



IV

Developments and Trends in Mature Financial Markets

Recent macroeconomic trends in the major advanced countries have been broadly supportive of continued favorable developments in the mature capital markets, notwithstanding intermittent pauses, in some cases related to market uncertainty about economic policies or the impact of the Asian crisis.^{1,2} Inflation has remained low, economic activity has remained robust in North America and has picked up in much of Europe, and the convergence process in Europe has been smooth. Fiscal consolidation in a wide range of advanced countries has provided ample space for private market participants to borrow in a wide variety of domestic and international credit markets. Monetary conditions too have remained broadly supportive of capital market activity. The main risks in the period ahead revolve around the performance of the Japanese yen, the fragilities in emerging markets, whether bond markets have appropriately priced-in a number of uncertainties, the sustainability of equity prices, and changes in the structure of global financial markets.

Foreign Exchange Markets

During the past 12 months, the yen-dollar exchange rate has moved from ¥114 per dollar to ¥138, a rise of about 20 percent in the value of the dollar (Figure 4.1). The strength of the dollar against the yen continued to be driven by relatively wide interest rate differentials, reflecting in part the sharp differences in cyclical positions. The dollar's rise was particularly robust in the second half of 1997, coinciding with a strengthening of net demand for U.S. assets as Japan's domestic financial troubles and the Asian crisis influenced market sentiment (as was also reflected in the rise in implied volatility in the price of yen/dollar options). During this period, the dollar rose in spite of market concerns that the Japanese authorities would sell dollars to curb the U.S. currency's rise (spurred in part by official statements and some actual sales by the Bank of Japan in December), and that Japanese financial institutions would sell dollar securities to raise funds.

¹This section focuses principally on developments during the period January 1997 to June 1998. The data cutoff is June 30, 1998.

²For a full review of recent policy and macroeconomic developments, see International Monetary Fund (1998).

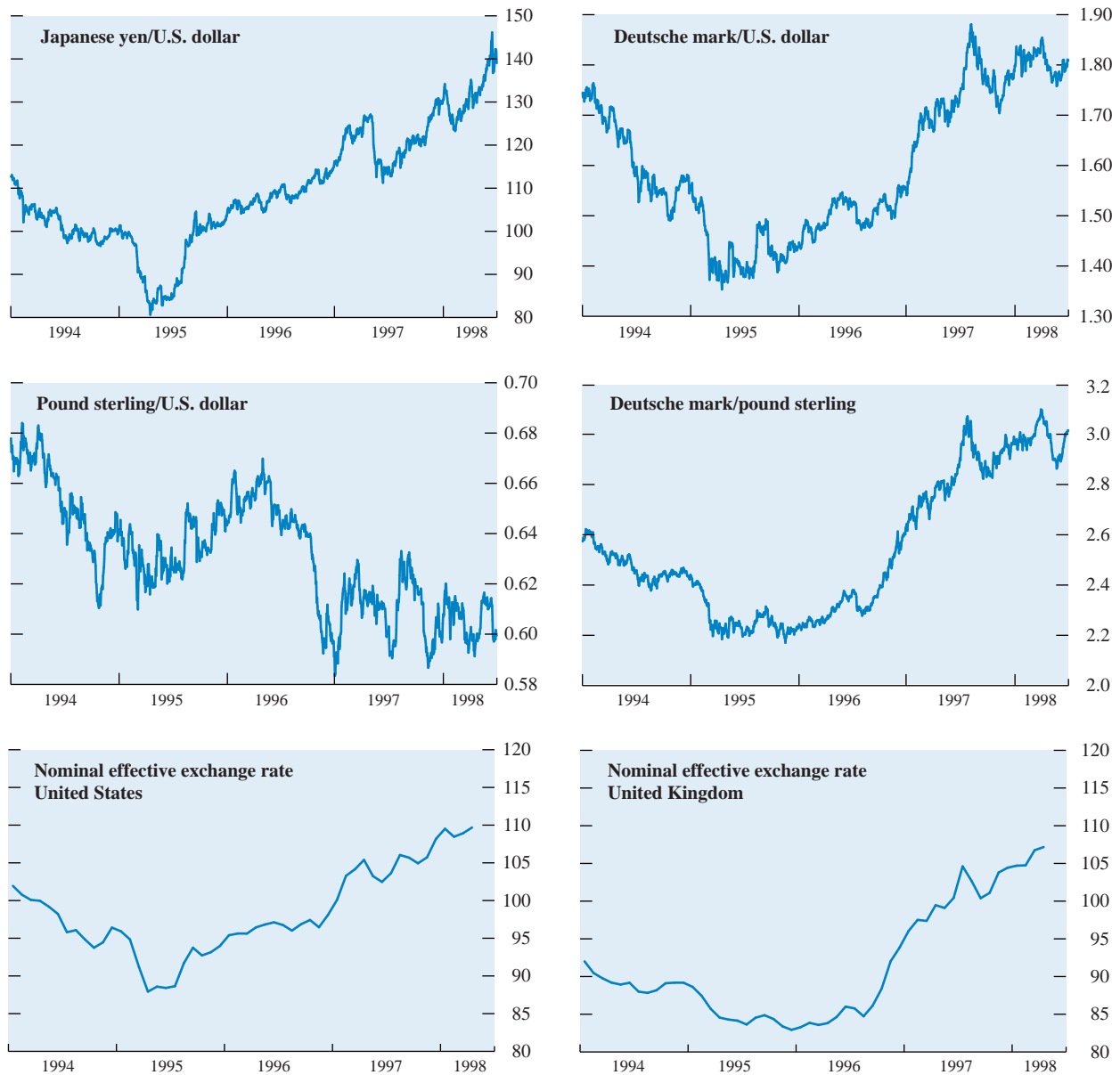
The dollar appreciated against the major currencies in Europe, with the exception of the pound sterling, reflecting differences in cyclical positions—and related interest rate differentials—and developments in the EMU process. Exchange rate movements appear to have been heavily influenced, from time to time, by market views about the outlook for post-EMU Europe, and in particular about the conduct of monetary policy by the European Central Bank (ECB), the prospective strength or weakness of the euro, and news about the initial composition of EMU and the strength of likely members' economies. Uncertainty about the prospects for the dollar vis-à-vis the major European currencies was manifested in a rise in implied volatility in the prices of deutsche mark/dollar options during the second half of 1997. The pound sterling was the notable exception to the weakness of European currencies against the dollar; it appreciated against other major continental European currencies as well. The pound overcame its post-ERM crisis slump, reached its highest level in trade-weighted terms since the late 1980s, and in April 1998 reached its highest monthly level against the deutsche mark since July 1989 (though it later lost some ground). This positive market sentiment was driven by the United Kingdom's relatively strong cyclical position and its "outsider" status.

Within Europe, the broad acceptance by financial markets of EMU as a "done deal" meant that the fixing of European cross-rates and the formal selection of member countries was associated with calm financial markets, in spite of last-minute uncertainties about succession in the leadership of the ECB (Figure 4.2). Indeed, the major continental currencies strengthened against the dollar in the first week of May 1998, though they later gave up ground. The confidence of financial markets in the EMU process was also evident in the proliferation of new euro-denominated products during the year and the degree of interest in products such as euro-fungible securities.

The introduction of the euro will likely be the single most significant event for global financial markets over the next few years.³ Euroclear has estimated that

³For a discussion of EMU from a capital markets perspective, see Prati and Schinasi (1997).

Figure 4.1. Major Industrial Countries: Spot Exchange Rates and Nominal Effective Exchange Rates

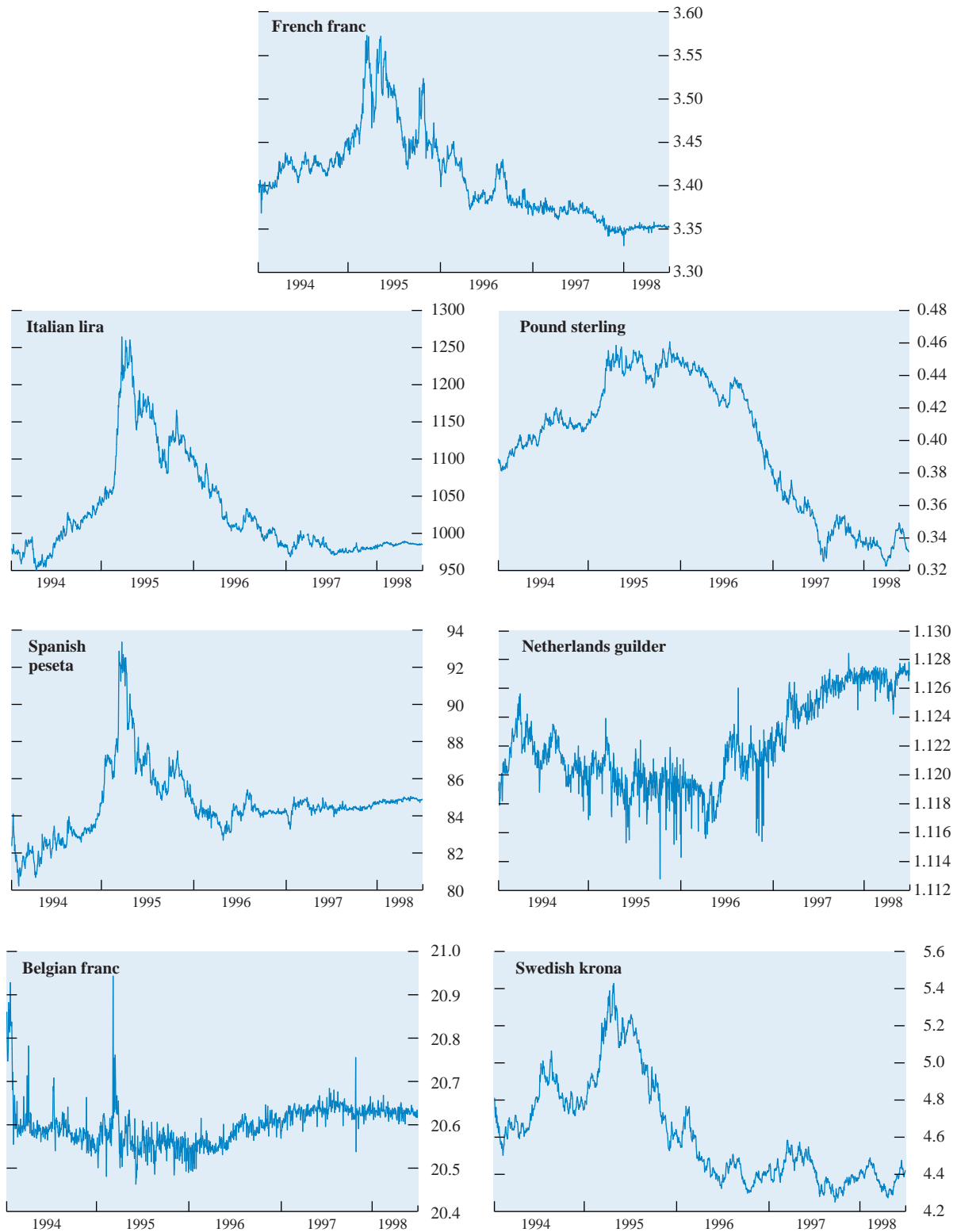


Sources: Bloomberg Financial Markets L.P.; and International Monetary Fund, *International Financial Statistics* database.

more than 1,000 government bonds will be redenominated into euros from 1999, and there already have been several “euro-firsts” in financial markets. Among these are the first euro-denominated emerging-market international bond; the largest ever euro-denominated bond issue (euro 4 billion, or \$4.4 billion), issued by Italy (also the largest fixed-rate bond ever issued in any currency); the first corporate syndicated loan denominated in euro; the first euro-denominated convertible bond; the first euro junk bond; the first euro-

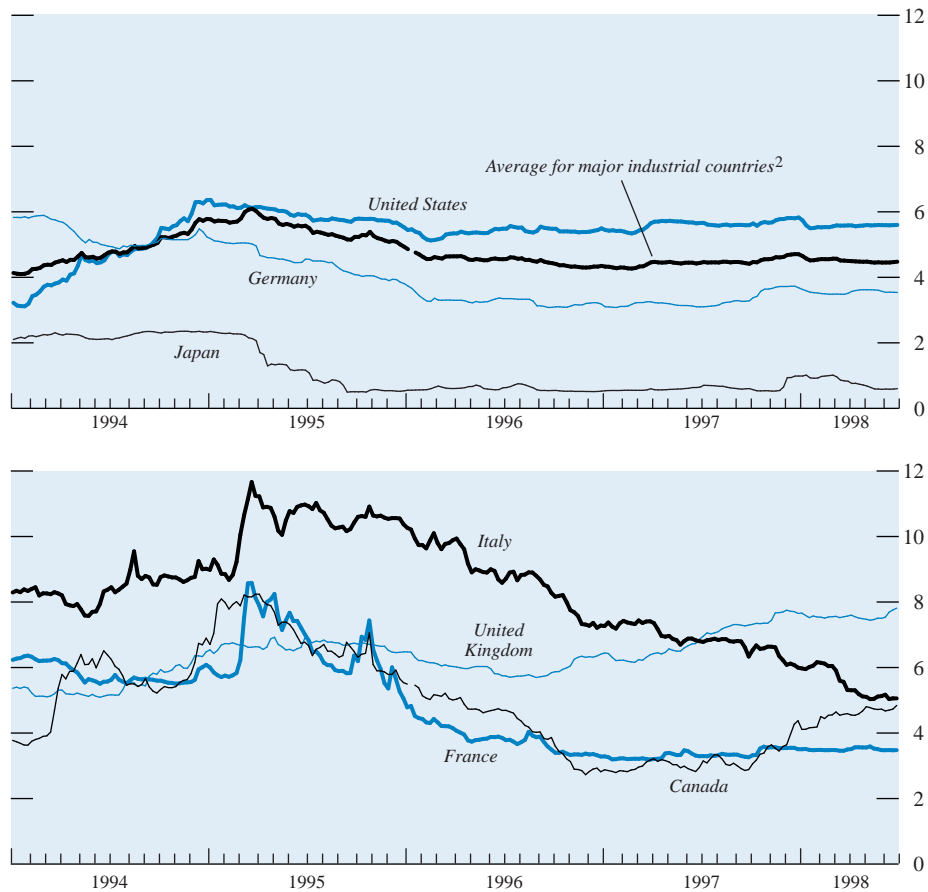
denominated bank account; and the first euro 30-year treasury, issued by Spain. This would suggest a degree of acceptance of the euro in global capital markets, and a degree of optimism that there will be a relatively smooth transition to EMU. Looking further down the road, it has been estimated that portfolio shifts of as much as \$1 trillion may occur into euro-denominated assets in the medium term. Nevertheless, uncertainties remain about the process of redenomination more broadly viewed, particularly for nonsovereign issues.

Figure 4.2. Major European Countries: Local Currency Versus Deutsche Mark, January 3, 1994–June 30, 1998



Source: Bloomberg Financial Markets L.P.

Figure 4.3. Major Industrial Countries: Short-Term Interest Rates¹
(In percent a year)



¹Three-month certificates of deposit rate for the United States and three-month interbank deposit rates for other countries. Weekly averages of daily observations are plotted for all countries.

²1987 purchasing power parity GDP weights.

Credit Markets

Yields on mature-market credit instruments have generally trended lower in the recent period. This development reflects the confluence of many factors, including generally low and declining inflation rates, substantial liquidity in the major markets, the market's view that such liquidity will persist in the medium term, limited market concerns about risks in longer-term securities in mature markets, cyclical weaknesses in some major economies, and a "flight to quality" in the wake of the Asian crisis. Underlying structural factors have contributed as well, among them the decline in the gross new supply of government bonds and prospects that the supply will continue to shrink over the medium term. Over much of the recent period, the downward trend in interest rates

has also coincided with a compression in credit and yield-curve spreads.

Money and Repo Markets

Short-term interest rates on money-market instruments have ranged around levels that are low by recent historical standards (Figure 4.3). Short-term deutsche mark and Japanese yen interest rates (as measured by three-month LIBORs) are around their lows of the current decade. U.S. dollar short-term interest rates have tended to range around levels rarely touched since the late 1960s and early 1970s but are above the lows of the early 1990s, when U.S. monetary policy sought to boost the economy and alleviate pressure on the banking system. Driven by prospects for EMU, in most of Europe, short-term rates have

generally declined since early 1997, despite a modest tightening by several central banks in October 1997. In the United Kingdom, however, monetary tightening to restrain inflation has pushed up money market rates by more than 90 basis points.

In addition to the above-mentioned general factors that have worked to keep short-term yields relatively low, special factors in each of the major financial centers have contributed to ample liquidity. These special factors include, in Japan, the weak economy and domestic financial markets and the longstanding policy of forbearance in the banking system; in the United States, generally liquid conditions in the dollar credit markets and some flight to quality in the wake of the Asian crisis; and in continental Europe, high levels of unemployment and the appearance that risks of inflationary pressures have receded.⁴

In Japan, low levels of overnight rates have stood in contrast with the higher rates faced by Japanese banks in the interbank market compared with other international banks, the differential known as the “Japan premium” (see Box 5.3 in Chapter V). The behavior of this premium reflects, inter alia, interbank market sentiment about the riskiness of Japanese banks and is in turn reflected in conditions in the credit markets in Japan and in other places where Japanese banks lend.

The rise in the Japan premium has had both domestic and international consequences. In the first instance, the high cost of interbank funds most likely contributed to the difficulties experienced by domestic businesses in obtaining credit. In addition, starting in the fall of 1997, Japanese banks reportedly cut, or refused to roll over, their exposures in some emerging and mature markets, as rising costs priced them out of international markets and as their need to shore up balance sheets increased. The implications are substantial for many markets, and particularly so for the syndicated loan market, where it is estimated that Japanese banks extend half of the total of syndicated loans in Asia. Japanese banks have also been reported to have withdrawn somewhat from Latin American loan markets as well. Finally, the Japan premium may have led to a widening of spreads on swaps paying yen for dollars, as Japanese banks accessed dollar markets through the forward currency markets by borrowing in yen, selling yen spot, and buying yen forward.

U.S. money markets continued to expand strongly in the recent period. Commercial paper outstanding rose from about \$790 billion at end-1996 to about \$970 billion at end-1997, and topped \$1 trillion early in 1998. Repos outstanding (financing by U.S. government securities dealers) rose from about \$960 billion at end-1996 to about \$1.1 trillion at end-1997, and stood at over \$1.5 trillion in May 1998; growth in

reverse repos has been on a similar scale. Retail participation in money markets also grew strongly over the period, as assets managed by U.S. money market mutual funds climbed from about \$760 billion at end-1996 to almost \$900 billion at end-1997, and rose further to about \$970 billion in April 1998.

In Europe, the size of repo markets has grown substantially in the last few years. In France and Germany, the elimination of reserve requirements on most repo transactions early in 1997 contributed to this growth. The U.K. gilt repo market has likewise flourished since its establishment in January 1996, benefiting from the desire of the Bank of England, since March 1997, to use the gilt repo market for controlling liquidity. Indeed, the use of repo markets as a channel of monetary policy is a key factor that has encouraged the development of private repo markets in France, Germany, and the United Kingdom. Because the European System of Central Banks (ESCB) will use repurchase transactions as its main vehicle for injecting and withdrawing liquidity from EMU financial markets, it is widely expected that official euro repo markets will develop very rapidly in member countries, but this will depend in part on the regulatory treatment of private repurchase transactions in individual countries as well as the development of the EMU-wide interbank money market (see Chapter V).⁵

Bond Markets

During the period under review, nominal yields on long-term government securities have continued to remain low, and in some cases yields have declined to historical lows (Figure 4.4). For example, in Europe, bond yields touched post-World War II lows, and in Japan, Japanese Government Bond (JGB) yields reached the lowest level offered on any form of investment in Japan since the sixteenth century, according to one source.⁶ Similarly, in the United States, interest rates on the benchmark 30-year U.S. treasury bond fell below 6 percent in January and touched all-time (since its first issuance in 1977) lows in January and June 1998.

U.S. Fixed-Income Markets

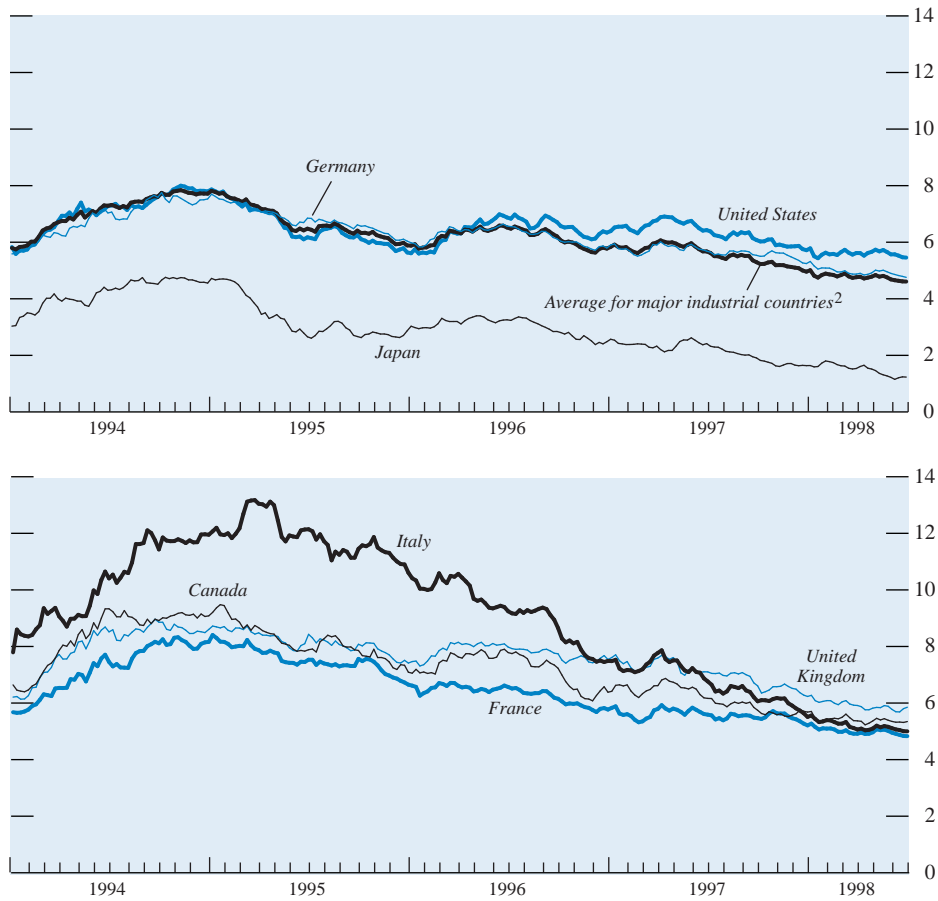
In the United States, the yield on 10-year treasury bonds has fallen from about 6.5 percent to about 5.5

⁴Some have suggested that a “liquidity trap” has arisen in the Japanese financial system. The evidence is mixed: see Weberpals (1997). Also see Krugman (1998).

⁵Timely, comprehensive, and fully comparable cross-country statistics on repo markets are not available. Figures that are readily available indicate that at end-1996, total Bank of France repos amounted to about \$20 billion; in August 1997, repo liabilities of German banks amounted to about \$40 billion; and in November 1997, gilt repos outstanding in the U.K. market came to about \$120 billion. By comparison, outstanding repos by U.S. government securities dealers exceeded \$1 trillion at end-1997.

⁶“Japanese Government Bond Yields Nudge 1.5%,” *Financial Times* (March 18, 1998), p. 20.

Figure 4.4. Major Industrial Countries: Long-Term Interest Rates¹
(In percent a year)



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

²1987 purchasing power parity GDP weights.

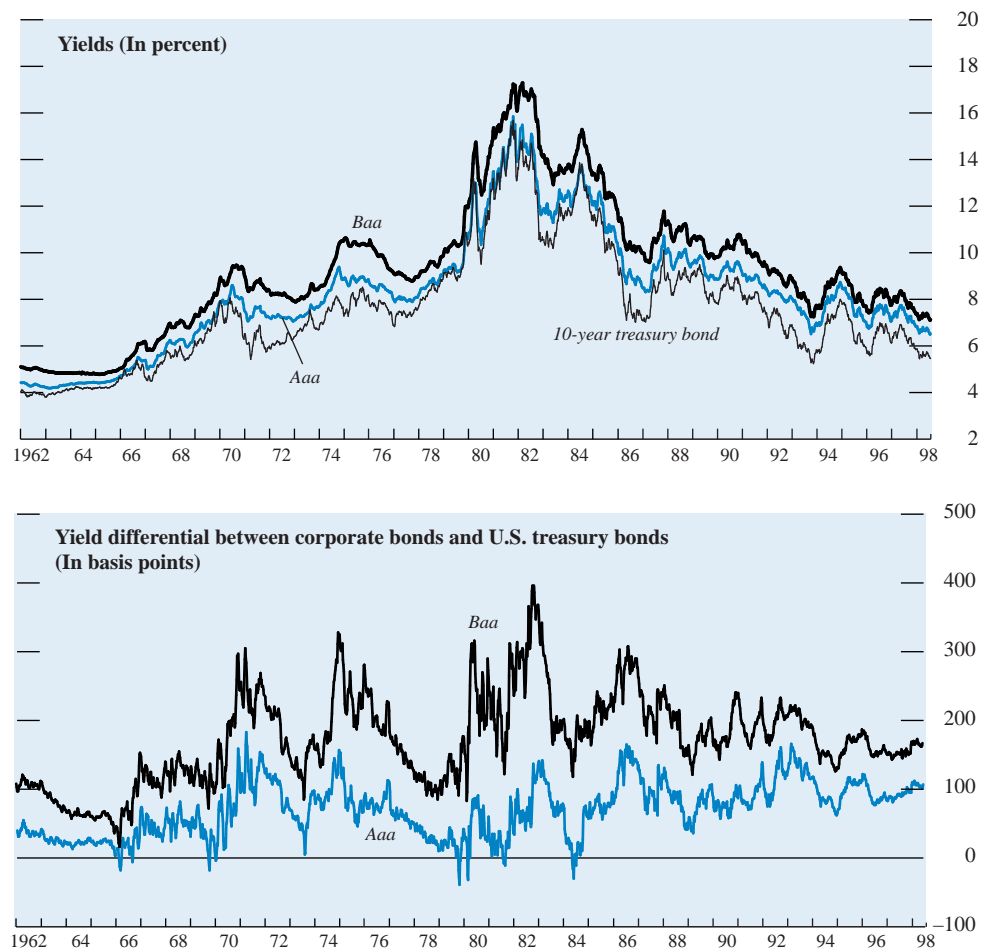
percent over the 12 months ended June 1998. This decline is related to a number of developments that have unfolded over the last few years: declining inflation and inflationary expectations; shrinking net issuance; a growing market consensus that there is little chance of a tightening of monetary policy; a flight to quality toward U.S. treasury securities following the turbulence in Asia; and the easing of market concerns that Japanese financial institutions would sell substantial amounts of U.S. treasury securities. The combination of somewhat lower short-term rates and much lower long-term rates on U.S. treasury securities has resulted in a substantial flattening in the U.S. benchmark yield curve to an historically low level.

Against the background of generally low and declining inflation, ex post real long-term treasury yields (based on past or current inflation) are broadly un-

changed from 10 years ago, at about their 10-year average. Because short rates have fallen by far less than long rates, ex post real short-term yields are toward the upper end of the 10-year range. Ex ante real rates based on expected (rather than actual) inflation may be somewhat different, depending on whether inflation is expected to decline or increase from present levels.

Since mid-1997, yields on AAA- and BAA-rated bonds of U.S. corporates have declined, along with the general decline in yields on U.S. government bonds (Figure 4.5). This has coincided with a boom in issuance in the U.S. corporate sector and in asset securitization. At end-1997, U.S. private-sector debt securities outstanding (domestic and international) amounted to just over \$5.6 trillion, the bulk of which (\$5.1 trillion) was accounted for by domestic issues (Table 4.1).

Figure 4.5. United States: Yields on Corporate and Treasury Bonds, January 5, 1962–June 26, 1998¹



Source: Board of Governors of the Federal Reserve System.

¹The ratings of corporate bonds are as shown in the panels. Yields on 10-year treasury bonds of constant maturities are used for the U.S. treasury bond.

European Credit Markets

Long-term treasury yields reached all-time lows during the period under review in several major European countries. Relatively sluggish growth of domestic demand in some major European economies probably contributed to this result. Also, intra-European spreads against German bonds continued to decline, as expectations firmed of broad participation in the start of EMU. Counterbalancing this was the coordinated move in early October 1977 by six ERM central banks, led by the Bundesbank, to increase official interest rates by 20–30 basis points. In 1998, interest rate differentials within EMU seem to have stabilized around a nonzero mean, perhaps reflecting residual

uncertainty about interest rate differentials (both intra- and extra-EMU), and the somewhat longer-term prospects for the relative importance of country credit risk.

National private debt markets within Europe have remained small compared with the U.S. market. Taken as a whole, the EU private market is closer in size to the U.S. market, with about \$4 trillion in private debt securities outstanding in 1996. Traditionally, European firms have tended to borrow from banks, and investors in corporate securities have had to focus on currency as well as credit risk when investing in European companies. The introduction of the euro in 1999 has already changed the incentives for investing in and issuing corporate debt securities and the

Table 4.1. Major Industrial Countries: Outstanding Amounts of Private Sector Domestic Debt Securities¹*(In billions of U.S. dollars)*

	1993	1994	1995	1996	1997
United States	3,419.0	3,660.7	4,086.4	4,547.8	5,077.5
Japan	1,325.6	1,497.3	1,529.7	1,468.5	1,316.9
Germany	738.1	863.8	1,027.0	1,023.4	952.5
France	541.2	572.4	605.3	552.2	465.8
Italy	300.0	325.4	356.5	411.6	348.3
United Kingdom	134.2	170.2	187.3	261.0	302.4
Total	6,503.8	7,135.7	7,842.8	8,327.5	8,538.4

Source: Bank for International Settlements.

¹Debt securities issued in domestic currency by residents of the country indicated. Includes short-term paper (e.g., commercial paper).

prospects for the broadening and deepening of European corporate bond markets appear to be improving. In addition, rules that require institutional investors to partly match the currency risks in liabilities and assets will likely be less binding after the common currency is introduced, which along with a shift toward funded pensions would go some way toward encouraging institutional investment and an environment favorable to marketed private risks.

Already, investor appetite for euro-denominated debt appears keen. In the period ahead, liquidity of the euro government bond market could be further enhanced by harmonization of market conventions across countries. Working the other way would be the tax treatment of European bonds, which under a proposed European Commission tax on savings might dampen enthusiasm over the development of Europe-wide bond markets.

It is a reasonable expectation that the European junk bond market will develop fairly rapidly within EMU, in part because fund managers may be willing to assume greater corporate risk to replace the reduced European currency risk and in order to maintain yields. The loosening of rules that restrict portfolios of institutional investors from investing in sub-investment-grade securities would further contribute to the development of the European high-yield market.

Japanese Credit Markets

Japanese benchmark yields declined by about 100 basis points in the 12 months ended June 1998, when the yield on the benchmark Number 182 bond, maturing in 2005, ranged below 1.2 percent. Japanese benchmark yields have been held down for a number of reasons: the sluggish pace of economic activity; the accommodative stance of monetary policy, more generally the extremely liquid state of the Japanese financial system, and declining inflationary expectations; and a sense in the markets that among Japanese asset classes, JGBs are the “only game in town.” Some mar-

ket commentary has suggested that the lack of alternatives for investment funds has itself led to an appreciation in government bond prices, as it is believed that funds from, for example, the postal saving system have flooded the government bond market.

As recourse to bank loans has become more limited, corporate bond issuance in Japan has increased by 56 percent to a record, but still relatively low, level of \$70 billion in FY1997. The implementation of Big Bang reforms is likely to ease the access of corporate borrowers to nonbank finance in the period ahead. As part of these reforms, starting in FY1998, nonbank financial intermediaries are allowed to issue straight bonds and commercial paper, and in FY1999, all banks will be able to issue bonds (at present, banks may already issue commercial paper, and only long-term credit banks can issue bonds).

International Credit Markets

Syndicated Loans

In 1997, syndicated lending (announced credit facilities) rose to over \$1 trillion, outpacing net issuance of international debt securities by almost two to one. The rate of increase was slower than in 1996, however, and the pace of activity varied considerably during the year, dropping in the third quarter and recovering in the fourth (Table 4.2). In the first quarter of 1998, syndicated lending fell off sharply, including to industrial country borrowers.

Weighted-average spreads over LIBOR on syndicated loans for OECD borrowers rose over the second half of 1997, but remained below the recent peak attained in 1995, at around 75 basis points in the fourth quarter (Figure 4.6). Recent upward pressure on loan rates reportedly stemmed from the pressure on European banks to improve return on capital and from the retrenchment of Japanese banks (which are estimated to typically represent 10–15 percent of the syndicated loan market) in the wake of the Asian crisis. This trend

Table 4.2. Announced International Syndicated Credit Facilities by Nationality of Borrowers*(In billions of U.S. dollars)*

	1992	1993	1994	1995	1996	1997	1997				1998
							Q1	Q2	Q3	Q4	Q1
All countries	194.0	279.4	477.1	697.7	900.9	1,136.3	202.7	340.8	263.7	329.1	188.2
Industrial countries	159.6	242.6	422.0	608.4	796.1	971.6	173.6	297.6	220.3	280.1	177.9
Of which:											
United States	114.8	194.3	312.4	399.0	551.9	674.9	117.5	223.5	152.4	181.4	127.0
Japan	0.8	0.6	2.5	4.7	6.3	5.9	0.6	1.5	2.5	1.4	0.8
Germany	0.3	0.9	1.2	13.5	10.1	14.1	1.5	2.5	3.1	7.0	0.5
France	1.4	5.2	6.8	18.1	21.3	38.5	3.6	2.9	12.2	19.9	2.4
Italy	3.2	0.2	5.3	15.2	5.7	11.4	1.2	3.0	3.7	3.5	0.3
United Kingdom	18.3	12.9	28.4	56.2	76.7	103.1	29.0	26.5	19.9	27.7	25.3
Canada	4.4	7.3	15.0	22.6	25.4	43.3	7.7	10.3	9.2	16.0	4.2

Source: Bank for International Settlements.

appeared to intensify late in 1997, and further early in 1998, when Japanese banks were reported to be putting large quantities of loans up for sale, as much as \$5 billion in permanent sales in the first quarter in the London market alone. The rise in spreads also likely reflected the desire to hold more liquid claims in the environment of increased uncertainty.

The pickup in syndicated loan activity in the fourth quarter of 1997 mirrored a similar rise in gross international lending by BIS-reporting banks, indicating a sharp increase in interbank claims as net lending remained about the same. Japanese banks decreased cross-border lending to nonbanks to shore up their balance sheets, in anticipation of the enhanced standards that banks would have to meet at the end of the fiscal year on April 1, 1998, the erosion of capital caused by the weakness of the Nikkei, the higher cost of funding owing to the rise of the dollar against the

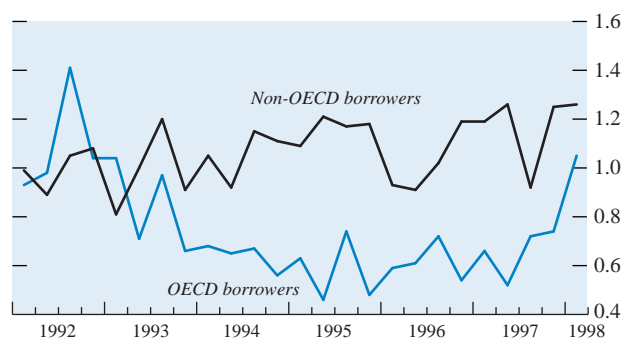
yen, the risks stemming from Japanese banks' positions in emerging Asia, and the general climate of uncertainty in the Japanese financial system. The increased cost of overseas funding also led Japanese banks to supply considerable funds from head offices to overseas affiliates. European banks expanded interbank lending in the fourth quarter of 1997, owing to restructuring in the run-up to EMU, and continued to gain market share at the expense of Japanese banks.

International Bonds

The international debt market, like other credit markets, was affected by the turbulence in Asia during 1997 (Table 4.3). The Asian crisis reportedly caused a virtual shut-down of the market for new issues from lower-rated entities in the fourth quarter, and widening spreads led to the delay or withdrawal of new issues for many issuers (in both emerging and mature markets) at the lower end of the credit curve. The international market for debt securities roared back to life in the first part of 1998, as net issuance nearly doubled in the first quarter and net and gross issuance reached new records.⁷

The U.S. dollar remained the primary currency of issuance in 1997 and the first quarter of 1998, accounting for over half of new issuance (Table 4.4).

Figure 4.6. Weighted Average Spreads for Announced Facilities in the International Syndicated Credit Market¹

(In percent)

Source: Bank for International Settlements.

¹Spreads over LIBOR on U.S. dollar credits.

⁷As noted in Chapter III, mature-market creditors are the other side of the sizable and at times volatile volumes of portfolio capital flows to emerging capital markets. The volume of these flows can be large relative to the size and absorptive capacity of the economies receiving them, but they are small compared with the markets, and in some cases the institutions, in which they originate. Although potentially disruptive for recipient countries, it may not be feasible, or desirable, to alter private microeconomic portfolio decisions, including bank lending decisions. Instead, improved transparency and disclosure about creditor positions in emerging markets, and greater attention to risk management—credit risk assessment and lending standards more generally—may serve the purpose of alerting market participants and officials when pressures might be accumulating in one market or another.

Table 4.3. Outstanding Amounts of International Debt Securities¹
(In billions of U.S. dollars)

	1993	1994	1995	1996	1997	1998 Q1
All countries	2,027.7	2,401.2	2,722.5	3,154.1	3,542.2	3,691.4
Industrial countries	1,643.1	1,943.1	2,217.8	2,541.1	2,832.0	2,947.4
Of which:						
United States	175.7	203.9	264.2	389.6	555.4	602.9
Japan	336.8	351.6	351.4	342.0	319.7	309.4
Germany	119.4	184.8	261.3	337.6	392.2	419.2
France	153.0	184.8	205.0	214.7	220.0	229.6
Italy	69.9	84.6	92.0	94.7	97.4	99.2
United Kingdom	186.5	211.4	224.6	272.0	307.0	327.2
Canada	146.7	163.9	174.8	180.4	184.8	190.1
Developing countries	120.6	158.9	182.0	263.1	344.0	351.2
Offshore centers ²	10.0	17.4	19.2	35.9	49.9	51.4

Source: Bank for International Settlements.

¹Debt securities other than those issued by residents in domestic currency; this includes non-home-currency debt issued by residents and all debt issued by nonresidents.

²The Bahamas, Bahrain, Bermuda, the Cayman Islands, Hong Kong SAR, the Netherlands Antilles, Singapore, and other offshore centers.

Dollar fixed-rate issuance was supported by widening swap spreads, which allowed issuers to offer good premiums over treasury rates while swapping into interbank floating rates. Issuance in the pound sterling and the deutsche mark were supported by the relatively high level of sterling interest rates and the *Pfandbrief* (mortgage-backed) market, respectively. Net issues in yen fell sharply, with issuance lower in both the euro-yen and Samurai markets, and turned negative in dollar terms in the fourth quarter of 1997 and the first quarter of 1998. By contrast, net issues in European currency units (ECUs) were boosted by is-

suance of "EMU-tributary bonds" designed for easy conversion into the euro, though outstanding ECU issues remained small (around 2 percent of international bonds and notes outstanding at the end of March 1998).

Securitization activity has been buoyant in the recent period, with international issuance of asset-backed securities reaching a new high in the fourth quarter of 1997, and especially strong activity reported in the collateralized bond obligation (CBO) and collateralized loan obligation (CLO) markets. Underlying these developments was an increased market

Table 4.4. Outstanding Amounts and Net Issues of International Debt Securities by Currency of Issue
(In billions of U.S. dollars)

Currency	Amounts Outstanding ¹					Net Issues							
	1993	1994	1995	1996	1997	1993	1994	1995	1996	1997	1997 Q3	1997 Q4	1998 Q1
U.S. dollar	836.4	910.1	983.7	1,233.1	1,569.3	31.5	73.4	74.2	262.8	336.5	110.9	59.0	104.5
Japanese yen	272.3	412.6	496.7	480.7	462.0	33.8	106.8	108.3	85.1	34.3	7.5	-1.2	-7.4
Deutsche mark	192.8	244.0	318.8	341.8	343.1	31.2	27.5	55.0	54.6	47.9	15.3	7.0	18.1
French franc	92.7	131.6	149.0	166.3	179.5	34.5	27.0	5.2	29.0	35.0	8.9	12.2	9.0
Italian lira	37.7	57.5	69.7	97.2	117.6	13.0	18.4	10.3	27.3	34.5	8.7	7.9	8.7
Pound sterling	154.8	178.2	186.7	236.1	282.0	31.7	14.5	10.0	30.9	51.5	11.9	6.8	20.5
Canadian dollar	81.7	83.5	83.7	77.0	67.9	20.5	6.7	-2.2	-6.4	-6.1	-1.4	-2.9	-3.8
Spanish peseta	10.6	10.7	13.2	17.8	20.4	3.5	-0.7	1.4	5.8	5.2	1.1	0.7	0.2
Netherlands guilder	44.9	65.9	84.5	93.4	94.4	7.9	14.8	13.5	17.6	14.1	2.9	4.1	10.0
Swedish krona	3.5	5.1	5.3	5.2	4.5	0.6	1.0	-0.3	0.1	-0.1	0.3	-0.2	1.3
Swiss franc	149.1	161.2	189.0	165.4	152.6	-2.3	-6.4	4.3	4.2	-1.0	1.3	-3.2	-0.1
Belgian franc	2.2	2.3	4.3	13.2	13.1	-0.4	-0.3	2.0	9.4	1.6	0.3	0.8	0.8
Other	159.1	179.0	217.9	226.9	235.8	-8.0	2.7	29.8	23.0	42.4	11.5	5.5	27.1
Total	2,037.8	2,441.7	2,802.5	3,154.1	3,542.2	197.5	285.4	311.5	543.4	595.8	179.2	96.5	188.9

Source: Bank for International Settlements, *International Banking and Financial Market Developments*, various issues.

¹The total amounts outstanding for 1993-95 do not correspond to those shown in Table 4.3 and Table A5.11 of Annex V because the revised numbers on currency composition are not published.

appetite for risk, market acceptance of broader classes of securities, and a desire by financial institutions to unload riskier classes of assets to boost capital and better manage their balance sheets. The last few years have also seen development of some infrastructure for secondary-market trading of corporate loan assets, including the creation of the Loan Syndication and Trading Association in the United States and the Loan Market Association in London, and the first ratings of loans by Standard and Poor's (S&P). More broadly, in the long run, it is expected that terms in syndicated loan and corporate bond markets will converge, particularly as secondary-market trading develops further and as EMU creates a broader and more liquid market for corporate bonds, but gaps between the markets remain in the interim.

Equity Markets

Outside Japan, 1997 was a strong year for the major equity markets, and some of that momentum was carried over to 1998, particularly in European markets (Figure 4.7). Contributing to the buoyancy of equity markets were expectations for an accommodative tilt to monetary policies, expectations that restructuring and cost restraint would maintain strength in earnings, and an emergent "equity culture," particularly in (but hardly confined to) the United States. The performance of these markets contrasted with that of the Japanese equity market, where a string of unfavorable events, and continued uncertainty about the economic outlook and the state of the financial system, contributed to a lackluster performance.

United States

For the U.S. equity market, 1997 was a year of superlatives, in spite of warnings of overvaluation and (late in the year) concerns about the impact of the Asian crisis (brought home most forcefully in October) (see Box 4.1). The Dow Jones Industrial Average (DJIA) registered a record third consecutive increase of over 20 percent, and the best 10-year performance on record. Over the five-year period 1993–97, the U.S. equity market also outperformed those of other Group of Seven countries in risk-adjusted (Sharpe ratio) local-currency terms.⁸ In 1998, the U.S. market initially defied expectations of lackluster performance, though the U.S. equity market was largely trendless in the second quarter. Indeed, the continued lofty market valuations have led to some concerns that the rise in stock prices may have unduly influenced

⁸Data from BZW Securities Limited. The Sharpe ratio is a measure of risk-adjusted return, and in this case is calculated as the equity return less the three-month Euro deposit rate, all divided by the standard deviation of equity returns.

economic activity, with the consequent rise in wealth boosting spending and in turn feeding a further rise in stock prices.

The recent rise in stock prices has also brought some record and near-record valuation indicators, including a century-record low in the dividend yield on the S&P 500, and the highest-ever price-earnings ratio on the S&P 500 (Figure 4.8). Other indicators have shown similar movements in valuations; the price-book ratio has continued to move upward, rising through 1997 and the first quarter of 1998, and the yield gap (the excess of the price-earnings ratio of the S&P 500 over the yield on the 30-year U.S. treasury bond) has continued to drift into negative territory.

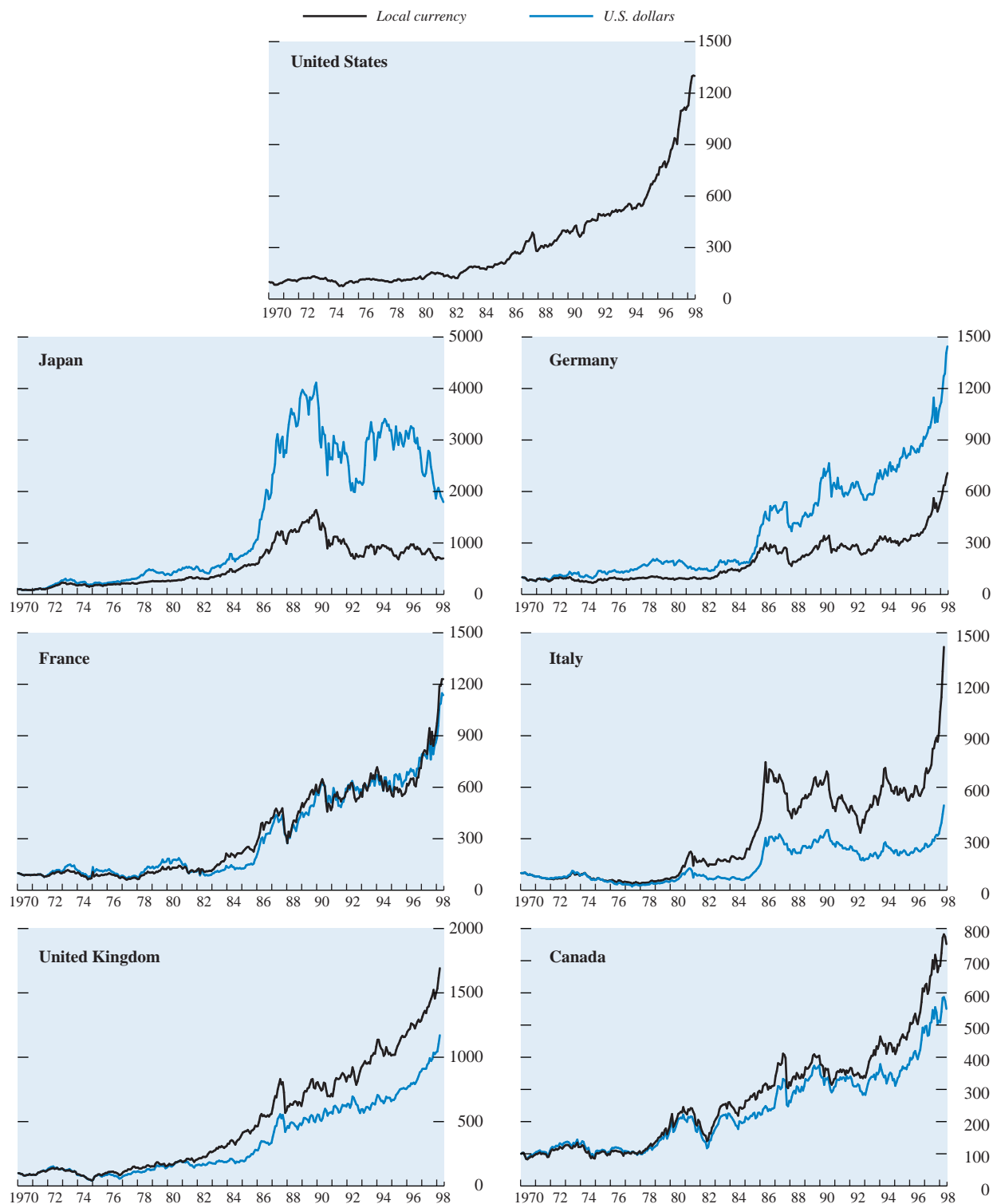
The dramatic run-up in U.S. stock prices of the past few years has coincided with large new cash flows into U.S. equity mutual funds, amounting to around \$230 billion in 1997, compared with \$128 billion in 1995.⁹ This development reflects a variety of factors: easier access to mutual funds; the trend toward funded pension systems; improved awareness among the baby boom generation about the possibly difficult path to retirement ahead; and (in the view of a number of market participants) an emerging "equity culture," in which retail investors are becoming more sophisticated and more knowledgeable about equity markets, and more aware of the relatively favorable long-run yields to be had in the equity market compared with those on traditional savings vehicles. Owing to these trends, at end-1997, assets of the U.S. mutual fund industry reached \$4.5 trillion including nonequity funds, rivaling those of U.S. banks (\$5.2 trillion), and exceeding those of private pension funds (\$3.6 trillion).¹⁰ In April 1998, U.S. mutual fund assets were over \$5 trillion, roughly equivalent to the GDP of Japan.

Europe

Performance of European equity markets was exceptional during 1997 and most of the first half of 1998, with many markets setting records in local currency terms, and some European markets outperforming the U.S. market even in dollar terms (based on the FT/S&P Actuaries World Indices). Contributing to this rise were general optimism about EMU, generally lower interest rates and weaker currencies vis-à-vis the dollar (on the continent), and the belief that restructuring in Europe would provide support to earnings in the longer term. However, as in the U.S. markets, valuations have approached extremes in some

⁹Some flows into mutual funds result from portfolio shifts out of direct holdings, and thus may overstate new savings flows into equities.

¹⁰In addition to new cash flows into mutual funds, price appreciation and dividend reinvestment contribute to growth in mutual funds.

Figure 4.7. Major Industrial Countries: Stock Market Indices¹*(Indices, January 1970 = 100)*Sources: Bloomberg Financial Markets L.P.; International Monetary Fund, *International Financial Statistics* database; and The WEFA Group.¹Monthly averages of daily observations.

Box 4.1. The October 1997 Turbulence in International Equity Markets

In October 1997, almost exactly ten years after the 1987 stock market crash, global equity markets suffered several days of turbulence (Figure 4.8). The events of October 1997 are notable because the turbulence appears to have begun in Hong Kong SAR, it triggered circuit breakers, and individual investors remained calm.

Turbulence began on Thursday, October 23, in Hong Kong SAR, after a sharp rise in overnight interest rates to defend the currency brought the stock market down by 6 percent. On Thursday and Friday, other major and emerging markets subsequently declined. On Monday, October 27, global turbulence began in earnest: the Hong Kong SAR market fell by about 6 percent, and Asian and European markets declined before the U.S. market opened. The DJIA subsequently dropped more than 7 percent, twice triggering circuit breakers, and lost a record 554 points before an early close. The stage was apparently set for further losses, as the prices of U.S. stock index futures fell by the maximum allowed in the overnight market.

The drop in the U.S. stock market set off a global chain reaction on Tuesday, October 28. Stock markets in Asia and Europe were down sharply on opening. The DJIA subsequently lost nearly 3 percent of its value in the first 45 minutes of trading, and equity markets in Latin America plunged as well. The global decline continued until about 10:15 a.m. New York time, when IBM announced a \$3.5 billion repurchase program, which was followed by a profound turnaround in market sentiment. U.S. markets rallied for the rest of the day, gaining back nearly 5 percent from the open on record trading volume. On Wednesday, October 29, other global markets also recovered.

The turbulence was reminiscent of the stock market crash of October 1987. Following that crash, U.S. securities exchanges adopted coordinated trading-halt and price-limit rules (circuit breakers), designed to grant investors the time to make educated trading decisions and perhaps stabilize the market during market disturbances. The circuit breakers were triggered for the first and only time on October 27, 1997. Afterward, some market participants and regulators shared the view that the abrupt

closing prevented the discovery of market-determined closing prices. The resulting ad hoc valuations caused a flurry of margin calls, which risked creating liquidity problems and prolonging market disorder.

Subsequently, U.S. stock and financial derivatives exchanges jointly adopted a plan to make quarterly adjustments of point values for circuit breakers based on percentage changes in the DJIA. Under the revised rules, declines of 10 percent and 20 percent in the DJIA would lead to either a temporary shutdown or a closure of markets until the end of the day, depending on the time of day, and a drop of 30 percent at any time would lead to a closure of markets for the day. The U.S. Securities and Exchange Commission (SEC) stated that the adopted revisions were designed to be triggered only during events of "historic proportions," thus labeling the turbulence of October 1997 as relatively insignificant.

The infrastructure put in place after the crash of 1987 allowed U.S. equity markets to function more smoothly in 1997 than in 1987. No credit or technological problems were reported by major exchanges in October 1997. This contrasted with October 19, 1987, when there were major delays in the clearing process, and the Federal Reserve had to inject liquidity to assure a continuing supply of credit to clearinghouse members and to prevent defaults on margin collections, as a lack of processing capacity and regulatory disruptions were exacerbated by a rush of sell orders.

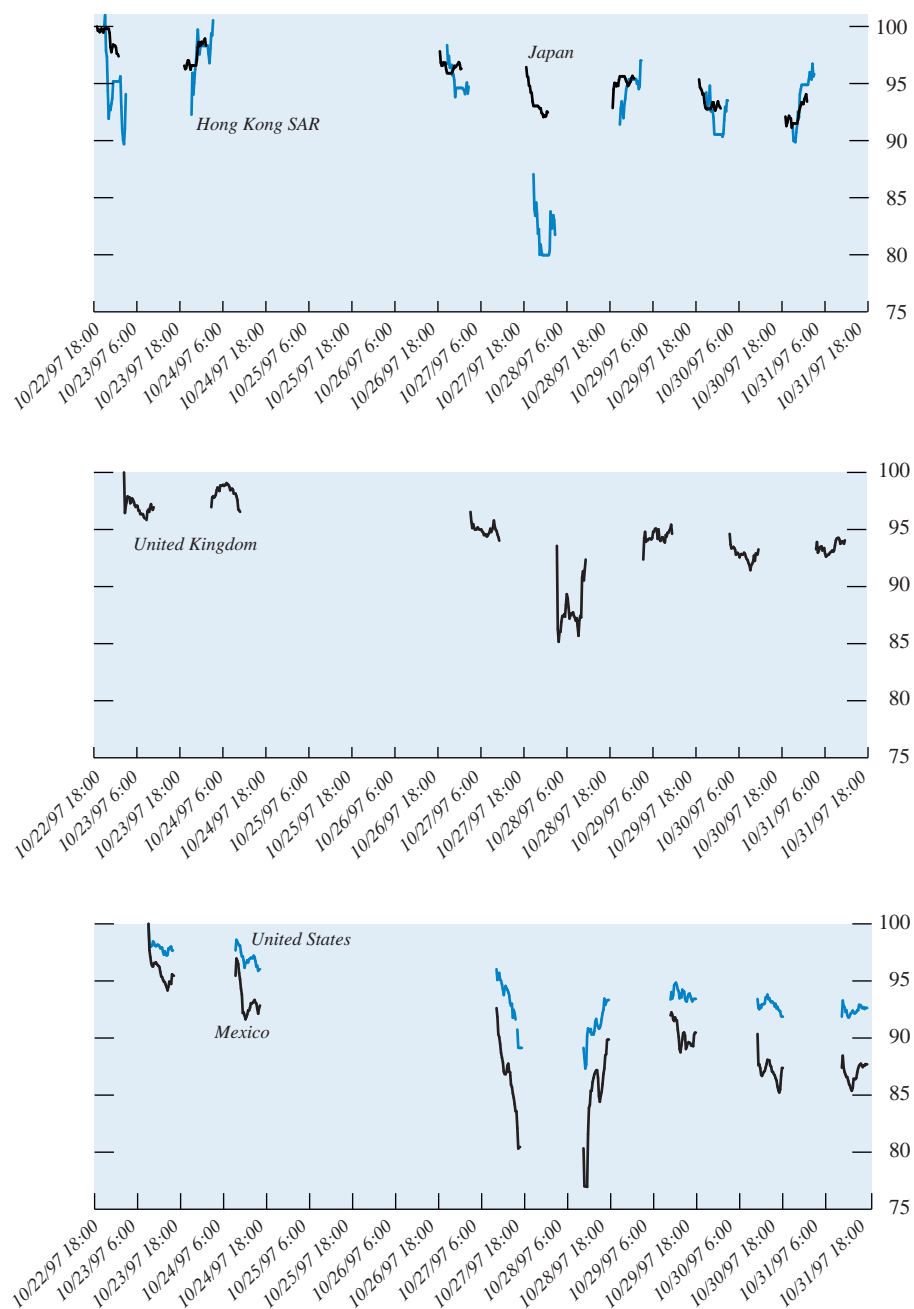
Despite the rising share of U.S. stocks held by individual investors, some evidence suggests that they did not sell on October 27 and buy on October 28, 1997. A random telephone survey of individual U.S. investors conducted by *Pensions & Investments* revealed that between October 27 and 29, some 78 percent of investors neither bought nor sold. A study of positions in nine primary retail brokers reported in the *Wall Street Journal* found that on October 27, individual investors were small net buyers, accounting for 16 percent of the buying and 9 percent of the selling. On the following day, individual investors accounted for 22 percent of the buying and 6 percent of the selling.

countries; indeed, dividend yields ranged near long-term lows in most of the Group of Seven countries (see Figure 4.9).

There have also been important structural developments in European equity markets during the recent period. High-profile equity privatizations in Germany, France, and Italy have boosted market capitalizations. In the run-up to EMU, market participants have begun to view the major European stock markets as a whole, with the apparent beginnings of a shift from country-level to industry-level (and Europe-wide) analysis. There is also a general belief that corporate control is working better than in the past, with management more sensitive to shareholders' interests,

as indicated, inter alia, by the increasing tendency to return excess cash to shareholders through buybacks. As of March 1998, legislation related to share repurchases was under consideration in Germany, the Netherlands, Sweden, and Switzerland, and in May 1998, rules to ease repurchases were proposed for the United Kingdom. Finally, there have been some structural changes in the exchanges themselves, most notably the development of the small-capitalization market (EASDAQ), the adoption of a new order-driven trading system (SETS) in the U.K. market, and a study by the New York Stock Exchange (NYSE) of a 24-hour global market for common shares of European companies. Each of these can be viewed as part

Figure 4.8. International Equity Price Movements, 6 p.m. October 22–5 p.m. October 31 (EST), 1997



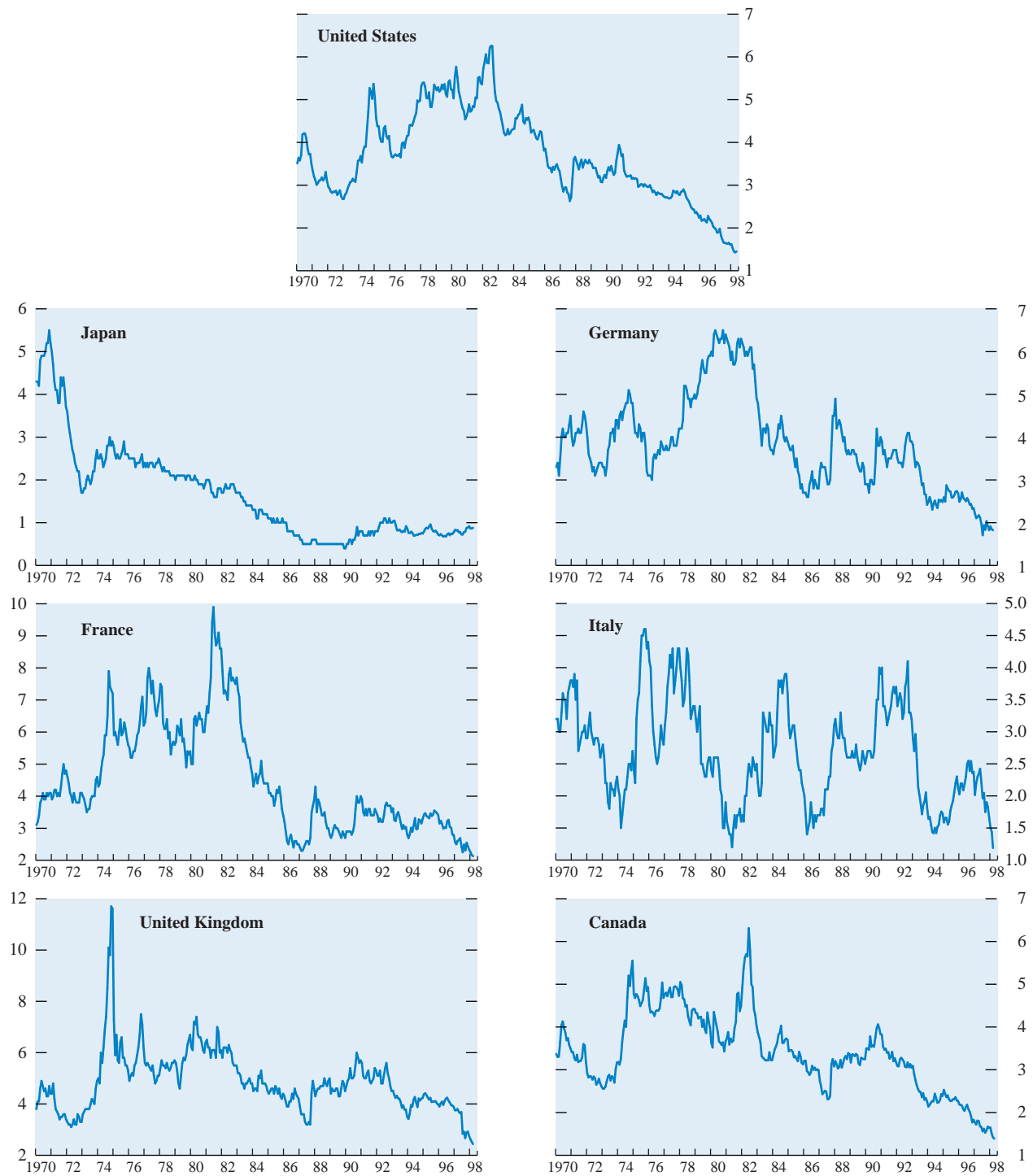
Source: Bloomberg Financial Markets L.P.

Note: The first observation for each market is normalized to equal 100.

of a larger trend toward the development of the equity culture in European capital markets, as also reflected in increased optimism about European equity markets among major asset managers, and plans by the EU to

introduce policies to promote risk capital markets. At the same time, there has been a shift in international equity portfolios toward European markets. According to a survey of institutional investors taken in

Figure 4.9. Major Industrial Countries: Dividend Yields
(In percent)



Sources: Bloomberg Financial Markets L.P.; and Haver Analytics.

1998, the share of European equities held in a sample of international equity portfolios (excluding U.S. shares) stood at 47 percent. This share is higher than the share of European market capitalization (40 percent) in total non-U.S. global market capitalization.¹¹

Japan

In contrast to other major markets, the Japanese stock market languished in 1997–98. The Nikkei reached two-year lows in November and lost about 25 percent of its end-1996 value by the end of 1997, as concerns about the financial sector grew in late November 1997 following the failure of several financial institutions, including the fourth largest brokerage firm and a major city bank. The market stabilized after the turn of the year, as hopes emerged for government measures to address weaknesses in the financial system and as the authorities encouraged the use of postal funds to support the market, but at mid-1998 was little changed from end-1997. The weakness of the Japanese stock market has been a source of concern because under past accounting rules, banks' capital has depended on the value of their stock portfolios relative to historical cost. These concerns have been compounded by the generally thin capitalization of Japanese banks, though recent changes in accounting rules allow banks to value equity holdings at book value rather than the lower of cost or market value. Concerns about possible unwinding of cross-holdings—estimated to account for about 45 percent of total equity as of January 1997—have also weighed on the market.¹²

In spite of these difficulties, there are emergent factors that would support the long-term role of the stock market in the Japanese economy. The trend away from “lifetime employment” brings with it a more favorable environment for defined-contribution and portable pension plans. In this context, the Liberal Democratic Party has been considering the introduction of pension plans along the lines of U.S. 401(k) plans. The Tokyo market has also begun to introduce computerized trading and take other measures to promote the market. The new liberalized regime will permit Japanese banks to sell mutual funds for the first time. Furthermore, it is expected that sales of overseas mutual funds will expand in Japan after the Big Bang. In October 1997, the Corporate Governance Forum of Japan released an interim report on corporate governance principles, spelling out the perceived problems with corporate governance in Japan and making a number of specific recommendations for change.¹³ Corpora-

tions have also reportedly increased their interest in buybacks, and rules that restrict buybacks have recently been liberalized, though actual activity has been modest.

In addition, the competitive pressures on equity market players will likely increase in the period ahead. The Big Bang has (starting April 1) liberalized fixed brokerage commissions on trades over ¥50 million, a move that is expected to heighten competitive pressures on the Japanese brokerage industry. Such competitive pressures are already in evidence, as foreign brokers already commanded about 30 percent market share on the Tokyo Stock Exchange in 1997, and as deregulation reportedly figured in the dismal results of Japanese brokers announced in May. According to one estimate, declines in commission rates may decrease aggregate commissions by one-half. Japanese exchanges also face increased competition for listings; it is rumored that the NYSE is planning to open its first office in Asia in 1998, potentially in Japan, with a view to persuading Asian companies to list on the NYSE.

Derivatives Markets

One of the more prominent features of global financial markets in the last ten years has been the rise in the importance of derivatives markets, both in size (contracts traded and notional principal) and in breadth (in terms of the types of risks traded) (Tables 4.5–4.9).¹⁴ According to the most recent triennial survey of global markets conducted by the BIS, the notional value of outstanding OTC foreign exchange, interest rate, equity, and commodity derivative contracts totaled \$48 trillion at end-March 1995. Interest rate and currency derivatives dominated the market, accounting for about \$29 trillion and \$18 trillion, respectively, or about 98 percent of the total. In addition, survey participants indicated that they were involved in another \$17 trillion in transactions in exchange-traded derivatives, bringing the total to about \$64 trillion in derivative contracts. This is roughly equivalent to the aggregate market value of all bonds, equity, and bank assets in Japan, North America, and the 15 EU countries at end-1995 (\$68 trillion). More recent (but less comprehensive) data show that futures and options turnover on exchanges totaled almost \$360 trillion in 1997.

¹¹The 40 percent European share of the world's equity market capitalization (excluding U.S. equity markets) is derived from an industry benchmark regularly published by Morgan Stanley Capital International.

¹²Goldman Sachs Investment Research (1998), p. 193.

¹³Corporate Governance Forum of Japan (1997).

¹⁴The notional principle value of a derivative contract or market is typically used to indicate the size of a contract or market, and is used in this section except where noted. The actual credit exposure, or money at risk, associated with the contract is generally much smaller. For example, one measure of the credit exposure for interest rate swaps, the largest category of over-the-counter (OTC) derivatives, is positive “replacement value,” which is estimated to be between 2 percent and 4 percent of the notional value of a contract.

Table 4.5. Currency Composition of Notional Principal Value of Outstanding Interest Rate and Currency Swaps*(In billions of U.S. dollars)*

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Interest rate swaps										
All counterparties	682.9	1,010.2	1,502.6	2,311.5	3,065.1	3,850.8	6,177.3	8,815.6	12,810.7	19,170.9
U.S. dollar	541.5	728.2	993.7	1,272.7	1,506.0	1,760.2	2,457.0	3,230.1	4,371.7	5,827.5
Japanese yen	40.5	78.5	128.0	231.9	478.9	706.0	1,247.4	1,987.4	2,895.9	4,441.8
Deutsche mark	31.6	56.5	84.6	193.4	263.4	344.4	629.7	911.7	1,438.9	2,486.2
Pound sterling	29.7	52.3	100.4	242.1	253.5	294.8	437.1	674.0	854.0	1,367.1
Other	39.5	94.8	195.8	371.5	563.3	745.4	1,406.1	2,012.4	3,250.2	5,048.3
Interbank (ISDA members)	206.6	341.3	547.1	909.5	1,342.3	1,880.8	2,967.9	4,533.9	7,100.6	10,250.7
U.S. dollar	161.6	243.9	371.1	492.8	675.0	853.9	1,008.4	1,459.8	2,287.3	2,961.9
Japanese yen	19.5	43.0	61.1	126.1	264.9	441.3	820.8	1,344.8	1,928.5	2,741.8
Deutsche mark	7.9	17.2	32.6	78.4	111.2	175.6	356.1	514.5	831.0	1,409.5
Pound sterling	10.4	17.6	40.0	100.1	106.3	137.2	215.2	315.4	477.7	711.0
Other	7.1	19.6	42.2	112.1	184.9	272.8	567.4	899.4	1,576.1	2,426.5
End-user and brokered	476.2	668.9	955.5	1,402.0	1,722.8	1,970.1	3,209.4	4,281.7	5,710.1	8,920.2
U.S. dollar	379.9	484.3	622.6	779.9	831.0	906.3	1,448.6	1,770.3	2,084.3	2,865.6
Japanese yen	21.0	35.5	66.9	105.8	214.0	264.7	426.7	642.5	967.4	1,700.0
Deutsche mark	23.7	39.3	52.0	115.0	152.2	168.8	273.7	397.1	607.8	1,076.7
Pound sterling	19.3	34.7	60.4	142.0	147.3	157.6	222.0	358.7	376.2	656.1
Other	32.4	75.2	153.6	259.4	378.3	472.7	838.4	1,113.1	1,674.4	2,621.8
Currency swaps¹										
All counterparties	182.8	319.6	449.1	577.5	807.2	860.4	899.6	914.8	1,197.4	1,559.6
U.S. dollar	81.3	134.7	177.1	214.2	292.2	309.0	320.1	321.6	418.9	559.3
Japanese yen	29.9	65.5	100.6	122.4	180.1	154.3	158.8	170.0	200.0	269.8
Deutsche mark	10.7	17.0	26.9	36.2	47.6	53.4	69.7	77.0	119.0	121.5
Pound sterling	5.3	8.9	16.7	24.5	37.4	40.1	44.2	43.0	45.8	68.6
Other	55.7	93.5	127.8	180.3	250.0	303.7	306.9	303.4	413.8	540.4
Interbank (ISDA members)	35.5	82.6	115.1	155.1	224.9	238.9	218.5	211.3	310.0	425.0
U.S. dollar	16.7	34.1	48.2	59.7	86.8	90.9	82.3	80.4	114.3	152.7
Japanese yen	7.2	18.6	28.3	37.4	60.9	53.9	53.3	49.3	58.0	75.6
Deutsche mark	1.6	3.0	5.4	7.6	9.4	12.6	12.9	12.0	21.1	25.3
Pound sterling	1.1	1.6	4.3	6.2	8.4	10.4	7.1	6.5	6.9	11.5
Other	9.0	25.4	28.8	44.1	59.5	71.1	63.0	63.1	109.8	159.9
End-user and brokered	147.3	237.0	334.1	422.5	582.3	621.6	681.1	703.6	887.5	1,134.7
U.S. dollar	64.6	100.7	128.9	154.5	205.3	218.2	237.7	241.2	304.7	406.7
Japanese yen	22.7	47.0	72.2	85.0	119.2	100.4	105.6	120.6	142.1	194.3
Deutsche mark	9.1	14.0	21.5	28.5	38.2	40.8	56.9	65.0	98.0	96.3
Pound sterling	4.2	7.3	12.4	18.3	29.1	29.7	37.0	36.6	38.9	57.1
Other	46.7	68.1	99.0	136.2	190.6	232.6	244.0	240.4	303.9	380.3

Sources: Bank for International Settlements, *International Banking and Financial Market Developments*, various issues; and International Swaps and Derivatives Association, Inc. (ISDA).

¹Adjusted for double counting because each currency swap involves two currencies.

One notable trend is the growing importance of OTC markets, owing to their flexible nature, their adoption of the valuable features of exchange markets, their advantage in creating opportunities to trade large new risks, and their regulatory advantages.¹⁵ The brisk growth in OTC activity has also given rise to some regulatory concerns in the United States. Recent developments have also blurred the distinction between OTC and exchange markets.¹⁶ These include the standardization of products and improved management of

counterparty risks in OTC markets; the introduction by exchanges of facilities to handle collateral for OTC transactions; the development of substitutes for exchange facilities by providers of electronic information; and, finally, inroads made by securities clearing houses into the collateral management and clearing businesses.

Among developments in regional derivatives markets, those occurring in Europe are the most notable. Indeed, two major European exchanges—the Deutsche Terminbörse (DTB) (Frankfurt) and the London International Financial Futures Exchange (LIFFE)—managed growth in volume of contracts of 45 percent and 25 percent, respectively, compared

¹⁵See International Monetary Fund (1997), pp. 123–25.

¹⁶See Bank for International Settlements (1998), p. 25.

Table 4.6. Markets for Selected Derivative Financial Instruments: Notional Principal Amounts Outstanding
(In billions of U.S. dollars)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Interest rate futures	370.0	487.7	895.4	1,200.8	1,454.5	2,156.7	2,913.0	4,958.7	5,777.6	5,863.4	5,931.2	7,491.4
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
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
Three-month Euroyen	0.0	0.0	0.0	109.5	243.5	254.5	431.8	1,080.1	1,467.4	1,400.7	1,462.2	1,629.9
Three-month Euro-deutsche mark	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
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
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
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
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
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
German government bond	0.0	0.0	1.4	4.2	13.7	22.5	34.3	45.9	49.1	74.8	94.2	77.8
Interest rate options ¹	146.5	122.6	279.2	387.9	599.5	1,072.6	1,385.4	2,362.5	2,623.5	2,741.8	3,277.8	3,639.8
Currency futures	10.2	14.6	12.1	16.0	17.0	18.3	26.5	34.7	40.1	38.3	50.3	51.9
Currency options ¹	39.2	59.5	48.0	50.2	56.5	62.9	71.1	75.6	55.6	43.5	46.5	33.2
Stock market index futures	14.5	17.8	27.1	41.3	69.1	76.0	79.8	110.0	127.7	172.4	195.9	216.6
Stock market index options ¹	37.8	27.7	42.9	70.7	93.7	132.8	158.6	229.7	238.4	329.3	378.0	776.5
Total	618.3	729.9	1,304.8	1,767.1	2,290.7	3,520.1	4,634.5	7,771.2	8,862.9	9,188.6	9,879.6	12,207.3
North America	518.1	578.1	951.7	1,155.8	1,268.5	2,151.8	2,694.7	4,358.6	4,819.5	4,849.6	4,837.4	6,326.5
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	2,828.6	3,587.4
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	2,235.0
Other	0.0	0.0	0.0	0.1	0.2	0.5	1.9	28.7	39.9	107.0	59.6	58.5

Source: Bank for International Settlements.

¹Calls and puts.

Table 4.7. Notional Value of Outstanding Interest Rate and Currency Swaps of ISDA Members
(In billions of U.S. dollars)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Interest rate swaps										
All counterparties	682.9	1,010.2	1,502.6	2,311.5	3,065.1	3,850.8	6,177.3	8,815.6	12,810.7	19,170.9
Interbank (ISDA member)	206.6	341.3	547.1	909.5	1,342.3	1,880.8	2,967.9	4,533.9	7,100.6	10,250.7
Other (end-user and brokered)	476.2	668.9	955.5	1,402.0	1,722.8	1,970.1	3,209.4	4,281.7	5,710.1	8,920.2
End-user	476.2	668.9	955.5	1,402.0	1,722.8	1,970.1	3,209.4	4,281.7	5,710.1	8,920.2
Financial institutions	300.0	421.3	579.2	817.1	985.7	1,061.1	1,715.7	2,144.4	3,435.0	6,274.8
Governments ¹	47.6	63.2	76.2	136.9	165.5	242.8	327.1	307.6	500.9	552.4
Corporations ²	128.6	168.9	295.2	447.9	571.7	666.2	1,166.6	1,829.8	1,774.2	2,093.0
Unallocated	0.0	15.5	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brokered	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Currency swaps										
All counterparties	365.6	639.1	898.2	1,155.1	1,614.3	1,720.7	1,799.2	1,829.7	2,394.8	3,119.3
Adjusted for reporting of both sides	182.8	319.6	449.1	577.5	807.2	860.4	899.6	914.8	1,197.4	1,559.6
Interbank (ISDA member)	71.0	165.2	230.1	310.1	449.8	477.7	437.0	422.5	619.9	850.0
Other (end-user and brokered)	294.6	473.9	668.1	844.9	1,164.6	1,243.1	1,362.2	1,407.2	1,774.9	2,269.3
End-user ³	147.3	237.0	334.1	422.5	582.3	621.5	681.1	703.6	887.5	1,134.6
Financial institutions	61.9	102.7	141.7	148.2	246.7	228.7	221.9	227.1	378.5	452.4
Governments ¹	33.9	54.0	65.6	83.2	96.9	110.6	135.8	122.1	190.2	245.9
Corporations ²	51.6	76.5	116.5	191.1	238.7	282.2	323.4	354.4	318.7	436.3
Unallocated	0.0	3.8	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brokered	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest rate options⁴	0.0	327.3	537.3	561.3	577.2	634.5	1,397.6	1,572.8	3,704.5	4,723.0
Total (interest rate and currency swaps for all counterparties plus interest rate options)	865.6	1,657.1	2,489.0	3,450.3	4,449.5	5,345.7	8,474.5	11,303.2	17,712.6	25,453.5

Sources: Bank for International Settlements, *International Banking and Financial Market Developments*, various issues; and International Swaps and Derivatives Association, Inc. (ISDA).

¹Including international institutions.

²Including others.

³Adjusted for double counting because each currency swap involves two currencies.

⁴Include caps, collars, floors, and swaptions.

with growth between 8 percent and 13 percent for the major U.S. exchanges.¹⁷ This momentum continued in 1998, as in the first quarter of 1998, volume on DTB and LIFFE reached record levels.¹⁸ The recent performance of European derivatives markets comes against a background of important changes: a variety of new euro-denominated products; initiatives among continental exchanges to band together and challenge both U.S. and U.K. exchanges (most notably the Eurex initiative); the struggle for market share among the major European exchanges in the run-up to EMU; and more general issues of how the introduction of the euro will affect derivatives markets. One such issue is how derivatives on the currencies of countries that are participating in the present stage of EMU will be redenominated. In May 1998, the International Swaps and Derivatives Association (ISDA) published a protocol that provides a framework for modification of existing contracts entered into under its Master Agreement.

Another issue is how the elimination of cross-currency risk under EMU would affect the overall currency derivatives market. Some have suggested that the market for European interest-rate products would grow to partly fill the gap left by the disappearance of cross-rate products.

Risks to Global Financial Markets

Looking ahead, important risks to global financial markets might arise from developments in economic fundamentals beyond financial markets themselves, from the dynamics of behavior within these markets and their potential structural weaknesses, and from the interactions of these risks across the interconnected array of markets that constitutes the global financial system.

With respect to fundamentals, the most important immediate risks arise from the persistent weakness of the Japanese economy and the unresolved fragilities of the Japanese financial system (discussed in greater detail in Chapter V). Unless and until these problems

¹⁷"DTB Joins the Super League," *Risk* (February 1998), p. 14.

¹⁸"Spoils of War," *Risk* (May 1998), p. 17.

Table 4.8. New Interest Rate and Currency Swaps*(In billions of U.S. dollars)*

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Interest rate swaps										
All counterparties	387.8	568.1	833.6	1,264.3	1,621.8	2,822.6	4,104.7	6,240.9	8,698.8	13,678.2
Interbank (ISDA member)	125.9	193.1	318.0	484.5	761.7	1,336.4	2,003.9	3,199.5	4,989.8	7,185.8
Other (end-user and brokered)	261.9	375.0	515.5	779.7	860.0	1,486.2	2,100.8	3,041.4	3,709.0	6,492.4
End-user	257.0	371.4	503.4	705.3	844.7	1,436.7	2,000.6	2,962.4	3,709.0	6,492.4
Financial institutions	168.7	238.1	317.9	420.1	492.4	853.9	1,115.7	1,632.5	2,292.9	4,754.4
Governments ¹	21.7	32.9	39.6	74.7	79.0	148.9	198.6	178.8	232.4	261.2
Corporations ²	62.6	98.2	139.5	210.6	273.3	434.0	678.0	1,150.9	1,183.7	1,476.8
Unallocated	4.1	2.3	6.5	0.0	0.0	0.0	8.3	0.1	0.0	0.0
Brokered	4.9	3.5	12.1	74.4	15.3	49.5	100.2	79.0	0.0	0.0
Currency swaps										
All counterparties	172.8	248.5	356.3	425.5	656.8	603.7	590.4	758.6	910.2	1,518.1
Adjusted for reporting of both sides	86.3	124.2	178.2	212.7	328.4	301.9	295.2	379.3	455.1	759.1
Interbank (ISDA member)	35.8	58.7	101.3	122.6	208.0	132.4	110.9	162.3	307.6	475.7
Other (end-user and brokered)	136.9	189.8	255.0	302.9	448.8	471.3	479.5	596.3	602.6	1,042.5
End-user ³	67.8	93.9	127.1	150.7	219.1	234.7	239.0	296.7	301.3	521.2
Financial institutions	31.9	43.5	52.2	51.4	98.6	78.9	77.2	107.6	143.8	231.8
Governments ¹	13.9	19.3	23.0	23.4	30.7	42.1	52.7	54.3	49.0	69.1
Corporations ²	21.5	29.1	46.2	75.9	89.7	113.7	109.0	134.7	108.5	220.4
Unallocated	0.6	2.0	5.7	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Brokered	1.2	2.1	1.0	1.6	10.7	1.9	1.5	3.0	0.0	0.0
Total (interest rate and currency swaps for all counterparties)	474.1	692.3	1,011.8	1,477.0	1,950.2	3,124.5	4,399.9	6,620.2	9,153.9	14,437.3

Sources: Bank for International Settlements, *International Banking and Financial Market Developments*, various issues; and International Swaps and Derivatives Association, Inc. (ISDA).

¹Including international institutions.

²Including others.

³Adjusted for double counting because each currency swap involves two currencies.

are convincingly addressed and the Japanese economy and financial system are put clearly on the road to recovery, the Japanese yen will remain weak and probably under continued downward pressure, especially against the dollar. As has been true recently, a falling yen would put downward pressure on other Asian currencies, including those that remain pegged to the dollar, and a weakening Japanese economy will complicate recovery elsewhere in Asia. Further widening of Japanese trade surpluses vis-à-vis other industrial countries may, at some point, regenerate trade tensions that could have destabilizing effects in foreign exchange and financial markets. Also, with the further deregulation of foreign exchange and financial markets in Japan, and notwithstanding the availability of foreign currency assets prior to April 1998, there is the potential concern that further domestic weakening could motivate capital flight, which would add downward pressure on the yen at the same time that it tended to push up domestic interest rates and depress Japanese equity prices. The key to containing these risks, of course, is to get the Japanese economy moving forward and to rebuild public confidence, especially in the financial system.

There is also the risk that the crisis in the emerging markets in Asia may widen and affect other emerging markets and the mature and international financial markets. Investor disappointment about the pace of improvement in the economic and financial situation in Southeast Asia may lead to further pressures in currency markets, reduce capital flows to the region, and encourage a general reevaluation of the risks inherent in investing in the broader class of emerging markets. While some emerging markets might benefit from such a reevaluation, the rebalancing of portfolios would adversely affect other countries both within and outside of Asia. Also, continued weakness in the Asian emerging market economies may undermine ongoing financial sector reforms, deepen existing financial fragilities, and create further pressures throughout the Asian region, including in Japan. The resulting deterioration in regional economic growth and the deepening financial crisis could reach well beyond Asia, create pressures in global markets, and adversely affect economic and financial performance in the advanced countries, with the associated risk of feeding back to Asia.

Apart from these Asian risks, another fundamental concern is with global liquidity—which financial mar-

Table 4.9. Annual Turnover in Derivative Financial Instruments Traded on Organized Exchanges Worldwide*(In millions of contracts traded)*

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Interest rate futures	91.0	145.7	156.3	201.0	219.1	230.9	330.1	427.1	628.6	561.0	612.2	701.8
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	314.0
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
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
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
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
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	387.8
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
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
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
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
Interest rate options ¹	22.3	29.3	30.5	39.5	52.0	50.8	64.8	82.9	116.6	225.5	151.0	116.8
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
Currency options ¹	13.0	18.3	18.2	20.7	18.9	22.9	23.4	23.8	21.3	23.2	26.3	21.1
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	115.8
Stock market index options ¹	140.4	139.1	79.1	101.7	119.1	121.4	133.9	144.1	197.5	187.3	172.3	177.8
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	1,206.9
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
Europe	10.3	35.9	40.8	64.4	83.0	110.5	185.0	263.5	398.0	354.7	391.7	482.4
Asia-Pacific	14.4	30.0	34.4	63.6	79.1	85.8	82.8	98.4	131.9	126.4	115.9	127.0
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

Source: Bank for International Settlements.

¹Calls plus puts.

kets may be assuming will continue to be supplied on more or less the same generous terms that have characterized recent experience. For Japan, this assumption is likely to be correct for some time. For the United States and most of Europe, however, the need for some monetary tightening could come sooner than is widely anticipated. Among the 11 countries that will initially participate in EMU, there would be a further modest downward convergence of the average level of short-term interest rates by early 1999 if the Bundesbank kept its repo rate constant; but there may be a desire to avoid this implicit easing in view of price pressures already apparent in some smaller European economies. If the recovery gains further momentum when the ECB takes full control of monetary policy in 1999, there could well be early moves to a less accommodative monetary stance. For the United States, financial markets appear to be assuming that subdued inflation and the slowing effects of the Asian crisis and a probable reduction of inventory investment will keep the Federal Reserve on hold for the foreseeable future. Buoyed by significant real income gains, low unemployment, record consumer confidence, strong profits, low long-term interest rates, high equity prices, and rising real estate values, however, final domestic demand could continue to propel the U.S. economy forward at a pace that would motivate a monetary policy response. If the temporary factors

that have kept U.S. inflation artificially low disappear or even reverse in this situation, the perception could shift toward the possible need for several successive steps of monetary tightening. When this happened with the initial Federal Reserve tightening in early February 1994, it provoked a large upward move in bond yields worldwide, with yield spreads on lesser-quality credits widening significantly relative to benchmark government issues. Because the expected tightening in this scenario would probably be less than the 3 percentage point rise of the federal funds rate in 1994–95, the financial markets response would, it is hoped, be more subdued than in that episode. For economies less robust than the U.S. economy, however, the effects could be troubling.

Apart from the risks from possible monetary policy actions, there is also concern about the high valuations of equities in North American and European stock markets. Disappointments from failures of earnings growth or rates of capital gains to keep up with expectations based on recent performance could induce significant downward corrections in stock values. Individual investors who have pumped large flows into equity mutual funds but lack experience with bear markets could cut back or withdraw, thereby adding to downward pressures on prices. However, such investors are generally not believed to be highly leveraged and would not be pushed into sales by margin

calls. Also, banks in the United States and Europe are not heavily exposed to equity markets or to overvalued real estate, as was the case for Japanese banks at the beginning of the decade. And, monetary policy could respond, as it did in 1987, to help contain a disorderly retreat in equity markets. Thus, for the buoyant U.S. economy and (to a somewhat lesser extent) for recovering European economies, there is not a great deal to fear from a moderate stock market correction. The potential spillover effects on more fragile economies, however, could be more worrying.

In addition to these conjunctural issues, structural features of global financial markets, such as the continued rapid growth in derivatives markets, while clearly reflecting beneficial structural trends, still pose risks. Financial and nonfinancial institutions now engage in precision finance made possible by advances in information and communications technologies that allow them to measure, unbundle, price, repackage, and hedge risks in an economical manner (see Annex V). Other structural developments in the financial services industry, including regulatory and competitive pressures, have led financial institutions to reach out to new areas of business (including geographically) and better manage their current areas of business. The expansion in activity, as with any new area of enterprise, brings with it risks that some market participants, including large and systemically important ones, may not fully understand all of the risks inherent in these new ways of doing finance, and some of them are likely to hit “speed bumps” along the way.

The risks posed by advances in derivatives markets are just one aspect of the ongoing process of international financial integration (Annex V discusses other aspects as well). Greater integration of national financial markets has led to tremendous growth of cross-border transactions and thereby raised the systemic importance of the financial institutions that intermediate these flows in international markets. Institutions of all sizes have ventured outside normal boundaries of risk-taking, and new kinds of institutions have entered the global arena. The menu of risks has also expanded, and market dynamics may no longer be well understood by market participants and policymakers. As the most recent crises in Asia have demonstrated, sharp adjustments in markets in one location (Asia) can suddenly affect price movements and market liquidity in

distant locations (Brazil or Russia) and cause productive hedging activities to unravel. As a result of structural changes in financial markets, financial adjustments to shocks may have become larger and less predictable, and might be transmitted farther, faster, and wider through the global financial system than before, creating substantial uncertainty about how the balance of systemic risk has changed, and posing challenges to market participants and supervisors alike.¹⁹

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¹⁹This view is also expressed in Group of Thirty (1997).