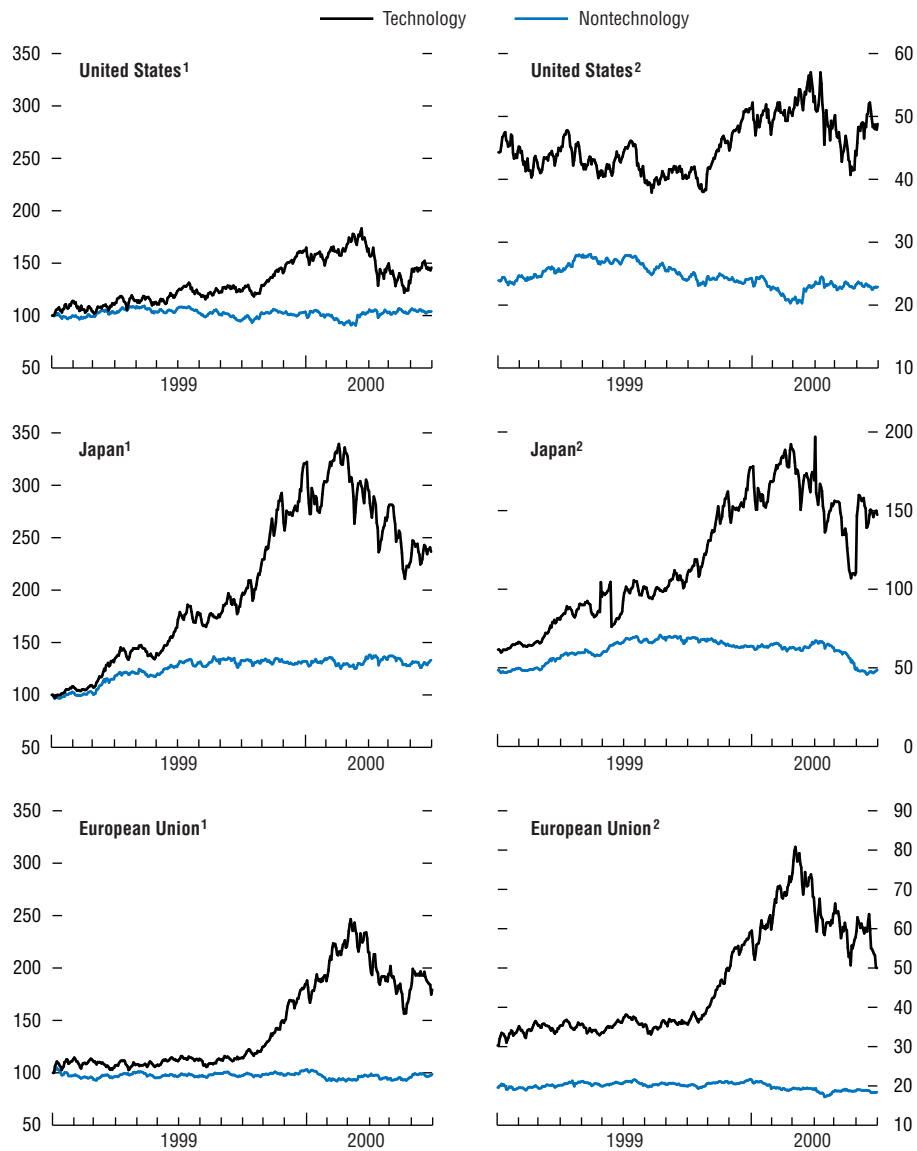
In the United States, Europe, and Japan, technology-focused indexes outperformed broader indexes by considerable margins, especially up to March 2000 (Figure 2.7). In the United States, the Nasdaq index strongly outpaced the broader U.S. index by 86 percentage points. The high average price-earnings ratio for the Nasdaq 200 in April implied that investors expected future earnings to grow at an exceptionally rapid rate, notwithstanding the fact that Nasdaq earnings declined by 18 percent during the 12-month period ending in April 2000.

In Europe and Japan between June 1999 and March 2000, the technology-laden Easdaq and Jasdaq indexes outpaced their corresponding broader stock market indexes by 104 and 89 per-

<sup>8</sup>The April decline in the Nikkei index partly reflected a rebalancing of index components.



**Figure 2.7. Sectoral Stock Market Indices and Price-Earnings Ratios, December 31, 1998–June 30, 2000**



Source: Datastream.

<sup>1</sup>Price indices; December 31, 1998 = 100.

<sup>2</sup>Price-earnings ratios; price-earnings ratios are systematically higher in Japan than in the United States, partly reflecting differences in accounting practices (see Bildersee, Cheh and Lee, 1990).

centage points, respectively. European technology sectors benefited from a surge in investment funds allocated toward technology shares. In Japan, the sharp rise in technology share prices was also aided by new specialized stock exchanges and investment funds that eased access for investors. In December 1999, the Tokyo Stock Exchange launched a specialized stock market for high-tech firms, which was followed in June 2000 by the launch of Nasdaq-Japan, a joint venture by Nasdaq and Softbank. Several firms plan to introduce new high-tech and start-up investment funds.

The strong rise in technology stocks globally through March 2000 fed an increasing sense of unease in the major equity markets. During the first four months of 2000, volatility in technology stocks rose about fourfold in the United States and Europe, and rose as much as sevenfold in Japan. Unease was also boosted by sharp increases in margined stock purchases. Between end-1996 and end-April 2000, margin credit in the United States grew at an average annual rate of 33 percent. At the market peak in March 2000, margin credit accelerated to a record level of \$279 billion, rising by 78 percent from levels 12 months earlier (margin credit declined by about 14 percent during April–May, however). In February 2000, the Jasdaq began to register declines and, on March 10, 2000, the Nasdaq index peaked at 24 percent above its end-1999 level (and 130 percent above its end-1998 level). The ensuing market correction in the United States (more than 30 percent during the March–May period) and Japan spread to Europe.

## Major Banking Systems

Major banks in the mature markets generally recorded improved results in 1999, as the effects of the 1998 crisis waned in an environment of broadly supportive economic activity and rising stock prices. Trading income rebounded for many internationally active banks following weak performance in the second half of 1998. Nonetheless, in a number of countries, bank

stocks trailed broad indexes, perhaps reflecting market skepticism that trading gains could be sustained, concerns that the credit cycle might have peaked, or the threat of competition from Internet-based financial intermediaries. Banking consolidation continued apace, against the background of a number of important developments including, in the United States, the repeal of Glass-Steagall restrictions on combining investment and commercial banking; in continental Europe, the first year of the single currency, and the ongoing search for “national champions”; and in Japan, efforts to cut costs and raise core profitability in a more stable financial environment.

In 1999, U.S. banks earned record net revenues for the eighth year running, owing in large measure to a rebound in trading income. Earnings from venture capital activities, including capital gains, accounted for as much as 25 percent of earnings at some institutions. Strong core earnings have also helped to sustain bank profitability in recent years, as net interest margins have remained around 4 percent in an environment of vigorous economic activity. Against this background, average return on equity for top banks climbed by about 2 percentage points to about 19 percent in 1999, and return on assets also edged higher. Nonperforming loans were broadly stable as a share of assets, as unusual strength in the U.S. economy offset a shift to more risky types of consumer lending. Top U.S. banks maintained a healthy level of capital, with an average Tier 1 ratio of about 8 percent. Thus far in 2000, many banks have indicated a strong showing in the first quarter, including a 55 percent rise in trading revenue to record levels at U.S. commercial banks. However, some banks and analysts have also warned that earnings growth may have fallen off in the second quarter.

Looking ahead, many analysts foresee a pickup in consolidation among small U.S. financial institutions following the passage of financial modernization legislation (the Gramm-Leach-Bliley Act that repealed certain sections of Glass-Steagall walls between investment and commer-

cial banking; see Box 2.2). Financial institutions may seek to add franchise value by spanning a broad array of business lines to make use of synergies between trading activity and other business lines. At the same time, trading income has become more volatile and may be vulnerable to a deterioration in economic and financial conditions. The Federal Reserve and the Treasury Department have proposed to require banks to set aside capital equivalent to 50 percent of their venture capital exposures, compared with the current 8 percent requirement for merchant-banking investments.<sup>9</sup>

Canadian banks enjoyed another year of strong profits reflecting robust economic growth. Net income for the top six banks rose by 25 percent, and average return on equity rose 3 percentage points to about 18 percent. Asset quality remained favorable, and charge-offs as a percentage of loans eased. The average Tier 1 capital ratio rose by about 1 percentage point to slightly more than 8 percent, and analysts generally consider that Canada's banking system can easily withstand a slowing in economic activity. The banking system underwent further consolidation, as one of the six major banks acquired the seventh-largest bank. In May 2000, the government introduced a formal process for official approval of bank mergers. The top banks that were denied permission to merge several years ago may soon seek official approval for mergers under this process.

U.K. banks also reaped strong profits, owing to healthy margins and a favorable economic environment. Net income rose at double-digit rates for most top banks, some of which registered returns on equity of 20 percent to 30 percent. As in past years, profits were especially strong in domestic retail businesses, which has prompted some official scrutiny.<sup>10</sup> As on the European continent, the U.K. banking sector saw consolidation during 1999, including the domestic acquisition of a major London bank and the acquisition of a French bank by a major

international bank headquartered in the United Kingdom. Asset quality remains strong for U.K. banks, and Tier 1 capital is robust, at about 8–10 percent for the top banks. Nonetheless, in the period ahead, U.K. banks may face challenges from increased competition in retail markets if strong profitability attracts new entrants.

Major continental European banks enjoyed robust trading income and faced increased pressure to consolidate in the environment of the new single currency. The introduction of the euro has catalyzed financial and corporate restructuring (including cross-border mergers and acquisitions) and increased financial sector competition. Euro-area regulatory, supervisory, and market surveillance are being viewed in Europe as requiring greater harmonization, cooperation, and coordination (Box 2.3). The three major German banks all registered strong results for the first six months of 1999. Gains in trading income ranged as high as 75 percent for one bank, and some banks earned record levels of commission income. French banks also enjoyed robust growth in revenues from capital markets activities, and in the first half of 1999, year-on-year pre-provision income grew at double-digit rates for three of the largest four banks. Italian banks appear to have sustained strong trading profits, though they likely did not improve upon the previous year's results. Despite continental banks' positive results, their returns on equity generally remained relatively low by international standards—no more than about 10 percent for most banks—and net interest margins generally remained weak, partly reflecting fragmentation and limited market shares in retail banking and (particularly in Germany) reflecting competition from public-law banks. Capital ratios are mixed, with reasonably strong Tier 1 capital ratios for major French and Italian banks (about 7–9 percent) contrasting with weaker levels for major German banks (generally closer

<sup>9</sup>See Greenspan (2000).

<sup>10</sup>See Cruickshank (2000).

### Box 2.2. Financial Sector Reform in the United States: The Gramm-Leach-Bliley Act

After failed past attempts to modernize financial legislation, the Gramm-Leach-Bliley Act was enacted in November 1999. This Act repeals Section 20 of the Glass-Steagall Act of 1933, which restricted affiliations between banks, securities firms, insurance companies, and other financial service providers. It also modifies the Bank Holding Company Act of 1956 by allowing holding companies that own commercial banks to engage in any type of financial activity. The Gramm-Leach-Bliley Act also allows securities firms to buy banks. Rather than serving as a sea change, the Act modernizes U.S. financial regulations to reflect the current state of the financial services industry.

One element of the Act is the creation of a new “financial holding company” structure that allows a banking organization to engage in any type of financial activity or to affiliate with any type of financial company (see the table). A financial holding company is a special type of bank holding company, except approval from the Federal Reserve is not required before engaging in nonbanking financial activities. Bank holding companies may also conduct certain nonfinancial activities, if the Federal Reserve sees the activity as complementary to financial activity, and if the activity does not pose a substantial risk to the safety and soundness of depository institutions. Activities could include real estate management, commodity trading, leasing, and accounting and auditing services. Through a financial holding company structure, a securities firm can acquire a bank, but the securities firm would have to face greater regulatory constraints. The Gramm-Leach-Bliley Act also allows financial holding companies to acquire insurance firms, and in effect eliminates the long-standing barriers to foreign insurance companies operating in the United States. In addition, national banks are allowed to own directly a new type of “financial subsidiary” that can participate in the newly authorized financial activities, except for insurance underwriting, real estate development and investment, merchant banking, or other complementary activities.<sup>1</sup>

<sup>1</sup>In general terms, state-chartered banks can engage in the same activities as national banks, as long as state law permits. In addition, state banks that are not members of the Federal Reserve System can apply to the Federal Deposit Insurance Corporation to engage in any activity, including those that a new financial holding company may engage in, and which are prohibited for the new financial subsidiaries of national banks.

National banks may still underwrite credit-related insurance and engage in complementary activities such as leasing, accounting, and auditing through the provisions of existing operating subsidiary regulations, however.

A sharp increase in the pace of consolidation is unlikely. Banks already have purchased securities firms, and the passage of the Gramm-Leach-Bliley Act does not create new acquisition opportunities. The impact of the Act may, however, be felt in smaller mergers and acquisitions that allow banks and nonbanks to integrate vertically. For example, mortgage lending companies would be free to add real estate services.

The Gramm-Leach-Bliley Act also empowers the Federal Reserve Board as the “umbrella supervisor” for financial holding companies—on the grounds that large financial services companies manage risk on a consolidated basis and it is important to understand the risks that the holding company faces. At the same time, the Act limits the Federal Reserve’s authority over financial companies regulated by functional regulators—the so-called Fed-lite provision. For example, a financial holding company that is regulated and supervised by the Federal Reserve may own a bank regulated by the Office of the Comptroller of the Currency, a broker-dealer supervised by the Securities and Exchange Commission, and an insurance company regulated by a state insurance regulator. As a result, the Federal Reserve faces an inherent tension of protecting banking entities from undue risk, while avoiding supervising the nonbank affiliates.

While providing broad guidelines, the Act does not specify how umbrella and functional supervision should be implemented in practice. The Federal Reserve is expected to rely as much as possible on the examinations and reports prepared by the functional regulators. At the same time, the Federal Reserve has the authority, under certain circumstances, to examine any affiliate of a financial holding company. The Federal Reserve Board can examine functionally regulated entities only if (1) there is reason to believe that the entity is engaged in activities that could pose risk to an affiliated depository institution; (2) it is necessary to inform the Board about the risk management system of the company; and (3) the Board has reasonable cause to believe that the entity is not in compliance with the banking

**Box 2.2 (concluded)**

**Key Provisions of the Gramm-Leach-Bliley Act**

Prior to the Gramm-Leach-Bliley Act	Under the Gramm-Leach-Bliley Act
<b>Activities of Holding Companies</b>	
Bank holding companies could engage in nonbanking activities deemed to be closely related to banking under the Bank Holding Company Act of 1956, but only on a limited basis. A bank holding company's securities subsidiaries could derive up to 25 percent of revenue from underwriting and dealing in bank ineligible securities, subject to various firewalls set up by the Federal Reserve. <sup>1</sup> Bank holding companies were generally prohibited from underwriting most forms of non-credit-related insurance.	A new type of holding company—a financial holding company—may engage in a broader range of financial activities that are outlined in the Act, determined by the Federal Reserve and in coordination with the Treasury to be financial in nature, or complementary. These activities include insurance and securities underwriting, merchant banking, and commercial investments made by insurance companies. No prior approval is required before a financial holding company conducts these activities, but an after-the-fact notice must be filed with the Federal Reserve. To engage in any of the new activities, all insured depository institution subsidiaries of the bank holding company must be well capitalized and well managed.
<b>National Banks</b>	
National banks were not allowed to underwrite or deal in municipal revenue bonds.	Well-capitalized national banks and their subsidiaries may underwrite and deal in revenue bonds without limitations.
National banks were allowed to have operating subsidiaries engaged in activities permissible under the National Bank Act. National banks could also have "special" operating subsidiaries that engaged in activities not permissible for the parent but incidental to the banking business.	The authority of national banks to have operating subsidiaries is unchanged. However, national banks may also have "financial subsidiaries" that engage in financially related activities that national banks cannot conduct directly. But financial subsidiaries are not allowed to engage in insurance underwriting, real estate development investment, or merchant banking. Operating subsidiaries of national banks can continue to underwrite credit-related insurance.
<b>Insurance</b>	
National banks and their subsidiaries could provide insurance if the Office of the Comptroller of the Currency determined that the activity was a part of, or incidental to, banking. Generally this restricted insurance underwriting activities to credit-related insurance.	National banks and their subsidiaries may not provide insurance products; title insurance (except under certain conditions) and underwriting annuities are also prohibited. Operating subsidiaries of national banks can continue to underwrite credit-related insurance. National banks and their operating subsidiaries can act as insurance agents or brokers under certain circumstances. The few financial subsidiaries of national banks can act as insurance agents or brokers without limitation.
<b>Savings and Loan Holding Companies</b>	
Savings and loan holding companies that controlled no more than one savings association were not subject to any statutory restrictions on business activities that were imposed on multiple savings and loan companies ("unitary thrift" loophole).	The "unitary thrift" loophole is closed and no company can acquire control of a savings association unless the company is engaged only in activities currently authorized for multiple thrift holding companies, or activities permissible for financial holding companies.

<sup>1</sup>Although Section 20 of the Glass-Steagall Act prohibited banks from being affiliated with firms that are principally engaged in the underwriting of securities, the Federal Reserve had interpreted this regulation to allow banks to affiliate with firms that underwrite bank impermissible securities as long as this was not a substantial part of the affiliate's business.

laws. To work effectively, the combination of umbrella and functional regulation will require open communication, and close cooperation and coordination among the various regulatory bodies. One shortcoming of the legislation might be that the Federal Reserve does not have immediate access to detailed information about the exposure of insur-

ance and securities subsidiaries even during times of market stress. Instead, it must rely on information from the functional regulators, who, unlike the Federal Reserve, do not operate under a mandate to ensure financial stability. Work on this issue is current under way at the Federal Reserve and the Securities and Exchange Commission.

to 5 percent). Central banks in France and Spain have asked their banks to increase provisioning so as to reflect risks over the full economic cycle.

Recently, considerable domestic consolidation has been seen in continental European banking systems, but (except in a few instances in Nordic and Baltic countries) relatively little cross-border consolidation. In Germany, the banking system remains highly fragmented, despite considerable consolidation among savings and cooperative banks. In the first half of 2000, a high-profile merger attempt between two major German banks was called off amid a disagreement over how to (or whether to) merge investment banking operations. In France, merger discussions among three major domestic banks culminated in a two-way merger that created Europe's second-largest bank in terms of assets. The Italian banking system has likewise seen a number of mergers in recent years at both the regional and national levels. Significant cross-border mergers seem to have been held back by the structure of cross-shareholdings of European bank shares, the limited economies of scale in cross-border retail mergers, the increased risk of failure compared with domestic mergers, and continued efforts to build "national champions" that can compete in cross-border investment banking.

Japanese major banks reported modest net profits in the year to March 2000, as operating profits and realized gains on equities more than offset substantial loan-loss charges. Equity market gains accounted for about half of aggregate adjusted pre-provision profits, while gains from fixed-income trading declined. Overall profitability remained relatively low by international standards, with annualized returns on equity at about 8 percent. Problem loans (as measured by the Financial Revitalization Law definition) declined by about 9 percent, largely reflecting the writing down of claims.

Analysts suggest that uncovered losses remain substantial, owing in part to a deterioration in the value of collateral. In addition, corporate restructuring may put further pressure on loan

quality in the period ahead. Tier 1 capital averages about 6½ percent for top banks, at the lower end of the range for top banks worldwide. Analysts have raised concerns about the quality of Tier 1 capital, which consists mainly of tax receivables (about 25 percent of aggregate Tier 1 capital, compared with a regulatory maximum of 10 percent in the United States) and government-subscribed preferred stock (about 25 percent of capital). Some have also raised concerns that subordinated debt and other limited-life liabilities will need to be refinanced within two years. In addition, banks' heavy investments in JGBs have significantly exposed them to a rise in long-term interest rates. By one estimate, a 100-basis-point rise in long-term interest rates costs the major banks ¥1.1 trillion, equivalent to about one-third of operating profits or 5 percent of Tier 1 capital.

Japan's financial landscape has changed considerably in the recent period, but banks face many of the same long-term challenges (see Annex I). One of the two nationalized major banks has been reprivatized, and the other is expected to be reprivatized soon. Since mid-1999, 4 major bank mergers involving a total of 11 banks have been announced. With these mergers, the 10 city banks that existed in September 1997 will be reduced to 5 (1 of the original 10 is no longer a city bank). Analysts see these mergers as a defensive response to the entry of nonfinancial companies into banking. In part, they are seen as a strategic response to Big Bang reforms, as only the strongest and best managed institutions will be able to compete effectively for capital markets business and postal savings outflows. It is less clear, however, whether they are an effective response to the challenge of raising core profitability, a challenge that will prove difficult to surmount in view of the limited scope for cost cutting given their already low costs by international standards, competition from public financial intermediaries in retail banking, and intense competition from foreign financial institutions in capital markets.



### Box 2.3. Financial Stability Challenges Arising from the Introduction of the Euro

The introduction of the euro in January 1999 has created new financial stability challenges for European authorities. To assess them, a working group was set up by the European Union's Economic and Financial Committee and chaired by Henk Brouwer of the Netherlands Bank.<sup>1</sup> This box summarizes the main conclusions of the report, and explores some of the issues that could arise with implementation.

The Brouwer Report reviews the framework for coordinating the activities of supervisors and central banks in light of the recent separation of the domains of supervision, which remains national, and central banking, which is conducted for the euro area as a whole by the European System of Central Banks (ESCB). It characterizes this framework as operating on several levels: the regulatory level based on the mutual recognition of national regulations and harmonization through EU directives; the supervisory level, based on the principle of home country consolidated supervision supported by a network of bilateral Memorandums of Understanding specifying the modalities of cross-border cooperation; and through multilateral forums for the exchange of information, such as the Banking Supervision Committee and the Group de Contact. The report concludes that in principle this framework is adequate but that it could be strengthened at the level of its practical functioning in two areas: through a convergence of supervisory practices to improve the monitoring of cross-border institutions and better coordination between banking, securities, and insurance supervisors in the supervision of financial conglomerates; and by strengthening the exchange of information between supervisors and between them and the ESCB, with emphasis on information about financial problems with potential contagion effects.

The recommendations relating to cooperation between supervisors are likely to prove uncontroversial as they are consistent with those

advocated by banking, securities, and insurance supervisors. Those concerning the exchange of information, however, leave open important questions relating to the type of information, its frequency, and its timeliness. The chance of achieving consensus on these issues is likely to be less for crisis prevention than for crisis management. In the latter case, cooperation should be relatively easy to achieve since information is typically only needed when a crisis situation develops and can be identified based on its features. For crisis prevention, however, supervisors and central banks must reach a consensus on both the factors contributing to the risk of a crisis and the information that needs to be monitored. Given the highly confidential nature of supervisory information and the costs involved, some supervisors may be reluctant to provide it unless they are convinced it is necessary. Two considerations in particular may make consensus hard to achieve. First, supervisors and central banks may have different perspectives. While supervisors are concerned about individual institutions, the ESCB focuses on systemic risk and risks to market functioning in the euro area as a whole. Second, there is an ongoing, rapid transformation of the European financial landscape, spurred in part by the introduction of the euro, the removal of barriers to competition and consolidation, the impact of new technology, and the development of much larger and more liquid financial markets. This has exposed financial institutions to new and possibly unfamiliar risks and may have contributed to changes in the nature of systemic risk. In areas where these considerations prevent (or delay) supervisors and the ESCB from reaching a consensus, the ESCB may lack the information to engage in effective crisis prevention, limiting its role largely to crisis management. Given these potential impediments to effective crisis prevention, it may be prudent to ensure that the ESCB has timely access to relevant supervisory information even when consensus has not been achieved. Work on this issue is under way within the ESCB.

<sup>1</sup>European Union, Economic and Financial Committee (2000).



**Table 2.4. Claims of Banks in BIS-Reporting Countries on Selected Emerging Markets as of December 1999<sup>1</sup>***(In billions of U.S. dollars)*

	All BIS-Reporting Countries	Japan	United Kingdom	United States	Euro Area <sup>2</sup>	France	Germany
<b>Asia</b>	<b>481.6</b>	<b>122.4</b>	<b>70.7</b>	<b>28.6</b>	<b>173.8</b>	<b>49.5</b>	<b>72.6</b>
(percent change from December 1998)	-13.1	-20.6	-10.3	4.9	-16.4	-3.0	-22.1
(percent change from June 1997)	-41.5	-55.7	-16.8	-37.0	-38.5	-29.0	-38.4
of which:							
China	46.6	11.8	5.3	1.5	20.1	7.1	7.1
Hong Kong SAR	112.4	36.3	25.0	4.9	33.9	8.6	14.4
Asia-5	164.6	47.1	13.1	15.7	60.5	19.2	24.9
<b>Latin America</b>	<b>275.2</b>	<b>11.4</b>	<b>22.1</b>	<b>60.3</b>	<b>138.1</b>	<b>23.5</b>	<b>39.2</b>
(percent change from December 1998)	-4.6	-21.5	-7.9	-2.9	-3.3	6.9	-4.3
(percent change from June 1997)	9.1	-21.5	30.2	0.6	25.2	12.7	22.7
of which:							
Argentina	67.0	1.7	6.4	11.0	39.4	4.1	9.5
Brazil	61.8	3.4	4.6	14.5	27.3	5.3	9.2
Mexico	61.2	2.8	5.3	17.2	26.3	6.9	7.1
<b>Transition countries</b>	<b>111.1</b>	<b>2.8</b>	<b>2.5</b>	<b>5.2</b>	<b>84.3</b>	<b>9.0</b>	<b>48.3</b>
(percent change from December 1998)	-8.6	-27.3	-12.9	-20.5	-11.2	-13.3	-14.9
(percent change from June 1997)	-4.7	-27.2	19.6	-55.0	9.0	12.4	-0.4
of which:							
Russia	48.1	0.5	0.7	1.7	38.7	4.2	25.6
<b>Middle East</b>	<b>67.8</b>	<b>4.3</b>	<b>8.1</b>	<b>5.8</b>	<b>29.8</b>	<b>7.7</b>	<b>14.2</b>
(percent change from December 1998)	7.5	9.3	6.7	2.3	2.7	6.9	-3.3
(percent change from June 1997)	33.4	46.3	62.2	30.4	21.6	7.9	22.1
<b>Africa</b>	<b>58.7</b>	<b>1.9</b>	<b>3.3</b>	<b>4.7</b>	<b>37.9</b>	<b>18.6</b>	<b>10.1</b>
(percent change from December 1998)	4.0	2.6	-11.3	43.7	-2.6	0.2	-0.3
(percent change from June 1997)	11.7	-44.0	-33.2	-17.8	29.6	76.8	13.9
<b>All emerging markets</b>	<b>994.4</b>	<b>142.9</b>	<b>106.6</b>	<b>104.6</b>	<b>463.9</b>	<b>108.3</b>	<b>184.3</b>
(percent change from December 1998)	-8.3	-19.9	-8.8	-0.2	-9.7	-0.8	-14.5
(percent change from June 1997)	-23.2	-52.5	-6.4	-17.6	-11.5	-6.8	-15.7

Sources: BIS, *International Banking and Financial Market Developments* (Basel, various issues); and IMF staff calculations.<sup>1</sup>On-balance-sheet claims, excluding claims on offshore centers (with the exception of Hong Kong SAR and Singapore, which are included in Asia).<sup>2</sup>Because data are not reported for Greece, Luxembourg, and Portugal, data are for Austria, Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, and Spain.

The exposure of mature-market banks to emerging markets continued to decline during 1999, though at a slower pace than in 1998 (Table 2.4). Total exposure of mature-market banks to emerging markets declined by about 8 percent to just under \$1 trillion at end-December 1999. Since mid-1997, bank exposures to emerging markets have decreased by about \$300 billion, a decline of about 25 percent. Exposures to Asian emerging markets, and particularly the countries affected by the 1997 crisis, have been strongly reduced; exposures to Africa, Latin America, and the Middle East have risen moderately.

## Developments in Derivatives Markets

During the period under review, activity in global derivatives markets was mixed (Tables 2.5–2.8). Between June 1998 and December 1999, notional principal (the reference amount for payments in a derivatives contract) in global OTC derivatives markets rose from \$72 trillion to \$88 trillion, while notional principal in organized exchange markets declined modestly from about \$15 trillion to about \$14 trillion (see also Chapter IV). Between April 1995 and April 1998 (the most recent period for which global OTC

**Table 2.5. Exchange-Traded Derivative Financial Instruments: Notional Principal Amounts Outstanding, 1986–First Quarter 2000**  
(In billions of U.S. dollars)

	1999													2000					
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Q1	Q2	Q3	Q4	Q1
Interest rate futures	370.0	487.7	895.4	1,200.8	1,454.5	2,156.7	2,913.0	4,960.4	5,807.6	5,876.2	5,978.8	7,580.8	8,019.9	7,913.9	8,137.8	8,892.7	8,605.1	7,913.9	8,451.8
Futures on short-term instruments	274.3	338.9	721.7	1,002.8	1,271.4	1,907.0	2,663.8	4,632.9	5,422.3	5,475.3	5,532.7	7,062.5	7,289.8	...	...	...	...	...	...
Three-month eurodollar	229.5	307.8	588.8	671.9	662.6	1,100.5	1,389.6	2,178.7	2,468.6	2,451.7	2,141.8	2,599.1	2,915.1	2,846.8	...	...	...	...	...
Three-month euroyen	0.0	0.0	0.0	0.0	243.5	254.5	431.8	1,080.1	1,467.4	1,400.7	1,462.2	1,629.9	1,236.4	1,562.7	...	...	...	...	...
Three-month euro–deutsche mark	0.0	0.0	0.0	0.0	14.4	47.7	110.0	229.2	421.9	425.7	654.6	626.2	1,016.9	1,210.1	...	...	...	...	...
Three-month PIBOR futures	0.0	0.0	15.7	12.4	23.3	45.8	132.5	223.7	184.6	167.1	209.6	212.2	133.7	...	...	...	...	...	...
Futures on long-term instruments	95.7	148.8	173.7	198.2	183.4	250.4	249.3	325.9	355.3	388.1	398.5	426.7	412.4	...	...	...	...	...	...
U.S. treasury bond	23.0	26.5	39.9	33.2	23.0	29.8	31.3	32.6	36.1	39.9	45.7	72.1	61.1	53.8	...	...	...	...	...
Notional French government bond	2.1	7.6	7.0	6.1	7.0	11.4	21.0	12.6	12.7	12.4	12.9	14.9	9.5	...	...	...	...	...	...
Ten-year Japanese government bond	63.5	104.8	106.7	129.5	112.9	122.1	106.1	135.9	164.3	178.8	145.6	118.0	142.3	181.9	...	...	...	...	...
German government bond	0.0	0.0	1.4	4.2	13.7	22.5	34.3	47.6	49.1	74.8	94.2	82.5	63.7	...	...	...	...	...	...
Interest rate options	146.5	122.6	279.2	387.9	599.5	1,072.6	1,385.4	2,362.4	2,623.6	2,741.8	3,277.8	3,639.8	4,623.5	3,755.5	4,861.6	4,914.3	4,352.8	3,755.5	3,726.9
Currency futures	10.2	14.6	12.1	16.0	17.0	18.3	26.5	34.7	40.4	33.8	37.7	42.3	31.7	36.7	40.6	51.5	44.6	36.7	107.4
Currency options	39.2	59.5	48.0	50.2	56.5	62.9	71.1	75.6	55.6	120.4	133.1	118.6	49.2	22.4	33.4	28.1	31.8	22.4	22.5
Stock market index futures	14.5	17.8	27.1	41.3	69.1	76.0	79.8	110.0	127.7	172.4	195.8	211.4	290.7	334.3	310.8	316.9	309.2	334.3	345.0
Stock market index options	37.8	27.7	42.9	70.7	93.7	132.8	158.6	232.5	242.8	338.3	394.9	810.0	916.8	1,458.8	1,055.8	1,297.5	1,371.6	1,458.8	1,381.6
Total	618.3	729.9	1,304.8	1,767.1	2,290.7	3,520.1	4,634.5	7,775.7	8,897.7	9,282.8	10,018.1	12,402.9	13,931.7	13,521.6	14,440.1	15,500.9	14,715.2	13,521.6	14,035.2
North America	518.1	578.1	951.7	1,155.8	1,268.5	2,151.8	2,694.7	4,361.4	4,823.9	4,852.4	4,840.7	6,349.1	7,360.6	6,933.2	7,441.3	8,291.3	7,223.8	6,933.2	7,503.6
Europe	13.1	13.3	177.7	251.2	461.5	710.8	1,114.4	1,778.0	1,831.8	2,241.9	2,828.5	3,587.8	4,401.0	3,955.2	4,839.4	4,712.9	4,759.8	3,955.2	4,018.5
Asia-Pacific	87.0	138.5	175.4	360.0	560.5	657.0	823.5	1,606.0	2,171.8	1,990.1	2,154.0	2,229.9	1,870.2	2,383.7	2,008.8	2,300.3	2,522.2	2,383.7	2,254.3
Other	0.0	0.0	0.0	0.1	0.2	0.5	1.9	30.3	70.3	198.4	194.8	236.1	300.0	249.6	150.5	196.4	209.4	249.6	258.9

Source: BIS.

**Table 2.6. Annual Turnover in Derivative Financial Instruments Traded on Organized Exchanges Worldwide, 1986–First Quarter 2000**  
(In millions of contracts traded)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000				
															Q1	Q2	Q3	Q4	Q1
Interest rate futures	91.0	145.7	156.4	201.0	219.1	230.9	330.1	427.0	628.6	561.0	612.2	701.6	760.0	672.7	168.4	178.4	178.0	147.9	209.1
Futures on short-term instruments	16.3	29.4	33.7	70.2	76.0	87.3	144.9	180.0	282.3	266.5	283.6	313.9	338.6	...	...	...	...	...	...
Three-month eurodollar	12.4	23.7	25.2	46.8	39.4	41.7	66.9	70.2	113.6	104.2	97.1	107.2	119.3	...	...	...	...	...	...
Three-month euroyen	0.0	0.0	0.0	4.7	15.2	16.2	17.4	26.9	44.2	42.9	38.2	36.4	30.9	...	...	...	...	...	...
Three-month euro-deutsche mark	0.0	0.0	0.0	1.6	3.1	4.8	12.2	21.4	29.5	25.7	36.2	44.3	55.0	...	...	...	...	...	...
Three-month PIBOR futures	0.0	0.0	0.5	2.3	1.9	3.0	6.4	11.9	13.2	15.5	14.1	14.4	5.3	...	...	...	...	...	...
Futures on long-term instruments	74.7	116.4	122.6	130.8	143.1	143.6	185.2	247.1	346.3	294.5	328.6	387.7	421.5	...	...	...	...	...	...
U.S. treasury bond	54.6	69.4	73.8	72.8	78.2	69.9	71.7	80.7	101.5	87.8	86.0	101.4	113.8	...	...	...	...	...	...
Notional French government bond	1.1	11.9	12.4	15.0	16.0	21.1	31.1	36.8	50.2	33.6	35.3	35.9	26.1	...	...	...	...	...	...
Ten-year Japanese government bond	9.4	18.4	18.9	19.1	16.4	12.9	12.1	15.6	14.1	15.2	13.6	12.9	11.9	...	...	...	...	...	...
German government bond	0.0	0.0	0.3	5.3	9.6	12.6	20.6	33.6	57.2	52.1	74.6	101.6	136.2	...	...	...	...	...	...
Interest rate options	22.2	29.3	30.5	39.5	52.0	50.8	64.8	82.9	116.6	225.5	151.0	116.8	129.7	118.0	31.5	32.5	28.2	25.7	29.9
Currency futures	19.9	21.2	22.5	28.2	29.7	30.0	31.3	39.0	69.7	99.6	73.7	73.6	54.5	37.1	8.7	9.5	10.2	8.8	11.5
Currency options	13.0	18.3	18.2	20.7	18.9	22.9	23.4	23.8	21.3	23.2	26.3	21.1	12.1	6.7	1.6	1.6	1.9	1.7	1.3
Stock market index futures	28.4	36.1	29.6	30.1	39.4	54.6	52.0	71.2	109.0	114.8	93.8	115.9	178.0	204.9	54.5	49.9	50.5	49.9	57.0
Stock market index options	140.4	139.1	79.1	101.7	119.1	121.4	133.9	144.1	197.5	187.3	172.3	178.2	195.0	322.5	69.1	76.6	81.3	95.5	107.0
Total	315.0	389.6	336.3	421.2	478.3	510.5	635.6	788.0	1,142.9	1,211.5	1,129.4	1,207.1	1,329.3	1,361.9	333.8	348.6	350.0	329.5	415.9
North America	288.7	318.3	252.2	287.9	312.3	302.7	341.4	382.3	513.5	455.0	428.3	463.5	530.0	462.8	123.1	124.1	115.1	100.5	129.5
Europe	10.3	35.9	40.8	64.4	83.0	110.5	185.0	263.5	398.0	354.7	391.7	482.8	525.9	604.7	144.3	149.1	159.2	152.1	200.7
Asia-Pacific	14.4	30.0	34.4	63.6	79.1	85.8	82.8	98.4	131.9	126.4	115.9	126.9	170.9	207.6	48.6	53.4	53.2	52.4	59.9
Other	1.6	5.5	8.9	5.3	3.9	11.6	26.3	43.7	99.4	275.4	193.4	134.0	102.5	86.8	17.7	21.9	22.6	24.6	25.7

Source: BIS.

**Table 2.7. Global Over-the-Counter (OTC) Derivatives Markets: Notional Amounts and Gross Market Values of Outstanding Contracts, 1998–99<sup>1</sup>***(In billions of U.S. dollars)*

	Notional Amounts				Gross Market Values			
	End-Jun. 1998	End-Dec. 1998	End-Jun. 1999	End-Dec. 1999	End-Jun. 1998	End-Dec. 1998	End-Jun. 1999	End-Dec. 1999
<b>Total</b>	<b>72,143</b>	<b>80,317</b>	<b>81,458</b>	<b>88,201</b>	<b>2,580</b>	<b>3,231</b>	<b>2,628</b>	<b>2,813</b>
<b>Foreign exchange</b>	<b>18,719</b>	<b>18,011</b>	<b>14,899</b>	<b>14,344</b>	<b>799</b>	<b>786</b>	<b>582</b>	<b>662</b>
Outright forwards and forex swaps	12,149	12,063	9,541	9,593	476	491	329	352
Currency swaps	1,947	2,253	2,350	2,444	208	200	192	250
Options	4,623	3,695	3,009	2,307	115	96	61	60
<b>Interest rate<sup>2</sup></b>	<b>42,368</b>	<b>50,015</b>	<b>54,072</b>	<b>60,091</b>	<b>1,160</b>	<b>1,675</b>	<b>1,357</b>	<b>1,304</b>
Swaps	29,363	36,262	38,372	43,936	1,018	1,509	1,222	1,150
Forward rate agreements	5,147	5,756	7,137	6,775	33	15	12	12
Options	7,858	7,997	8,562	9,380	108	152	123	141
<b>Equity linked</b>	<b>1,274</b>	<b>1,488</b>	<b>1,511</b>	<b>1,809</b>	<b>190</b>	<b>236</b>	<b>244</b>	<b>359</b>
Options	1,120	1,342	1,313	1,527	170	192	193	288
Forwards and swaps	154	146	198	283	20	44	52	71
<b>Commodity<sup>3</sup></b>	<b>451</b>	<b>415</b>	<b>441</b>	<b>548</b>	<b>38</b>	<b>43</b>	<b>44</b>	<b>59</b>
Gold	193	182	189	243	10	13	23	23
Other	258	233	252	305	28	30	22	37
Forwards and swaps	153	137	127	163	...	...	...	...
Options	106	97	125	143	...	...	...	...
<b>Other<sup>4</sup></b>	<b>9,331</b>	<b>10,388</b>	<b>10,536</b>	<b>11,408</b>	<b>393</b>	<b>492</b>	<b>400</b>	<b>429</b>
<i>Memorandum items:</i>								
Gross credit exposure <sup>5</sup>	n.a.	n.a.	n.a.	n.a.	1,203	1,329	1,119	1,023
Exchange-traded derivatives	14,792	13,932	14,440	13,522	...	...	...	...

Source: BIS (2000b).

<sup>1</sup>All figures are adjusted for double-counting. Notional amounts outstanding have been adjusted by halving positions vis-à-vis other reporting dealers. Gross market values have been calculated as the sum of the total gross positive market value of contracts and the absolute value of the gross negative market value of contracts with nonreporting counterparties.

<sup>2</sup>Single-currency contracts only.

<sup>3</sup>Adjustments for double-counting are estimated.

<sup>4</sup>For end-June 1998: positions reported by institutions that only participated in the 1998 Triennial Survey of Foreign Exchange and Derivatives Market Activity; for subsequent periods: estimated positions of those institutions.

<sup>5</sup>Gross market values after taking into account legally enforceable bilateral netting agreements.

turnover data are available), average daily turnover in global OTC derivatives markets rose by about 50 percent to \$1.3 trillion, while turnover on derivatives exchanges rose by about 16 percent to \$1.4 trillion. During 1999, amid the introduction of the euro, the waning of the effects of the autumn 1998 turbulence, and a reduction in leverage in the financial system, the pace of growth in OTC derivatives activities slowed (including an outright fall in OTC foreign exchange derivatives), though growth in interest rate derivatives picked up sharply in the second half of the year. In addition, fluctuations in the demand for and supply of underlying cash instruments (particularly government securities) had a particularly pronounced effect on fixed-

income markets (as noted above). Activity continued to decline at some of the major exchanges owing to the decreasing competitiveness of pit trading, though electronic exchanges gained increasing market share.

In the global OTC derivatives markets, decreased market depth, diminished liquidity, and increased volatility of spreads have reflected three factors: a reduction in market-making activity since the 1998 turbulence; reduced proprietary trading; and greater attention to risk management. In the U.S. dollar swap markets, for example, activity (as measured by turnover or outstandings) remains robust, but dealers report that swap spreads fluctuate by as much as 50 basis points intraday. Dealers, who account for a

**Table 2.8. Global Over-the-Counter (OTC) Derivatives Markets: Notional Amounts and Gross Market Values of Outstanding Contracts by Counterparty, Remaining Maturity and Currency Composition, 1998–99<sup>1</sup>**

(In billions of U.S. dollars)

	Notional Amounts				Gross Market Values			
	End-Jun. 1998	End-Dec. 1998	End-Jun. 1999	End-Dec. 1999	End-Jun. 1998	End-Dec. 1998	End-Jun. 1999	End-Dec. 1999
<b>Total</b>	<b>72,143</b>	<b>80,317</b>	<b>81,458</b>	<b>88,201</b>	<b>2,580</b>	<b>3,231</b>	<b>2,628</b>	<b>2,813</b>
<b>Foreign exchange</b>	<b>18,719</b>	<b>18,011</b>	<b>14,899</b>	<b>14,344</b>	<b>799</b>	<b>786</b>	<b>582</b>	<b>662</b>
By counterparty								
With other reporting dealers	7,406	7,284	5,464	5,392	314	336	200	214
With other financial institutions	7,048	7,440	6,429	6,102	299	297	246	281
With nonfinancial customers	4,264	3,288	3,007	2,850	186	153	136	167
By remaining maturity								
Up to one year <sup>2</sup>	16,292	15,791	12,444	12,140	...	...	...	...
One to five years <sup>2</sup>	1,832	1,624	1,772	1,539	...	...	...	...
Over five years <sup>2</sup>	595	592	683	666	...	...	...	...
By major currency								
U.S. dollar <sup>3</sup>	16,167	15,810	13,181	12,834	747	698	519	581
Euro <sup>3,4</sup>	8,168	7,658	4,998	4,667	193	223	206	239
Japanese yen <sup>3</sup>	5,579	5,319	4,641	4,236	351	370	171	262
Pound sterling <sup>3</sup>	2,391	2,612	2,281	2,242	55	62	63	55
Other <sup>3</sup>	5,133	4,623	4,697	4,709	252	219	205	187
<b>Interest rate<sup>5</sup></b>	<b>42,368</b>	<b>50,015</b>	<b>54,072</b>	<b>60,091</b>	<b>1,160</b>	<b>1,675</b>	<b>1,357</b>	<b>1,304</b>
By counterparty								
With other reporting dealers	18,244	24,442	27,059	30,518	463	748	634	602
With other financial institutions	18,694	19,790	21,149	24,012	515	683	559	548
With nonfinancial customers	5,430	5,783	5,863	5,562	182	244	164	154
By remaining maturity								
Up to one year <sup>2</sup>	17,422	18,185	20,287	24,874	...	...	...	...
One to five years <sup>2</sup>	16,805	21,405	21,985	23,179	...	...	...	...
Over five years <sup>2</sup>	8,141	10,420	11,800	12,038	...	...	...	...
By major currency								
U.S. dollar	13,214	13,763	16,073	16,510	311	370	337	376
Euro <sup>4</sup>	13,576	16,461	17,483	20,692	476	786	584	492
Japanese yen	7,164	9,763	10,207	12,391	194	212	192	232
Pound sterling	3,288	3,911	4,398	4,588	59	130	103	94
Other	5,126	6,117	5,911	5,910	120	177	141	110
<b>Equity-linked</b>	<b>1,274</b>	<b>1,488</b>	<b>1,511</b>	<b>1,809</b>	<b>190</b>	<b>236</b>	<b>244</b>	<b>359</b>
<b>Commodity<sup>6</sup></b>	<b>451</b>	<b>415</b>	<b>441</b>	<b>548</b>	<b>38</b>	<b>43</b>	<b>44</b>	<b>59</b>
<b>Other<sup>7</sup></b>	<b>9,331</b>	<b>10,388</b>	<b>10,536</b>	<b>11,408</b>	<b>393</b>	<b>492</b>	<b>400</b>	<b>429</b>

Sources: BIS (2000a, 2000b).

<sup>1</sup>All figures are adjusted for double-counting. Notional amounts outstanding have been adjusted by halving positions vis-à-vis other reporting dealers. Gross market values have been calculated as the sum of the total gross positive market value of contracts and the absolute value of the gross negative market value of contracts with nonreporting counterparties.

<sup>2</sup>Residual maturity.

<sup>3</sup>Counting both currency sides of each foreign exchange transaction means that the currency breakdown sums to twice the aggregate.

<sup>4</sup>Data before end-June 1999 refer to legacy currencies of the euro.

<sup>5</sup>Single-currency contracts only.

<sup>6</sup>Adjustments for double-counting are estimated.

<sup>7</sup>For end-June 1998: positions reported by institutions that only participated in the 1998 Triennial Survey of Foreign Exchange and Derivatives Market Activity; for subsequent periods: estimated positions of those institutions.

growing share of activity, increasingly use swaps rather than U.S. treasury securities to hedge fixed-income inventories. In this environment, the major market participants periodically re-

hedge in the same direction in reaction to market developments, giving rise to one-sided markets and increased liquidity risk. At the same time that liquidity risks have been rising, end

users have shown an increased interest in long-dated transactions, which raises the potential credit risk as well. Meanwhile, the decreased number of participants seems to have concentrated these liquidity and credit risks in a smaller number of institutions.

The structure of OTC derivatives markets has also been importantly influenced by developments in the major financial systems. In Japan, the withdrawal of Japanese financial institutions from international activity and weak credit ratings for the major financial institutions have also meant their withdrawal from global derivatives markets (though market participants suggest that some major Japanese institutions with relatively high credit ratings may have remained involved in trading with foreign counterparties). However, discussions with some market makers and dealers in Tokyo strongly suggest that Japanese financial institutions (including lower-rated city banks, regional banks, and insurance companies) are active in a domestically oriented derivatives market, principally involving yen-denominated interest rate swaps in which Japanese institutions pay floating rates and receive fixed rates (e.g., synthetic bond positions funded at floating rates). Given the importance of counterparty credit quality, major global financial institutions have largely stayed out of this market—which is said to account for about half of the yen interest rate swaps market (or some \$5 trillion in notional principal). This market is evidently broadly disconnected from international markets, with swaps generally indexed to domestic rather than international interbank floating rates (e.g., TIBOR rather than LIBOR).

The market for credit derivatives is currently small compared with other segments of the OTC derivatives markets—estimated at about \$500 billion in notionals and annual turnover—but promises strong future growth. Credit derivatives are in the early stages of the derivatives product cycle: there are relatively few actively traded products, only a few institutions actively make

markets, and the infrastructure is less developed than in other segments. In the near term, legal uncertainties, regulatory issues (including the inability to offset some kinds of risks for capital requirements), and operational challenges (including in documenting trades) may limit the market's development. Nonetheless, market participants foresee strong future growth, with the potential for credit derivatives to play a more central role in the management of credit risk, as these obstacles are surmounted.

### International Regulatory and Supervisory Developments

Recent financial market turbulence and crises have highlighted the importance of sound institutions, well-functioning financial infrastructures, and effective prudential regulations. These issues have recently been examined in the context of the proposed revisions to the 1988 Basel Accord on Capital Adequacy, the work of the Financial Stability Forum, and efforts by other public and private groupings.

#### Proposed Revisions to the Basel Accord on Capital Adequacy

Broad support has been expressed for the proposed revisions to the Basel Accord that were issued in June 1999, and in particular the objective of better aligning capital requirements with a bank's credit risk profile.<sup>11</sup> The proposals primarily address credit risk and rest on three pillars: minimum capital requirements, supervisory review of capital adequacy, and market discipline. The Basel Committee on Banking Supervision is considering how to resolve several important issues: the design and coverage of internal ratings; the inclusion of additional concepts of risks (operational risk and interest rate risk); the design of the new standardized approach; and the role and design of pillar 2 (enhanced supervision) and pillar 3 (market discipline).

<sup>11</sup>See Basel Committee on Banking Supervision (1999b) and IMF (1999), pp. 80–81. The Basel Committee's reports can be found on the BIS website at [www.bis.org](http://www.bis.org).

To provide banks with incentives to improve their credit risk systems, the Basel Committee is exploring how to link banks' internal credit assessments to a regulatory capital scheme. Its survey of current internal credit rating practices found that sophisticated banks employ a relatively small number of alternative approaches, which share some common elements.<sup>12</sup> The alternative approaches range from those that rely only on expert judgment to systems that are based exclusively on statistical models. Data constraints remain a challenge not only for banks to quantify risks, but also for supervisors to validate banks' internal ratings systems. Few banks estimate loss-given default for their exposures, while many estimate probabilities of default for each counterparty.

Some banks are not yet able to compile and analyze the information required for the internal ratings approach to capital requirements. As a result, the Basel Committee is seeking to design a flexible approach in which supervisors supply some of the required information. One option would be a two-tier approach. Banks in both tiers would classify credit risks by the probability of default. Banks that have well-developed internal credit rating systems would estimate loss in the event of default, while less sophisticated banks would use loss estimates assigned by their supervisors. The Committee appears to favor an evolutionary approach to internal credit ratings with different degrees of sophistication within each tier. Although the internal ratings approach was initially envisaged to apply primarily to sophisticated banks, banks and supervisors in some countries appear to favor a basic internal approach accessible to virtually all banks. Groups of smaller banks would pool loan data to estimate the necessary parameters for internal rating systems.

One specific issue in determining capital requirements is the treatment of risk mitigation techniques. Based on discussions with banks, the Basel Committee issued a report on risk mitigation techniques in the banking book (such as collateral, guarantees, and credit derivatives).<sup>13</sup> According to the banks surveyed, the current capital treatment fails to fully reflect hedging benefits and thus discourages the use of credit-risk mitigation techniques. The Basel Committee is evaluating how best to incorporate the risk-reducing benefits of such techniques and address residual risks that may arise from their use (for example, due to maturity and asset mismatches). Capital charges for hedging techniques could include two components: a charge predicated on the assumption that the hedge can be effectively implemented, and a charge for the risk that the hedge might not work.

The Basel Committee also proposed to design separate capital charges for operational risk and interest rate risk in the banking book. The Committee supports the development of internal models for capital charges that cover operational risks,<sup>14</sup> and envisages an evolutionary framework that would allow banks, depending on their sophistication, to move along a continuum from using basic indicators of operational risk toward full-fledged internal models.

The redesigned standardized approach will likely rely to some extent on external ratings—as was proposed by the Basel Committee last year. Nonetheless, there still are reservations about the usefulness of external ratings for sovereign and private claims. Some countries claim that agency ratings are not comparable across countries, both because of uneven coverage and because ratings do not seem to imply comparable default probabilities. Concern has also been expressed that reliance on external ratings could

<sup>12</sup>See Basel Committee on Banking Supervision (2000e).

<sup>13</sup>See Basel Committee on Banking Supervision (2000b).

<sup>14</sup>See Basel Committee on Banking Supervision (2000d). According to Bertalanffy (2000), this paper has not been circulated widely (it is, for example, not posted on the Basel Committee's website, though it is available on the U.K. Financial Services Authority's website at [www.fsa.gov.uk](http://www.fsa.gov.uk)). Instead, it is meant to serve as the basis for discussions with industry representatives.



give rise to incentives to become relaxed about the assessment of private credit risks. More generally, some have noted that the proposed framework of internal and external ratings may exacerbate procyclicality by, in effect, requiring banks to hold more capital in downturns and less during upturns. The Basel Committee is still studying these issues. One possibility could be to offset procyclical effects in part through enhanced supervision in pillar 2.

The respective roles of enhanced supervision (pillar 2) and market discipline (pillar 3) are still being debated.<sup>15</sup> Although supervision is considered a key part of the proposed Accord, it remains to be seen whether fully articulated guidelines for pillar 2 will be provided in the next round of proposals. The key issue is whether there should be extra capital charges imposed at the discretion of supervisors under pillar 2 and, if so, whether they should be differentiated by institution. Since it could take time to build the legal powers (and the psychological mindset) necessary to support enhanced supervision and to differentiate capital charges, some countries tend to prefer greater reliance on the rules-based pillar 1 and downplay the more discretionary pillar 2. In addition, pillar 3 could help ensure effective supervision of capital adequacy: market assessments of bank safety and soundness would directly affect the competitiveness of national banking systems.

### The Financial Stability Forum

The Financial Stability Forum, which was established by the Group of Seven industrial countries (G-7) in February 1999 to strengthen information exchange and cooperation in financial supervision and surveillance, held its third meeting in March 2000 in Singapore.<sup>16</sup> The Forum brings together national authorities responsible for financial stability from the G-7 countries and Australia, Hong Kong Special Administrative

Region (SAR), the Netherlands, and Singapore; international financial institutions (including the IMF); international regulatory and supervisory bodies; and committees of central bank experts. At the Singapore meeting, the Forum discussed potential threats to the stability of the international financial system and endorsed the policy recommendations by three working groups that had been set up in April 1999 to address issues related to highly leveraged institutions (HLIs), international capital flows, and offshore financial centers. As of end-June 2000, the IMF's Executive Board was still reviewing the Financial Stability Forum working groups' recommendations and had not yet endorsed any specific IMF involvement in the proposed Financial Stability Forum work program.

The Working Group on Highly Leveraged Institutions assessed the potential systemic effects arising from the buildup of leverage in financial markets, and the potential impact of HLIs on market dynamics and market integrity in small and medium-sized economies.<sup>17</sup> The report stressed that market discipline, and particularly due diligence in credit decisions, is the key constraint on leverage, both at any one firm and in the economy as a whole. The working group identified a breakdown in counterparty credit and trading discipline that failed to constrain leverage in 1998. The working group also detected weaknesses in the market infrastructure that prevented a rapid liquidation of LTCM. To address HLIs' threat to market dynamics, the working group emphasized the importance of credible macroeconomic, financial, supervisory and structural policies, since the risk of self-fulfilling crises tends to be low when fundamentals are strong.

Measures recommended by the working group include strengthened risk management by HLI counterparties and by highly leveraged institutions themselves; enhanced regulatory oversight of credit providers to HLIs; more public

<sup>15</sup>See, for example, Basel Committee on Banking Supervision (2000c).

<sup>16</sup>More information can be found on the Financial Stability Forum website ([www.fsforum.org](http://www.fsforum.org)).

<sup>17</sup>See Financial Stability Forum (2000c).

disclosure by HLLs and their counterparties; guidelines for foreign exchange trading practices; and a more robust market infrastructure (including bankruptcy laws and collateral practices). The working group urged authorities to strengthen market surveillance and recommended improved disclosure. The report, however, expressed skepticism about confidential reporting by HLLs to the authorities and saw practical difficulties with an international HLL credit register. The working group did not advocate a special bank capital requirement for lending to opaque HLLs or direct regulation of currently unregulated highly leveraged institutions, but it did not rule out possible future direct regulation.

The Working Group on Capital Flows evaluated the implications of prudential policies for capital flows.<sup>18</sup> It considered measures to reduce the volatility of capital flows and mitigate potentially adverse consequences for financial stability. The working group recommended that national authorities put in place a risk management framework for assessing the risks created by large and volatile capital flows. Such a framework should include asset and liability management procedures, and a strategy for public sector liquidity management. Risk monitoring could be assisted by compiling balance sheets for the economy and for key sectors to identify significant exposures to liquidity, currency, and other risks. The private sector, particularly banks, would also need to improve risk management. National authorities and international bodies could support this process by addressing gaps in statistics, encouraging greater transparency, and eliminating regulations that inadvertently encourage imprudent behavior. The working group advocated developing guidelines for sound practices in sovereign asset and liability management, under the lead of the IMF and the World Bank. It also urged the develop-

ment of markets for key financial instruments, particularly longer-term domestic-currency bonds. Controls on capital inflows, according to the working group, could be considered in some circumstances if they have a prudential element and fit into the risk management framework.

The Working Group on Offshore Financial Centers considered the impact of offshore financial centers on financial stability.<sup>19</sup> Offshore financial centers are not homogenous. Some are well supervised; problematic ones, however, constitute weak links in an increasingly integrated financial system. Inadequate supervision and lack of cooperation by some offshore financial centers cause prudential concerns (about the scope of effective supervision of internationally active intermediaries) and market integrity concerns (related to international enforcement of market abuses and illicit activity). Nonetheless, the report concluded that, to date, activities in offshore financial centers do not appear to have been a major source of systemic financial problems. To address concerns about problematic centers, the working group urged the implementation of internationally recognized standards by offshore financial centers, particularly as regards supervision and regulation, disclosure, and information sharing. The working group recommended a formal process for assessing offshore financial centers' adherence to international standards to be undertaken by the IMF (in cooperation with the World Bank and standard-setting bodies).<sup>20</sup> To bolster adherence to standards, the report proposed a menu of (both positive and negative) incentives, which includes market incentives, disclosure-type incentives, and supervisory incentives. Recently, based on its survey, the Financial Stability Forum released rankings that classify offshore financial centers into three groups according to the quality of their financial supervision and degree of international

<sup>18</sup>See Financial Stability Forum (2000b).

<sup>19</sup>See Financial Stability Forum (2000d).

<sup>20</sup>The IMF is currently exploring the structure of its involvement in the proposed assessment process. Various policy options about the scope of the assessments and their implementation are being considered.

cooperation.<sup>21</sup> The release of the rankings received wide, and not uniformly favorable, attention.

At the Singapore meeting, the Forum also discussed a task force report on the implementation of international standards, and it reviewed progress by a study group that is developing guidelines for deposit insurance arrangements. The Forum also considered the proposed revisions to the Basel Accord, and supervisory implications of internet banking and electronic finance.

### Additional Efforts by International Forums

Other public and private forums have also focused on promoting the smooth functioning of the financial system, particularly by addressing implications of HLI activities, bank liquidity management, effective designs of payment systems, stress testing by large internationally active financial institutions, and portfolio credit risk modeling. The International Organization of Securities Commissions (IOSCO), the Basel Committee, and a group of five hedge funds issued reports on the activities of HLIs (Box 2.4). The IOSCO Task Force on Hedge Funds and Other Highly Leveraged Institutions proposed a menu of regulatory incentives to promote improvements in risk management at securities firms that are counterparties of hedge funds and recommended public disclosure of HLI activities.<sup>22</sup> One year after the Basel Committee issued the Brockmeijer Report and a set of sound practices for banks' interactions with HLIs,<sup>23</sup> the Committee released a progress report in January 2000.<sup>24</sup> It indicated that banks had improved their due diligence processes vis-à-vis hedge funds and had reduced their HLI exposures, but

added that continuous efforts by banks and supervisors were necessary to lock in and further strengthen improvements in counterparty risk management. In February 2000, a group of five large hedge funds drafted sound practices for hedge fund risk management and internal controls,<sup>25</sup> and the Basel Committee outlined sound practices for managing liquidity in banking organizations.<sup>26</sup>

Closely related to liquidity management—albeit from a systemic perspective—are safe and efficient payment systems. The Committee on Payment and Settlement Systems of the Group of Ten industrial countries' (G-10) central banks recently articulated core principles for the design and operation of systemically important payment systems,<sup>27</sup> which stipulate the need for a well-founded legal basis of payments systems and for a clear understanding by participants of the payments systems' impact on their financial risks.

The Committee on the Global Financial System surveyed the current design of stress testing and its role in risk management by large financial institutions.<sup>28</sup> The Committee concluded that aggregating stress tests across firms to gain information about market liquidity under stress and to monitor risk taking does not seem feasible at this stage, in view of the difficulty of assembling the appropriate reporting population and questions concerning the compatibility of stress tests and the reporting burden. To gain insights into the vulnerabilities in the financial system, the Committee recommended a one-off survey of the scenarios currently used by risk managers.

The Institute of International Finance (IIF) and the International Swaps and Derivatives Association (ISDA) assessed portfolio credit risk

<sup>21</sup> For the rankings, see Financial Stability Forum (2000a).

<sup>22</sup> See Technical Committee of the International Organization of Securities Commissions (1999).

<sup>23</sup> See Basel Committee on Banking Supervision (1999a, 1999c). For a summary of these reports, see Annex IV in IMF (1999).

<sup>24</sup> See Basel Committee on Banking Supervision (2000a).

<sup>25</sup> See Caxton Corporation and others (2000).

<sup>26</sup> See Basel Committee on Banking Supervision (2000f).

<sup>27</sup> See Committee on Payment and Settlement Systems (1999).

<sup>28</sup> See Committee on the Global Financial System (2000).

## Box 2.4. Reports on Highly Leveraged Institutions (HLIs)

### *International Organization of Securities Commissions (IOSCO)*

In the wake of the near collapse of LTCM, IOSCO formed a Task Force on Hedge Funds and Other Highly Leveraged Institutions to address regulatory issues related to HLIs. The report, released in November 1999, contains recommendations regarding (1) strengthening risk management processes at securities firms that are counterparties to HLIs; (2) guidance to securities regulators on the scrutiny they should apply to regulated firms' dealing with HLIs; and (3) improving information flows about HLI activities to counterparties, regulators, market authorities, and the public.<sup>1</sup>

The report notes that HLIs do not generally raise investor protection concerns (since their direct investors are high-net-worth individuals and institutions), but may raise issues of systemic risk and market stability. It observes that the first line of defense against systemic risk is prudent risk management by regulated counterparties of HLIs and that many of the concerns raised by HLIs may be addressed by improvements in this area. With respect to HLIs, prudent counterparty risk management requires particularly close scrutiny of credit risk (including risk associated with collateral management) and legal risk. Since HLIs are frequently organized in and deal through offshore financial centers, there needs to be heightened awareness of the legal risks inherent in such dealings. Moreover, as the operations of HLIs are typically opaque, the challenge of obtaining information on an ongoing basis can be considerable.

The report offers a menu of regulatory incentives to promote improvements in risk management at securities firms and notes that regulators of firms with exposures to HLIs need to prevent risk management processes from being eroded over time by competitive pressures and other forces. It notes that information obtained bilaterally between HLIs and their counterparties may not be adequate for monitoring and

mitigating systemic risk since it does not provide a comprehensive overview of HLI activities. The report concludes that, on balance, enhanced public disclosure is necessary to materially reduce systemic risk. This should be encouraged on a voluntary basis underpinned by market discipline and, if necessary, by regulatory incentives.

### *Basel Committee on Banking Supervision*

In January 2000—one year after the publication of the Brockmeijer Report and a set of sound practices for banks' interactions with HLIs<sup>2</sup>—the Basel Committee on Banking Supervision issued a report that reviewed progress in the implementation of sound practices in banks' interactions with HLIs.<sup>3</sup> The review, based on a survey by bank supervisors in G-10 countries, indicates that banks have generally accepted that the problems in 1998 were largely attributable to excessive trust in the reputation of large hedge funds, an easing of risk management discipline due to competitive pressures, and overreliance on collateralization. Banks generally recognize the importance of improving credit exposure measurements, including potential future exposure. The report suggested that banks have reduced lending limits and exposures to HLIs. Overall, while a consensus has emerged about the need to improve counterparty risk management vis-à-vis HLIs and progress has been made in banks' due diligence and collateral management practices, the development and implementation of effective risk measurement and management systems has proven to be more difficult.

The Basel Committee reported that there are indications that banks have been successful in obtaining better information from HLIs, although HLIs remain reluctant to share sensitive information with counterparties and progress in measuring exposures to HLIs (including potential future exposures) has generally been slow. Senior bank managers have become more con-

<sup>1</sup>Technical Committee of the International Organization of Securities Commissions (1999).

<sup>2</sup>See Annex IV in IMF (1999).

<sup>3</sup>Basel Committee on Banking Supervision (2000a).

**Box 2.4 (concluded)**

vinced about the importance of stress-testing counterparty exposures, but most banks have not implemented major changes in their internal organization of risk management or internal control systems. According to the report, most bank supervisors have included the Basel Committee's recommendations in their policy guidelines, with some incorporating them into their regular on-site examinations of banks' risk management practices with respect to HLIs. The Committee emphasized that efforts have to be made on an ongoing basis by banks and supervisors to lock in and further strengthen improvements in counterparty risk management procedures.

***A Group of Five Hedge Funds***

In response to last year's Hedge Fund Study by the U.S. President's Working Group on Financial Markets,<sup>4</sup> in February 2000, a group of five large hedge funds drafted sound practices for hedge fund risk management and internal controls.<sup>5</sup> The primary goal of the report is to promote sound risk management and more effective internal controls in the hedge fund industry. It takes the view that hedge fund managers should clearly define their investment objectives and risk parameters and should adopt an organizational structure that ensures effective adherence to them through performance monitoring and clear reporting lines. It

<sup>4</sup>See United States, President's Working Group on Financial Markets (1999).

<sup>5</sup>Caxton Corporation and others (2000).

emphasizes the need to treat market, credit, and liquidity risks in an integrated fashion rather than separately, as is typically the case. It stresses that hedge fund managers should be aware of the structural limitations of market risk models (such as VaR) and should perform stress tests to determine how potential changes in market conditions could impact the market risk of the portfolio. Taking funding liquidity risk into account is critical since adequate funding gives an institution the ability to maintain a trading strategy without being forced to liquidate assets when losses arise. With respect to counterparty credit risk, policies and procedures need to be established to manage exposures to counterparties and actively monitor their creditworthiness.

The report recommends that hedge fund managers monitor several measures of leverage since leverage can magnify the effect of market, credit, and liquidity risk and can adversely impact a fund's liquidity. The report recommends a risk-based measure of leverage, which relates the riskiness of a portfolio to the ability of the hedge fund to absorb that risk. Funds should also establish procedures to limit exposure to potential operational risks. Concerning disclosure, the report suggests that hedge funds negotiate with counterparties the extent of financial and risk information that should be provided. In collaboration with regulators and counterparties, a consensus approach to public disclosure should be developed, with adequate safeguards that protect against the unauthorized use of proprietary information.

modeling systems used by leading banks.<sup>29</sup> The study included both a survey of the qualitative aspects of credit models and quantitative testing of selected models. Notwithstanding the fact that sophisticated models require highly skilled personnel and substantial investments in data systems, participating banks saw the use of portfo-

lio risk models increasing rapidly in the future. The report concluded that models yielded directionally consistent results when they were given similar inputs, and found that most models permit significant flexibility for setting parameters consistent with portfolio characteristics and risk appetite. Model choices and parameter settings

<sup>29</sup>See Institute of International Finance and International Swaps and Derivatives Association (2000).



are ultimately driven by a bank's risk management philosophy.

## Risks and Vulnerabilities

The primary risks and vulnerabilities in the global financial markets at the present juncture are associated with (1) uncertainties about whether low U.S. inflation can be sustained in the face of the robust expansion; (2) uncertainty about the effects of the recent correction in technology stocks and whether this will lead to a larger correction; (3) a heightened potential for exchange rate volatility; (4) the risks associated with the process of financial integration and financial restructuring in the euro area; and (5) changes to the OTC derivatives markets that have reduced depth and liquidity while increasing price volatility and concentration.

In the United States, a sharp rise in inflation from the strong expansion has thus far been avoided, in part because of high productivity growth. Nonetheless, unsustainably strong demand has led to increasing signs of underlying inflationary pressures, heightening uncertainty about whether productivity gains and a limited tightening in U.S. monetary policy can continue to keep inflation in check.<sup>30</sup> In this uncertain environment, a pickup in inflation, signs that high productivity growth might not be sustainable, and/or a sharper-than-expected tightening of monetary policy could lead to portfolio adjustments in U.S. and international financial markets. These adjustments could in turn affect real economic growth, through an impact on funding costs, wealth, and possibly other demand channels. Adjustments could include (1) corrections in U.S. equity and bond markets; (2) potentially harmful swings in capital flows; (3) rapid unwinding of hedges and related positions in derivatives markets; and (4) knock-on effects to global financial institutions, many of which are restructuring.

Some analysts have suggested that the risks associated with the U.S. equity market have shifted

from the risk of a broadly based correction to the risk that a narrowly based correction might have broader consequences. Thus far, the more speculative technology stocks have experienced the largest corrections in the face of rising interest rates and apparent funding difficulties at some companies, which have reduced expected profits. A key uncertainty about the broader implications of such a correction is the impact of the relatively high reliance on leveraged financing of equity investments, in the form of margin credit and equity derivatives. It is also possible that U.S. bond markets, foreign exchange markets, and foreign equity markets could experience significant knock-on effects if a correction were associated with a general loss of confidence in U.S. growth prospects and investment returns.

In the major currency markets, the tensions between near-term and medium-term influences that existed last year may have increased. In nominal effective terms, the dollar and the yen have strengthened, while the euro has weakened considerably. In the United States, strong asset returns and rising interest rates have contributed to upward pressure on the dollar; at the same time, the growing external deficit implies that the dollar might weaken against the other major currencies over the medium term. Nonetheless, tensions among the major exchange rates might be maintained or even strengthen in the near term; for example, signs of a pickup in U.S. asset returns could cause the dollar to appreciate. The risks surrounding the resolution of these tensions depend in part on features of the underlying foreign exchange markets. In the yen-dollar market, for example, there are heightened uncertainties about how market participants would react to the impact of technical, as against fundamental, factors. In the past, technical factors, including hedging practices (especially using inexpensive barrier options) and herd behavior by institutional investors, have amplified the market's response to

<sup>30</sup>The possibility of a hard landing and its domestic and international implications are described as an alternative scenario in IMF (2000b).

small shifts in fundamentals, and also made it more difficult to predict the direction of the yen's response. These factors make it difficult to assess whether a steepening of the JGB yield curve would give rise to capital flight or the repatriation of capital, and also make it difficult to assess how the Japanese authorities would respond. Because of these difficulties, some market makers have withdrawn from yen currency markets, and liquidity in the yen-dollar exchange rate could drop sharply amid shocks to fundamentals, raising the potential for unpredictable dynamics and volatility.

There are also risks in Japan's domestic financial markets related to the mix of macroeconomic policies. These policies are clearly necessary in the current environment, but the highly stimulative monetary and fiscal policies and, in particular, the near-zero cost of funds may be encouraging the evergreening of nonviable firms and delaying badly needed fundamental restructuring (as opposed to just mega-mergers) in the financial and corporate sectors. The mix of policies also seems to be encouraging position-taking in financial markets that cannot be profitably sustained in an environment of rising interest rates, particularly in the JGB market. For example, in money markets, six-month liquidity risks appear to be priced about the same as one-week risks, and corporate spreads may have been compressed beyond an economically justifiable level compared with spreads on comparable risks in other mature markets (in May 2000, the credit spread on five-year A-rated Japanese corporate debt was about one-third of the credit spread on comparable U.S. corporate debt; corporate bond spreads against swap rates were likewise low in Japan compared with other countries). In addition, lacking good lending opportunities, Japanese banks are heavily investing in JGBs as a low-risk source of revenues. If the recovery strengthens more quickly than expected and stimulation is abruptly reversed, the balance of supply and demand in the JGB market could also shift abruptly, and drive yields on JGBs sharply higher and thereby generate capital losses for the already relatively unprofitable financial sec-

tor. Moreover, a "market-within-a-market" in OTC derivatives (interest rate swaps), composed mainly of "second-tier" Japanese institutions (those rated BB or lower), means there is a group of institutions that are also highly exposed to a rise in interest rates (because their swap positions are equivalent to funded long bond positions). This compounds the risk that shocks to the JGB market could be amplified and propagate in disruptive ways, and might give rise to international portfolio rebalancing, capital flows, and large swings in the yen, although technical factors (including hedging of foreign exchange risk by Japanese investors) make it unclear whether the yen would appreciate or depreciate. These risks require vigilant monitoring and proactive management by the Japanese authorities to ensure both macroeconomic and financial stability in the period ahead. In addition, it will be critical to carefully and transparently manage the transition from a zero-rate monetary policy and stimulative fiscal policy to policies more appropriate for a recovering economy, once signs of a sustainable recovery are at hand.

In the euro area, the expansion of financial markets has catalyzed financial and corporate restructuring (especially in financing mergers and acquisitions) and increased financial sector competition. Against this, the euro area's rapid shift toward greater reliance on market financing, while conveying important benefits, has also increased the difficulty of gauging the impact of monetary policy by changing the transmission mechanism in ways that are not yet clear. Asset prices may have come to play an increasingly important role in the monetary transmission mechanism and as a source of financial fragility, and could pose a new challenge of distinguishing relative asset price movements from the effects of excess liquidity. An integrated bond market would be especially important to the smooth transmission of monetary policy. As yet, however, the lack of even a benchmark yield curve indicates that euro-area financial markets are far from fully integrated. Increasing reliance on off-balance-sheet financing also complicates the task of assessing the monetary policy transmission



mechanism, including by making it more difficult to interpret changes in the monetary aggregates. These uncertainties raise the risk that the impact of changes in the stance of monetary policy and its distribution across the euro area could be misinterpreted and lead to unexpected outflows and portfolio adjustments.

An assessment of these risks is complicated by developments in OTC derivatives markets, where the withdrawal of market-making capacity and monetary tightening since the market turbulence of 1998 have reduced market depth and liquidity and increased price volatility, market concentration, and credit exposures. In addition, periodic increases in volatility in some cash markets (such as the U.S. treasury market and foreign exchange markets), and the tight linkages between cash and OTC derivatives markets, also suggest an increased potential for volatility in the derivatives markets. At the same time, the average maturity of OTC contracts has lengthened, which requires more active management even as the OTC derivatives markets have become less liquid, more highly concentrated, and more volatile. These increased liquidity and credit risks pose significant challenges for private risk managers, and those institutions with long-dated derivatives exposures may be particularly vulnerable to market shocks and turbulence.

There are several possible mechanisms—each of them originating in the globalization of finance—that might have the effect of combining risks and transmitting them across markets. Something like this occurred in the autumn of 1998, when a seemingly relatively small disturbance had a disproportionately large impact on a range of deep and liquid markets. In the current uncertain environment, a change in sentiment and confidence about the U.S. economy, for example, could be associated with several adverse changes (sizable capital outflows, a decline in the U.S. dollar, and a correction in U.S. equity and bond markets) with the potential for spillovers and even contagion to other countries and markets. As examined in detail in Chapter IV, OTC derivatives markets are one possible source of transmission. These markets are central to global

finance and they have facilitated the integration of markets and countries, in part through the structure of contracts and their relation to underlying asset markets. In certain circumstances, disturbances in one underlying market can be transmitted through derivatives markets across borders and markets. A second source of transmission is the institutional structure of the modern international financial system, in which a large share of transactions are intermediated across borders by a relatively small number of large internationally active financial institutions. When a critical mass of these institutions rebalance portfolios and risks, both on behalf of their clients and for their own account, they can have a major impact on national and global markets. Moreover, because each of them is systemically important—in the sense that they cannot be liquidated without risking an international disturbance—concerns about credit risk in one institution can spread rapidly to other institutions and markets. A third source is the increasing extent to which national capital markets have become integrated into global markets. This has enabled economic entities in economies around the world to access a larger pool of capital, but it has also increased the potential for cross-border spillovers and contagion. All of these elements of financial globalization tend to complicate the assessment of private and systemic risk in international financial markets, and thereby heighten the challenge of safeguarding both macroeconomic and financial stability.

## References

- Bank for International Settlements, 2000a, *Quarterly Review: International Banking and Financial Market Developments* (Basel, June).
- \_\_\_\_\_, 2000b, *Press Release: The Global OTC Derivatives Market at End-December 1999* (Basel, May 18).
- Bank of Japan, 2000, *Monthly Report of Recent Economic and Financial Developments* (Tokyo, May).
- Basel Committee on Banking Supervision, 1999a, *Banks' Interactions with Highly Leveraged Institutions* (Basel: Bank for International Settlements, January).
- \_\_\_\_\_, 1999b, *A New Capital Adequacy Framework* (Basel: Bank for International Settlements, June).

- \_\_\_\_\_. 1999c, *Sound Practices for Banks' Interactions with Highly Leveraged Institutions* (Basel: Bank for International Settlements, January).
- \_\_\_\_\_. 2000a, *Banks' Interactions with Highly Leveraged Institutions: Implementation of the Basel Committee's Sound Practices Paper* (Basel: Bank for International Settlements, January).
- \_\_\_\_\_. 2000b, *Industry Views on Credit Risk Mitigation* (Basel: Bank for International Settlements, January).
- \_\_\_\_\_. 2000c, *A New Capital Adequacy Framework: Pillar 3—Market Discipline* (Basel: Bank for International Settlements, January).
- \_\_\_\_\_. 2000d, *Other Risks: Discussion Paper* (Basel: Bank for International Settlements, April).
- \_\_\_\_\_. 2000e, *Range of Practice in Banks' Internal Ratings Systems* (Basel: Bank for International Settlements, January).
- \_\_\_\_\_. 2000f, *Sound Practices for Managing Liquidity in Banking Organisations* (Basel: Bank for International Settlements, February).
- Bertalanffy, Elisabeth, 2000, "Basle Issues New Operational Risk Paper," *International Financing Review*, Issue 1331 (April 29), p. 76.
- Bildersee, John S., John J. Cheh, and Changwoo Lee, 1990, "The International Price-Earnings Ratio Phenomenon: A Partial Explanation," *Japan and the World Economy*, Vol. 2 (September), pp. 263–82.
- Caxton Corporation, Kingdon Capital Management LLC, Moore Capital Management, Inc., Soros Fund Management LLC, Tudor Investment Corporation, Sullivan & Cromwell, and Rutter Associates, 2000, *Sound Practices for Hedge Fund Managers* (New York: Rutter Associates, February).
- Committee on the Global Financial System, 2000, *Stress Testing by Large Financial Institutions: Current Practice and Aggregation Issues* (Basel: Bank for International Settlements, April); available via the Internet: <http://www.bis.org/index.htm>
- Committee on Payment and Settlement Systems, 1999, *Core Principles for Systemically Important Payment Systems: Report of the Task Force on Payment System Principles and Practices* (Basel: Bank for International Settlements, December).
- Counterparty Risk Management Policy Group, 1999, *Improving Counterparty Risk Management Practices* (New York, June). Available via the Internet: <http://www.crpmgroup.org>
- Cruikshank, Don, 2000, *Competition in U.K. Banking: A Report to the Chancellor of the Exchequer* (Norwich: Her Majesty's Stationery Office).
- European Central Bank, 2000a, "The Euro Area One Year After the Introduction of the Euro: Key Characteristics and Changes in the Financial Structure," *ECB Monthly Bulletin* (Frankfurt, January), pp. 36–51.
- \_\_\_\_\_. 2000b, *ECB Monthly Bulletin* (Frankfurt, May).
- European Union, Economic and Financial Committee, 2000, *Report on Financial Stability*, Economic Paper No. 143 (Brussels, May).
- Financial Stability Forum, 2000a, "Financial Stability Forum Releases Grouping of Offshore Financial Centres (OFCs) to Assist in Setting Priorities for Assessment," Public Releases (Basel, May 26). Available via the Internet: <http://www.fsforum.org/press/home.html>
- \_\_\_\_\_. 2000b, *Report of the Working Group on Capital Flows* (Basel, March).
- \_\_\_\_\_. 2000c, *Report of the Working Group on Highly Leveraged Institutions* (Basel, March).
- \_\_\_\_\_. 2000d, *Report of the Working Group on Offshore Financial Centres* (Basel, March).
- Greenspan, Alan, 2000, "Banking Evolution," remarks at the 36th Annual Conference on Bank Structure and Competition of the Federal Reserve Bank of Chicago, Chicago, Illinois, May 4.
- Institute of International Finance, and International Swaps and Derivatives Association, 2000, *Modeling Credit Risk: Joint IIF/ISDA Testing Program* (Washington: Institute of International Finance, February).
- International Monetary Fund, 1998, *World Economic Outlook and International Capital Markets: Interim Assessment*, World Economic and Financial Surveys (Washington, December).
- \_\_\_\_\_. 1999, *International Capital Markets: Developments, Prospects, and Key Policy Issues*, World Economic and Financial Surveys (Washington, September).
- \_\_\_\_\_. 2000a, *United States: Staff Report for the 2000 Article IV Consultation*, IMF Staff Country Report No. 00/89 (Washington).
- \_\_\_\_\_. 2000b, *World Economic Outlook*, World Economic and Financial Surveys (Washington, May).
- Technical Committee of the International Organization of Securities Commissions, 1999, *Hedge Funds and Other Highly Leveraged Institutions* (Montreal: International Organization of Securities Commissions, November). Available via the Internet: <http://www.iosco.org/docs-public/1999-hedge-funds.html>

United States, Board of Governors of the Federal Reserve System, 2000, *Flow of Funds Accounts of the United States: First Quarter 2000* (Washington).  
United States, Department of the Treasury, *Treasury Bulletin* (Washington, various issues).

United States, President's Working Group on Financial Markets, 1999, *Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management* (Washington, April). Available via the Internet: <http://www.treas.gov/press/releases/99report.htm>