

## VI. Financial markets

### Highlights

Financial markets reversed course last year. In the world's major equity markets, an extraordinary five-year run of price increases ended with the deflation of what was in retrospect a global asset price bubble. The markets that had risen the most tended to fall the farthest, with those for technology stocks showing the most pronounced boom-and-bust pattern. In bond markets, the narrowing of credit spreads in 1999 gave way to a widening of spreads last year. These price reversals affected emerging markets, with wider sovereign spreads and weaker equity markets in Asia and Latin America in particular. The easing of US monetary policy in the early months of 2001 sparked a narrowing of credit spreads but only a tentative recovery in equity markets. The uncertain outlook for earnings left it unclear whether the stock price correction had run its course.

To a large extent, the price reversals in 2000 were an adjustment of excesses engendered by previous optimism about corporate earnings. In the technology sector, the gap between share price increases and earnings growth had widened over time. When investor sentiment shifted, the various national technology stock indices fell together, regardless of differences in underlying earnings performance. In the credit markets, telecommunications firms had borrowed heavily when their prospects were seen to be good, but the accommodation by investors soon gave way to concerns about high leverage. While the slowing of the global economy and diminishing prospects for corporate earnings clearly played a role in the market declines, there was nonetheless a notable lack of readily identifiable news about fundamentals to explain many of the sharp price movements.

Equity offerings and bond issuance by higher-risk borrowers, especially technology companies, slowed from a very rapid pace in the first half of 2000 to subdued levels in the second. Lower-rated borrowers turned increasingly to the money market, where credit spreads did not widen as much. Still, highly rated companies remained active in primary markets. Facing a declining supply of government securities, investors looking for safety during periods of deteriorating credit conditions turned to highly rated securities, such as those of Fannie Mae and Freddie Mac.

Notwithstanding the general worsening in financing conditions, investors in emerging markets tried to distinguish between potential borrowers according to credit risk but seemed to find few willing borrowers among the creditworthy. Continued current account surpluses limited the demand for external financing. In fact, owing to record deposits by Asian and oil-exporting countries, net flows to BIS reporting banks in 2000 from developing

countries as a group exceeded the net outflows driven by repayments during the financial crises of 1997–99.

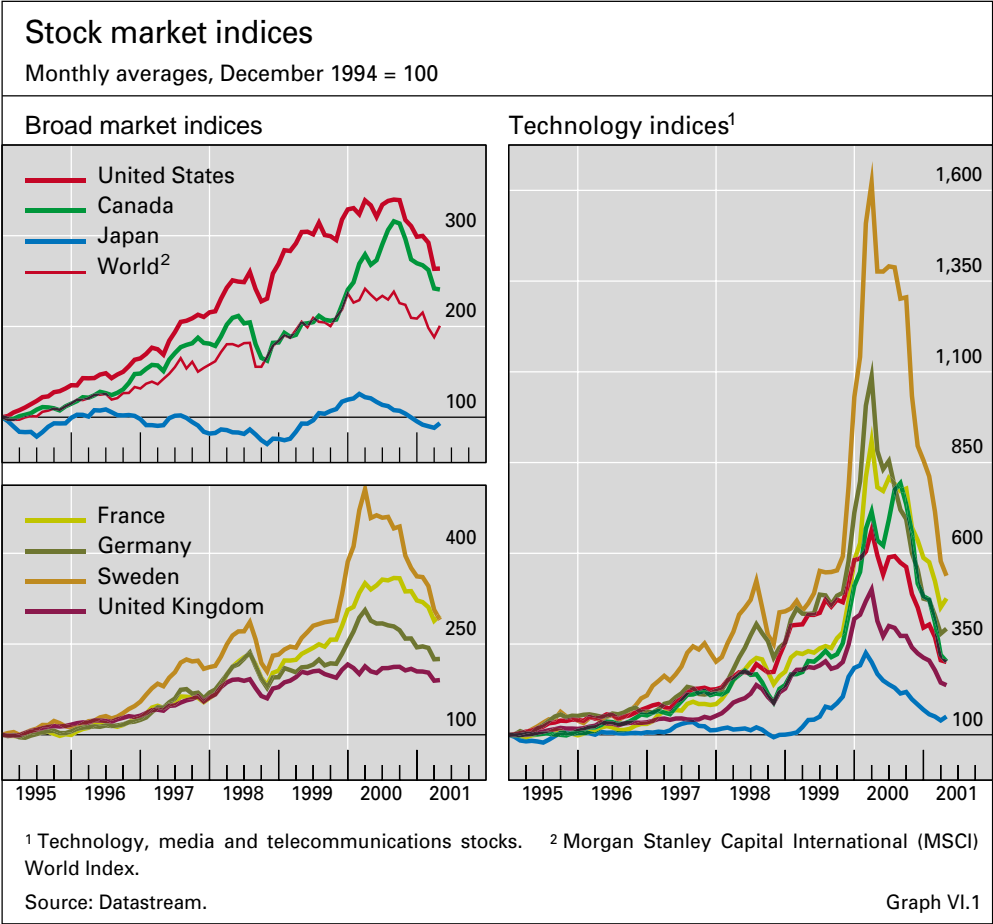
A notable aspect of the recent period of deteriorating financing conditions was the smooth functioning of financial markets in the face of sharp price movements. In the early part of 2000, the process of adapting to declining supplies of new government paper had raised concerns about how some major markets, in particular US fixed income markets, would operate. Concerns about market functioning receded in the latter half of the year. Investors grew increasingly comfortable using private instruments such as interest rate swaps for hedging, price discovery and other purposes for which government securities tended to be used in the past.

**Equity markets**

*Asset price bubbles versus fundamentals*

From April 2000 to the first quarter of 2001, stock prices around the world generally declined sharply. Stock markets had suffered price falls of a comparable magnitude in 1990, the last time the global economy sank into a recession. The reasons for the declines, however, differed fundamentally between the two periods. In August and September 1990, the MSCI World Index fell by 21%. These losses were arguably rooted in fundamentals in that

Stock markets declined in 2000 as in 1990 ...



... but for different reasons

they primarily reflected the supply shock of a doubling of oil prices following Iraq's invasion of Kuwait. In the more recent global episode, the MSCI index decreased by 23% between April 2000 and March 2001. This time, however, the losses seemed to represent the deflation of a worldwide equity price bubble rather than a collapse driven primarily by macroeconomic developments. Nevertheless, the changing macroeconomic circumstances undoubtedly shaped the timing and extent of the price declines.

Extraordinary price increases ...

Evidence supporting the view that there was a global stock market bubble can be derived from the fact that several markets experienced an extended period of extraordinary price increases, followed by a nearly simultaneous reversal of those increases (Graph VI.1). This coincidence of price movements occurred despite somewhat divergent macroeconomic fundamentals. The five-year period to March 2000 saw the S&P 500 index increase threefold. The Stockholm market posted the most spectacular gains, rising nearly fivefold during the period. The markets of Paris, Amsterdam, Frankfurt and Toronto did not lag far behind, increasing by between 150% and 250%. The price rises appeared to be driven largely by a mutually reinforcing process of investor optimism and herding. At their peak in March, US share valuations were on average 33 times the trailing earnings per share, an unprecedented price/earnings multiple. Prices in all of these broad markets started to fall in spring 2000, with those falling the most tending to be the ones that had risen the farthest.

... followed by a sudden reversal

The pattern of rising prices and subsequent reversal was most apparent for technology stocks. During the long run-up in the prices of these stocks, market analysts had justified the high valuations by predicting that earnings growth would accelerate. Some observers had also argued that the technology sector was largely immune to an economic slowdown or to a rise in interest rates. These predictions, however, proved unfounded. In fact, the growth in earnings never caught up with the increases in prices, so that price/earnings ratios kept rising. In the US technology sector, stock prices rose over five years at a rate almost five times the growth of earnings (Table VI.1).

In technology stocks, earnings failed to catch up with prices

Price/earnings ratios, price changes and earnings growth for technology stocks							
	Price/earnings ratios			Percentage changes			
	March 1995	March 2000	March 2001	March 1995–March 2000		March 2000–March 2001	
				Prices	Earnings	Prices	Earnings
Sweden	34.5	120.8	19.1	1,217	276	– 65	124
Germany	16.9	63.3	30.4	909	169	– 64	– 24
France	11.3	63.8	21.0	804	60	– 49	55
Italy	12.8	56.0	26.1	732	90	– 44	19
Netherlands	14.7	64.6	33.0	654	71	– 58	– 18
Canada	20.4	59.0	14.7	586	137	– 53	88
United States	19.2	53.2	24.7	509	120	– 55	– 2
United Kingdom	15.4	72.1	36.0	352	– 3	– 49	2
Japan	57.3	169.3	89.3	254	20	– 55	– 15

Sources: Datastream; BIS calculations.

Table VI.1

The gap between price increases and earnings growth was even greater for technology stocks in European countries. In the United Kingdom, technology stock prices rose even as earnings fell. Moreover, stock prices started to fall after a period of rising interest rates and the growth of earnings in the technology sector weakened at the first sign of an economic slowdown. Price/earnings multiples did decline, but, as is usually the case, this reflected falling stock prices rather than rising earnings.

A remarkable feature of the price declines in technology stocks was the similarity of their timing and magnitude. Most decreases started in March or April 2000, and generally amounted to between 50% and 70% by March 2001. This occurred despite wide dispersion in earnings growth rates across countries (Table VI.1). These highly synchronised price movements cannot be fully explained by fundamental similarities in the circumstances of the technology sectors in the various countries. Rather, they are arguably better understood as reflecting the high degree of uncertainty about valuations, which may have led investors to seek quantitative anchors in other stock markets. The main anchor appears to have been the Nasdaq index, the most quoted index for technology stocks. Thus, with little else to go on beyond a general weakening of earnings growth, most technology stock indices fell in tandem with the Nasdaq.

Uncertainty made Nasdaq a price anchor

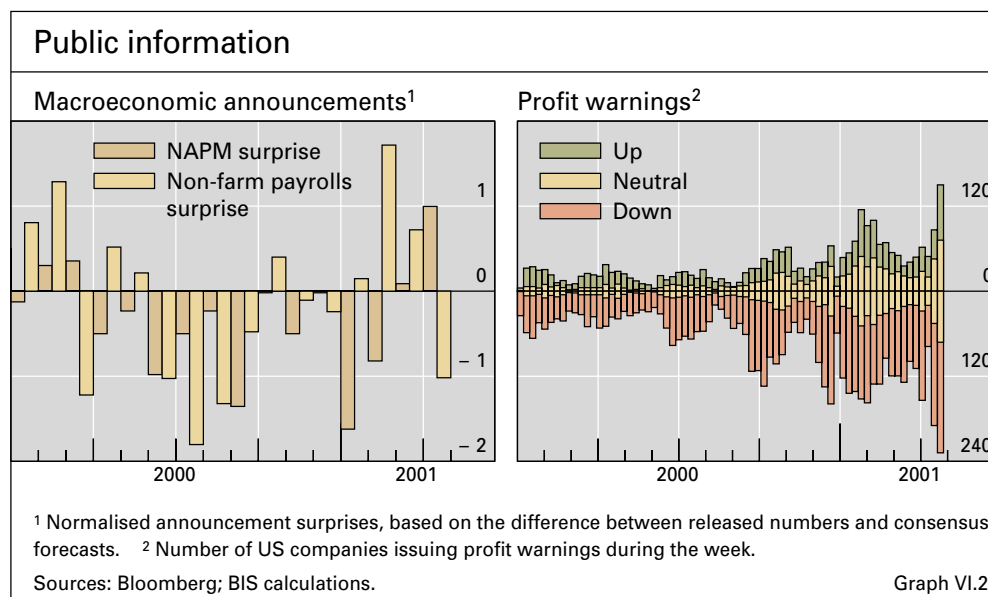
This anchoring process helps to explain why European equity markets tracked US markets lower during 2000 despite somewhat divergent macro-economic fundamentals. Admittedly, the large number of transatlantic mergers and acquisitions undertaken by European firms in recent years established a link between the earnings of European corporations and US economic conditions. Nevertheless, the correlations of returns between the European and US markets seemed larger than could be explained by fundamentals alone.

#### *Information and stock prices*

The recent fall in stock markets was not instantaneous but unfolded over several months, with the bulk of the price declines occurring in two rounds. The first of these took place in April and May 2000, while the second started in September 2000 and continued, with a brief interlude in January, through the first quarter of 2001. In both cases, market participants around the world focused on the information perceived to influence US monetary policy and the effect of this information on the Nasdaq index in particular. However, the two episodes differed markedly regarding the significance of public information in accounting for specific daily price movements.

The most notable aspect of the first round of price declines was the lack of identifiable and significant new information that could account for the sudden fall in prices. In this respect, the episode was similar to the global market declines of October 1929 and October 1987. During the first few months of 2000, the most watched macroeconomic data releases, such as the US non-farm payrolls number, indicated a persistently strong US economy (Graph VI.2). This led to uncertainty about how far monetary policy would tighten and, in combination with increasing market nervousness over valuations, resulted in heightened volatility. But only in early April 2000 did

A lack of news to account for the price declines



the technology sector as a whole start on its downward course, seemingly prompted solely by a shift in investor sentiment. One exception was 14 April, when the Nasdaq index fell by 10% on the release of consumer price data. The market recovered within a week, however, even in the absence of new macroeconomic data. Overall, the Nasdaq index fell by nearly 20% in April and May, apparently pulled down by deepening investor pessimism in the absence of favourable economic news.

For the second round of price declines, it is easier to identify information that moved the markets. This round started in September, when a growing number of listed companies in the United States began to warn that analysts' earnings estimates would not be met. The next few months saw increasingly weak US macroeconomic data, culminating in the release of a survey by the National Association of Purchasing Management (NAPM) on 2 January 2001, indicating that the economy was slowing more rapidly than initially thought. As more companies revised their profit forecasts downwards, investors began to appreciate the link between earnings of individual companies and the performance of the economy at large; both narrow technology indices and broader markets fell steadily. The Nasdaq index declined by 42% between September and the end of the year, while the MSCI World Index fell by 13%. The markets started to recover on 3 January 2001, when the US Federal Reserve surprised market participants with a 50 basis point cut in its policy rate. The Nasdaq index gained 14%, its largest ever single-day rise. The recovery proved to be temporary, however, despite further cuts in the US policy rate. With profit warnings weighing heavily on the markets, share prices resumed their slide in February and March.

In April 2001, a seemingly minor piece of news spurred a two-week rally that revealed an underlying optimism about corporate earnings prospects. Early in the month, an announcement by a major manufacturer of personal computers that it had met its earnings estimates sent the Nasdaq soaring by 9% and the S&P 500 by over 4% in a single day. Several days later, a surprise policy rate cut by the Federal Reserve reinforced the rally. After two weeks, the Nasdaq

Profit warnings weighed heavily on the markets

Investors still optimistic

had gained 33% and the S&P 500 14%. The price increases lifted valuations for the S&P 500 to 27 times trailing earnings, a price/earnings multiple that was almost double the historical average. Optimism ran even higher for Nasdaq stocks, for which the price/earnings multiple was six times that of the S&P 500.

### *The Tokyo stock market and Japanese banks*

Among the world's major equity markets, the most notable exception to the five-year trend of rising prices was Tokyo. This market had remained weak until 1998 (Graph VI.1) and joined the global trend only in 1999. Like other major markets, Tokyo was bolstered by a booming technology sector. In addition, developments in the banking sector provided the major boost. In 1999, market participants took the Japanese government's injection of ¥7.5 trillion into 15 major banks as a sign of a serious effort to strengthen a weak banking system. Foreign investors were among those impressed, as evidenced by significant portfolio inflows from abroad. Large bank mergers sustained the market's momentum.

Developments in banking ...

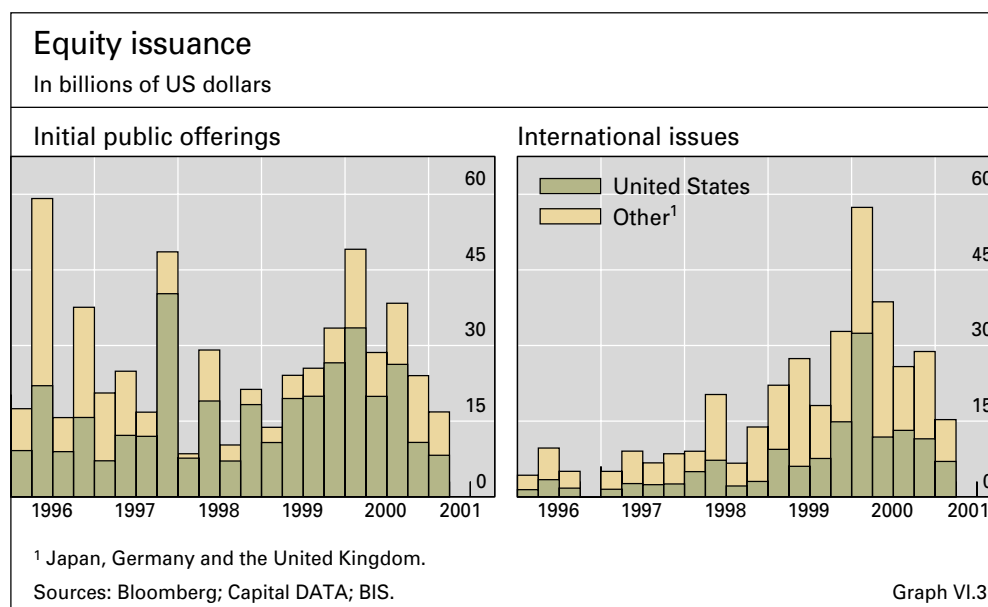
The Tokyo market then started to slide again in 2000, ahead of declines elsewhere. Early in the year, there was no easily identifiable news that could account for the falling prices, as was the case in the subsequent first round of declines in the US market. Only in May did the influence of the US market become evident, as the technology sector of the Japanese market saw prices fall sharply in tandem with the Nasdaq index and foreign investors began to sell. In the summer, estimates by the Financial Services Agency of Japanese banks' non-performing loans seemed to weigh heavily on the market. In October, selling pressure intensified with the bankruptcy of Chiyoda Seimei, a life assurance company, and the continued decline in the Nasdaq index. The weakness of the Tokyo market made it more difficult for Japanese banks to raise cash by selling their cross-shareholdings and to realise enough profits to absorb writedowns of non-performing loans. In early 2001, the Japanese government began to contemplate buying those shares from the banks, so as not to delay the desired reduction in cross-holdings. The de facto return to zero policy rates in March and the election of Prime Minister Koizumi in April brought renewed strength to the market.

... a major factor in the Tokyo market

### *Implications for the real economy*

The deflation of the global technology stock bubble has already had discernible real consequences. In particular, the effect on investment through the cost of capital was immediately apparent. Technology start-ups, which had relied heavily on initial public offerings (IPOs) for raising capital, were especially hard hit. Gross proceeds of IPOs in the United States, Japan, Germany and the United Kingdom fell from their near record pace of \$49 billion in the first quarter of 2000 to \$29 billion in the second, and declined still further in the first quarter of 2001 (Graph VI.3). Announcements of international equity issues by US companies fell proportionately even more, although those by non-US firms continued to be strong for one further quarter. Some start-ups took advantage of the modest recovery in stock prices during the summer, leading to a temporary burst of activity in the IPO market.

Effect on investment already apparent



The stock market decline has also had consequences for the reported incomes and cash flows of US companies through their defined benefit pension plans and stock option grants. In 1998 and 1999, profits had been boosted by the fact that gains in the stock market had resulted in an overfunding of defined benefit plans, which companies could report as income. The decline of the market in 2000 deprived many companies of that income, and further declines could result in plan shortfalls that would add to expenses. At the same time, technology firms had increasingly tended to issue stock options to employees as a form of compensation. In the United States, the exercise of these options allowed companies to reduce their taxes and thus add to their cash flows, at the cost only of diluting the share values of existing shareholders. For some of the larger technology companies, these tax benefits accounted for as much as 60% of cash flows from operations. At current stock prices, however, a substantial amount of stock options will not be exercised. These companies are now finding themselves with increased tax bills even as their sales slow and their inventory costs rise.

Stock options allowed companies to reduce their taxes

Consumer confidence, unemployment and the stock market			
	Estimated effects <sup>1</sup>		
	1992–94	1995–97	1998–2001
	US consumer confidence		
Nasdaq returns	-0.081	0.181	0.133*
US unemployment rate	-0.715*	-0.482	-0.379
	French consumer confidence <sup>2</sup>		
CAC 40 returns	0.009	-0.134	0.037
French unemployment rate	-0.184*	0.125*	-0.191

<sup>1</sup> Sum of regression coefficients from two quarterly lags of stock returns and two monthly lags of unemployment rates, respectively. An asterisk indicates significance at the 1% level based on the chi-squared statistics for a Wald test of the joint significance of the coefficients. <sup>2</sup> Based on the EU indicator for France.

Sources: Bloomberg; national data; BIS calculations.

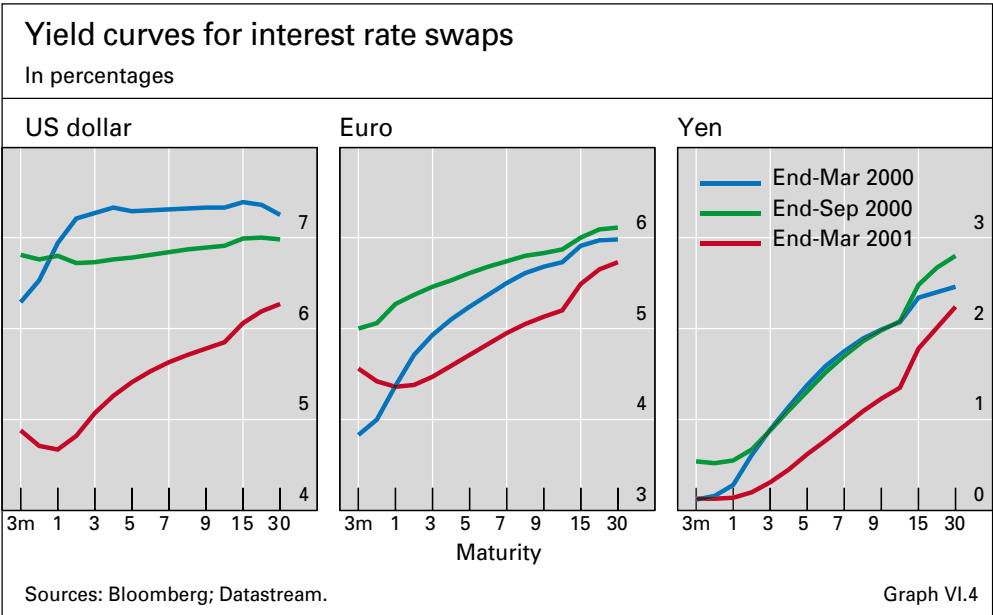
Table VI.2

A possible effect on consumer confidence may have further-reaching ramifications. While the wealth effect of equity prices on consumption may depend on what stocks households actually hold, and thus on the performance of broad price indices, recent shifts in the confidence of US consumers seem to have been driven largely by movements in the relatively narrow Nasdaq index. As shown in Table VI.2, consumer confidence in the United States for much of the 1990s, and in France in the early 1990s, tended to move in line with the unemployment rate rather than stock market returns. Since 1998, however, Nasdaq returns have become a more important driver of consumer confidence in the United States than the unemployment rate. Though stocks traded on Nasdaq may not constitute a large part of households' portfolios, the prices of these stocks may now be seen as a leading indicator of productivity in the economy. Thus, they may potentially exert a disproportionate influence on consumers' spending decisions.

Nasdaq drives US consumer confidence

Fixed income markets

In parallel with equity markets, bond markets during 2000 suffered from reduced corporate earnings prospects and increased investor risk aversion. Credit spreads widened over a broad range of instruments, and net issuance of long-term debt securities slowed from 1999's record levels. In the first half of the year, the wide spreads and the rise in the general level of long-term interest rates did not keep borrowers, especially telecommunications firms, from raising money in the bond market. In the second half of the year, however, lower-rated issuers found it increasingly difficult to borrow in the long-term market, and many then turned to banks. The difficulty did not seem to extend to highly rated issuers. In fact, declining supplies of US government debt induced some of them to offer their own paper as substitutes for purposes of collateral, hedging and benchmark pricing. In the first quarter of



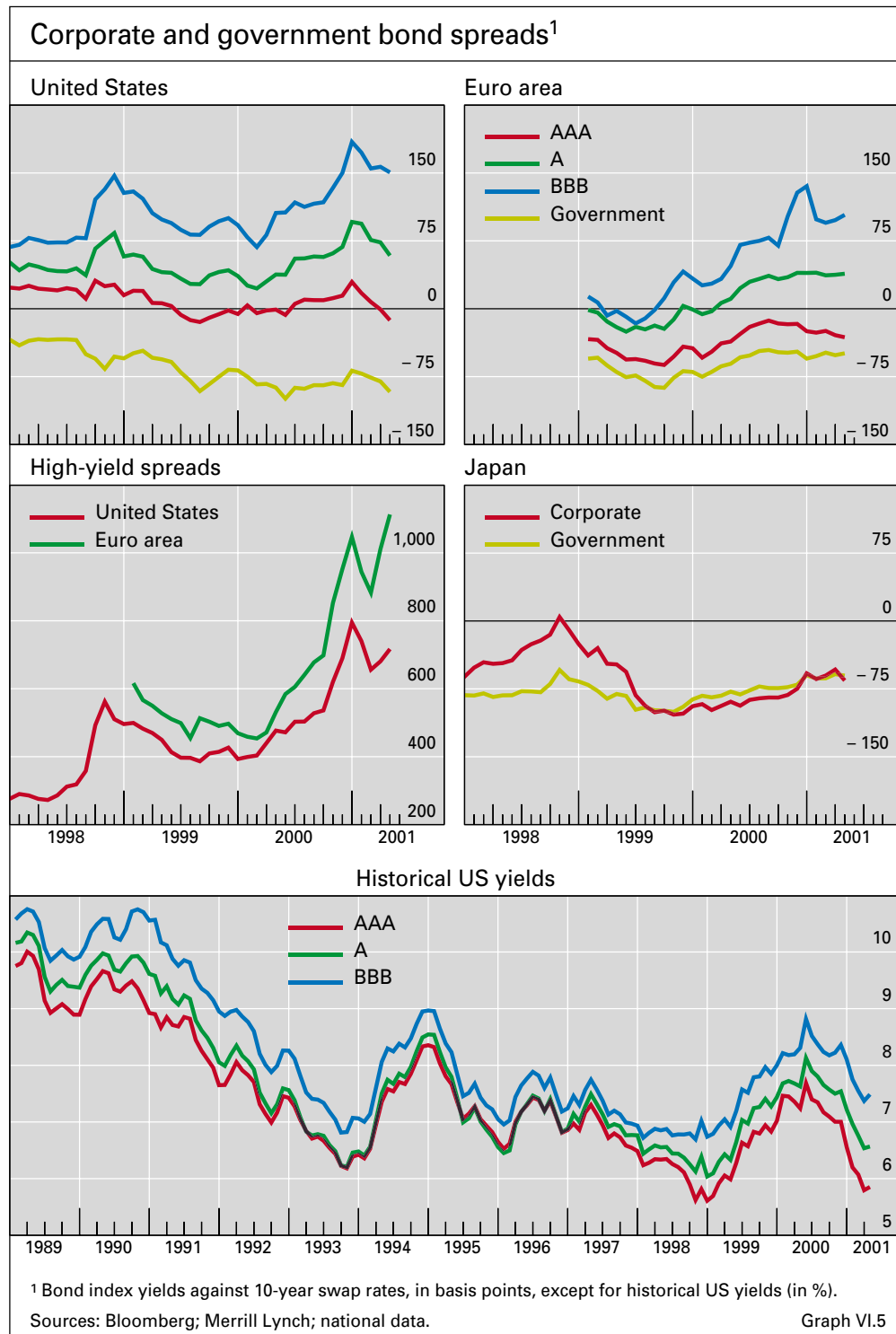


2001, a narrowing of credit spreads and a general fall in interest rates brought lower-rated issuers back to the global capital markets.

*The pricing of credit risk and response of borrowers*

Three phases of credit risk repricing

Fixed income markets went through three distinct phases during 2000 and the early part of 2001. The first phase, lasting roughly from January till August, saw upward-sloping yield curves and a generalised widening of credit spreads in North America and Europe (Graphs VI.4 and VI.5). These increases affected

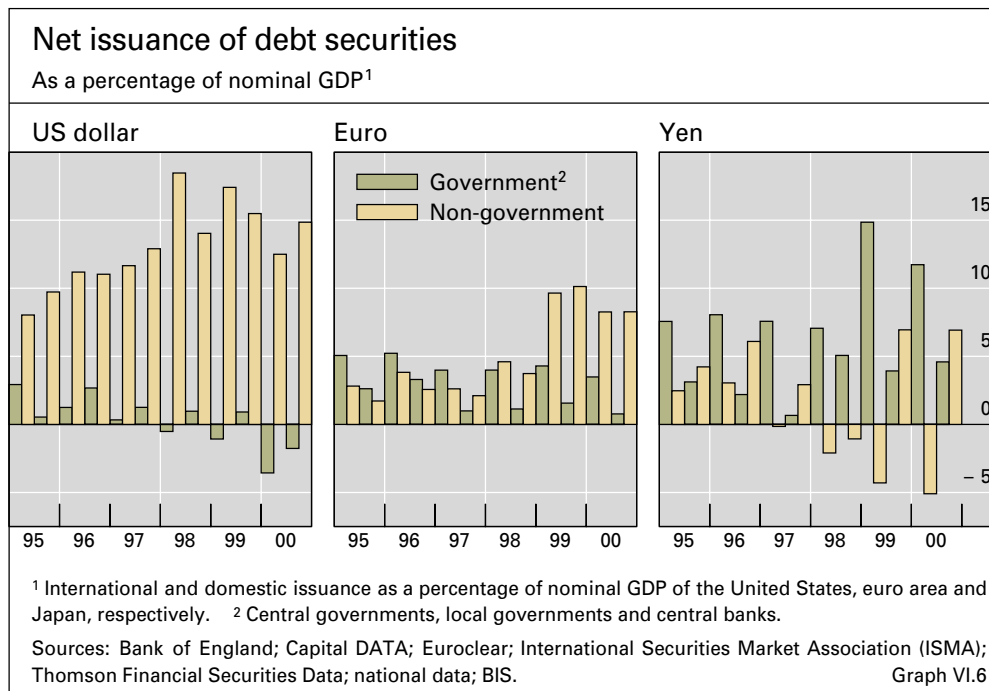


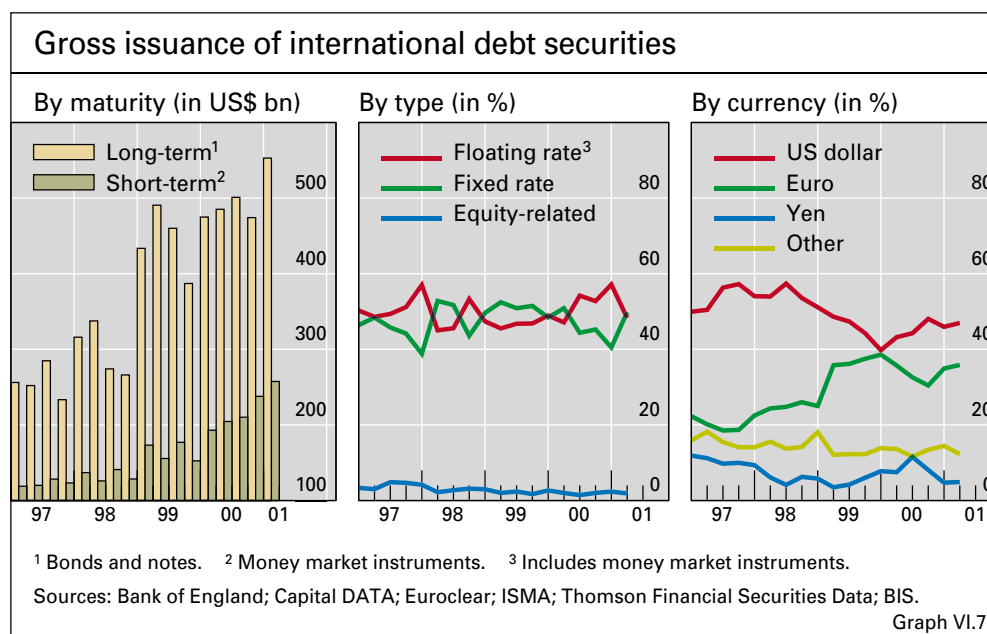
borrowers' choice of financing vehicle but had little impact on overall borrowing activity. During the second phase, from September to December 2000, yield curves began to flatten and credit spreads diverged markedly across different debt classes. In particular, investors were unreceptive to issues by any but the highest-rated borrowers. The final phase, covering the end of 2000 and the first few months of 2001, witnessed a sharp downward movement in yield curves and a modest decline in spreads from the very high levels reached in late 2000. This spurred a recovery in issuance by lower-rated borrowers.

The first phase of rising yields and widening spreads did not seem to dampen overall fund-raising in the capital markets. This phase spanned both the final rally in equity markets and the beginning of their downturn. The increased uncertainty about the outlook for corporate earnings, as signalled by high levels of volatility in equity markets, resulted in a widening of credit spreads on most debt classes. Among investment grade securities, the widening was especially pronounced for euro-denominated debt, with spreads over swaps rising even for the highest-rated issues. Spreads on AAA-rated securities denominated in US dollars were roughly constant, but those on other US dollar debt categories widened to levels last seen in the months following the financial crisis of autumn 1998. Despite these conditions, primary market activity held up well in the first half of 2000. Net issuance by non-government borrowers slowed only slightly (Graph VI.6). Widening euro and US dollar credit spreads led some international borrowers to issue in the yen market, where interest costs were relatively low. Gross issuance of international debt securities denominated in yen rose to a record \$221 billion in 2000 (Graph VI.7). Market participants' expectations of further monetary tightening, as reflected in the upward-sloping yield curves, may have induced some borrowers to advance their issuance plans.

A first phase of wider spreads reflecting uncertain earnings ...

... did not dampen borrowing





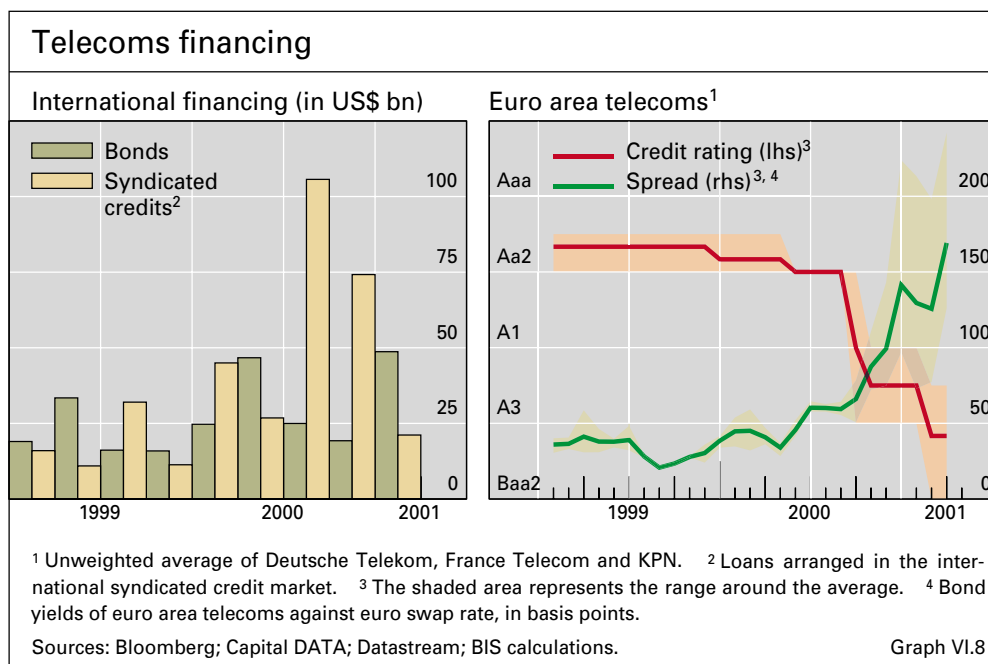
European telecommunications companies took advantage of favourable sentiment about their prospects by borrowing heavily during the first phase. Telecoms in general raised \$71 billion from the international bond market during the first half of the year (Graph VI.8). Their demand for funds stemmed largely from acquisition activity and bids for third-generation mobile telephone licences in Europe. The availability of financing and the high prices paid at the government auctions of those licences, especially at the UK auction in April and the German auction in August, reflected an optimism similar to that which had supported the high valuations of other technology stocks.

The second phase of widening credit spreads had a more significant impact on borrowing. With the waning of market participants' perceptions of a soft landing scenario, yield curves flattened in the third quarter, suggesting that overall levels of interest rates were unlikely to rise further. Spreads on the highest-rated debt remained more or less stable during this period, but those on BBB-rated and high-yield issues widened dramatically, reaching very high levels by the end of the year. As a result of these divergent trends in spreads, issuance by lower-rated borrowers slowed noticeably towards the end of 2000, while highly rated European banks and US government-sponsored enterprises (GSEs) remained active in the primary market.

The robust demand for AAA-rated debt arose in part from a lack of government debt. Investors who used to purchase government securities during periods of deteriorating credit conditions instead bought highly rated private sector or quasi-public paper. In the US dollar market, GSE securities, particularly the obligations of Fannie Mae and Freddie Mac, have been among investors' favourite alternatives to US Treasury securities. In recent years, Fannie Mae and Freddie Mac have sought to improve the liquidity of their securities through large, regular issues in US dollars and euros, and in so doing to establish their obligations as benchmarks for pricing and hedging other securities. Concerns had emerged in the early part of 2000 about the credit standing of Fannie Mae and Freddie Mac after proposals were

In the second phase, lower-rated issuance declined

GSEs benefited from declining government issuance ...



introduced in the US Congress to remove their government credit lines and local tax exemptions. This legislative pressure abated towards the end of the year, when the GSEs undertook to raise their capital ratios and improve their disclosure practices.

The rapid deterioration in financing conditions for lower-rated borrowers in the latter part of 2000 suggested a shift in sentiment about the earnings prospects of the technology, media and telecommunications sectors. Telecoms were especially hard hit. The high prices at the auctions for third-generation mobile telephone licences in Europe would by themselves have justified some downgrading of credit ratings and a widening of credit spreads. The actual extent of the downgrades and rise in spreads (Graph VI.8), however, also implied a re-evaluation of the revenue prospects for telecoms. In September, downgrades of two of the larger European telecoms consisted of multiple ratings notches, unusually drastic steps by rating agencies. Credit spreads for the two companies widened by an average of 103 basis points from September to December. Consequently, telecoms in general, which had been among the most active issuers in the international debt securities market in the first half of 2000, reduced their issuance in the second half of the year and relied more heavily on the syndicated loan market.

... while telecoms suffered from a shift in sentiment

Rather than cutting back their issuance, some borrowers responded to the uncertain interest rate outlook by relying more heavily on short-term and floating rate issues (Graph VI.7). In the international debt securities market, short-term issues rose to 30% of gross issuance in 2000, compared to 27% in 1999. Floating rate issues accounted for 53% of gross international issuance in 2000, up from 47% in 1999.

Borrowers turned to the money market ...

High and volatile spreads in the normally stable commercial paper (CP) market around the turn of the year led some issuers to draw down their backup credit lines with banks. A fourth quarter widening of the yield spread between highest-rated and less highly rated US dollar issues has

been a common occurrence in recent years. However, in 2000 the CP market witnessed an unusually large year-end increase that persisted well into the new year (Graph VI.9). This widening was driven by several factors, including credit rating downgrades of large issuers, such as Xerox and Lucent Technologies, the anticipation that California power utilities would default in January, the shift of borrowers towards short-term debt issues at the end of the year, and the reluctance of banks to extend backup credit lines without an additional risk premium. In response, many borrowers moved to refinance their short-term paper in the long-term debt markets when long-term borrowing conditions improved in the first quarter of 2001.

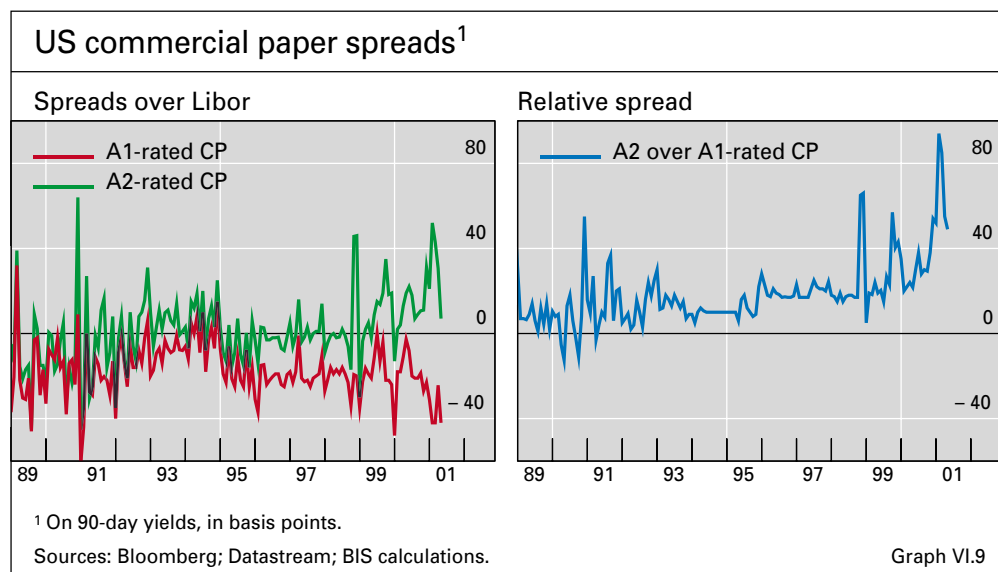
... as troubles affected the CP market

In the third phase, lower yields and narrower spreads ...

During the third phase of credit spread movements, issuance by lower-rated borrowers recovered. In the early part of 2001, yield curves in swap markets for all three major currencies shifted downwards, reflecting a worsening of growth prospects and an expected lowering of policy rates. This was accompanied by a fall in credit spreads, as market participants took a more benign view of the credit downgrades of the previous phase. The dramatic decline in overall borrowing costs resulting from both the shifts in the yield curve and the narrowing of credit spreads encouraged borrowers to return to capital markets. Telecommunications companies in particular promptly took advantage of the improved market conditions. Telecoms issued \$49 billion in the international debt securities market in the first quarter of 2001, including the largest ever corporate bond issue: \$16 billion by France Telecom.

... revived lower-rated issuance

This recovery in issuance partly reflected front-loading of financing by borrowers who thought that the improvement in credit conditions might not last and partly the release of the pent-up demand for capital from the last quarter of 2000. If the slowdown in global growth proves to be more severe than is currently expected, credit spreads could resume their widening trend. Alternatively, if growth recovers quickly, yield curves could begin to shift upwards again. In the face of such uncertainty, borrowers apparently chose to secure financing in capital markets while borrowing costs remained modest by historical standards (Graph VI.5).



Prospective cutbacks in bank lending also supported bond issuance in the early part of 2001. The deterioration in credit conditions in the latter half of 2000 had left banks with unintended exposures to lower-rated borrowers. During 2000, commercial banks had provided large amounts of short-term financing to telecoms in the expectation that these loans would be refinanced in capital markets. Activity in the international syndicated credit market reflects the scale of bank lending to telecoms: credits arranged for telecommunications companies increased to \$252 billion in 2000 from \$70 billion in 1999. In the event, the widening of spreads in the latter half of 2000 made it more difficult for telecoms to refinance these loans in capital markets and consequently left banks looking for ways to reduce their exposure to telecoms.

Issuance in early 2001 refinanced bank borrowing

### *Credit cycles in 1990 and 2000*

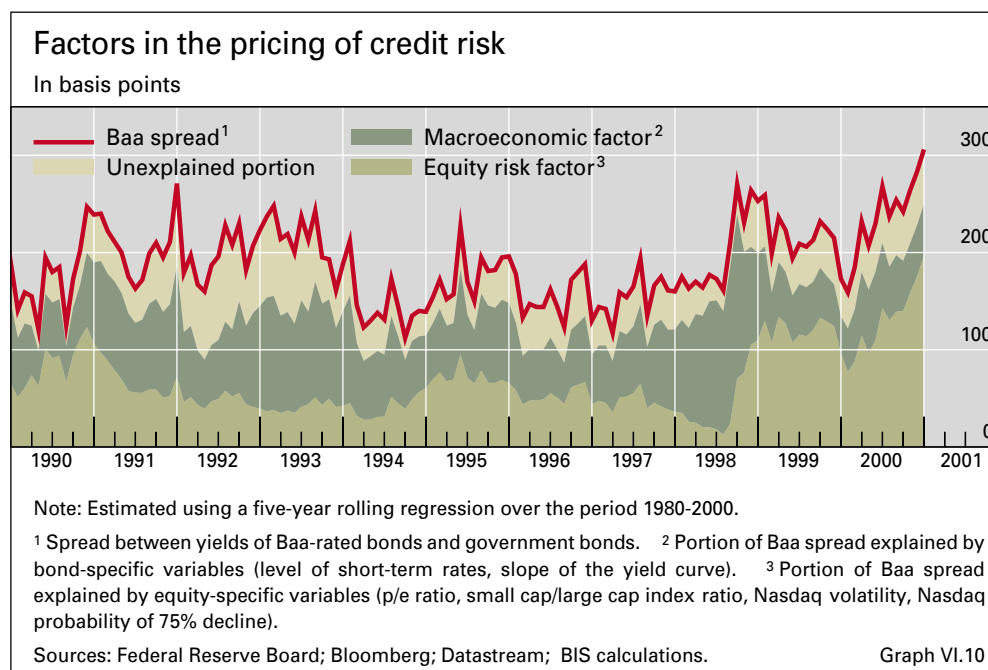
Despite wide credit spreads and the stop-and-start nature of issuance, the downward revision of the corporate earnings outlook generally proved less of a shock to bond markets than to stock markets. In some sectors, in particular telecoms, the widening of credit spreads in 2000 did mirror the collapse of the equity market bubble. However, debt markets had been much slower than equity markets to recover from the financial crisis of 1998, when spreads had last reached levels comparable to the highs recorded towards the end of 2000. As a result, they did not have as far to fall. Nevertheless, the overall financial health of the corporate sector did play a key role in driving developments in both stock and bond markets. From this perspective, 2000 had much in common with 1990. On both occasions, concerns about excessive leverage, high oil prices and a slowing US economy resulted in a similar weakening of equity markets and widening of credit spreads. Both episodes illustrated the implications of financial cycles for the market price of credit risk (see Chapter VII).

There is some evidence that the bond market began to be concerned about corporate asset valuations in late 1998, a year and a half before downward revisions in these valuations started to cause sharp declines in the overall level of equity prices. This is illustrated in Graph VI.10. The graph decomposes the yield spread between Baa-rated bonds and comparable US Treasury securities into the part explained by broad macroeconomic factors and the part explained by factors that have traditionally driven equity prices. The second set of factors – including the price/earnings ratio, the valuations of small and large capitalisation stocks, and market volatility – played a relatively more important role in determining the yield spread during 1990 and 1998–2000 than it did during the intervening years.

Equity risk factors played an important role in 1990 and 2000 ...

Notwithstanding the common elements behind corporate bond market developments in 1990 and 2000, there were also a number of important differences between the two episodes. For one thing, in 2000 the widening of credit spreads was clearly a worldwide development, being observed also in Europe and other regions. In 1990, corporate debt markets outside the United States were much less developed, and heightened credit risk premia were largely a US phenomenon. Second, bank balance sheets have tended to

... but there were important differences



be healthier in the more recent episode, so bank lending is unlikely to contract as sharply today as it did in the early 1990s. Third, while issuance slowed somewhat in 2000, particularly for borrowers of medium and low credit quality, there was no parallel to the dramatic drop in high-yield issuance that occurred in 1990. Fourth, the stock of outstanding high-yield bonds in 1990 was predominantly composed of obligations of relatively well established companies that had been involved in leveraged buyouts. Investors at that time felt confident in their ability to value the underlying assets. The more recent wave of high-yield issues, in contrast, financed working capital in the fast-growing technology sectors with relatively little in the way of tangible assets. As a result, in 2000 there was a much closer connection between the turbulence in equity markets and that in bond markets, both of which reflected increased uncertainty with regard to asset valuations.

### External financing for emerging markets

Price declines in the financial markets of industrial countries during 2000 spilled over into emerging markets. This contributed to wider bond spreads and weaker equity markets in Asia and Latin America in particular. Yet the spillover effects were more limited than those experienced during other recent episodes of deteriorating financial conditions. Moreover, investors seem to have distinguished better between individual countries according to their economic circumstances, with spreads widening for economies perceived to be higher credit risks but otherwise changing little. Nevertheless, weak demand for external financing and structural changes in investor behaviour continued to depress bank and securities flows to emerging markets.

Most emerging equity markets followed those of industrial countries lower during 2000 and the early part of 2001. Asian markets declined the most, largely because of the relatively heavy weight of technology stocks in these markets (see Chapter III). The decline in the Nasdaq index per se also appears to have weighed on emerging stock markets, even after the sectoral composition of these markets is accounted for. This was particularly the case in Latin America, as can be seen from an examination of the estimated coefficients from a regression of equity returns in emerging markets on sectoral factors and Nasdaq returns (Graph VI.11). The graph shows that once the sectoral effect has been removed, the Nasdaq by itself has little explanatory power for most of the Asian markets studied in most years, with the exception of 1998. For the Latin American markets, by contrast, the Nasdaq has had a statistically significant, if generally weak, independent effect on the local return for at least one of the four markets in every year since 1996.

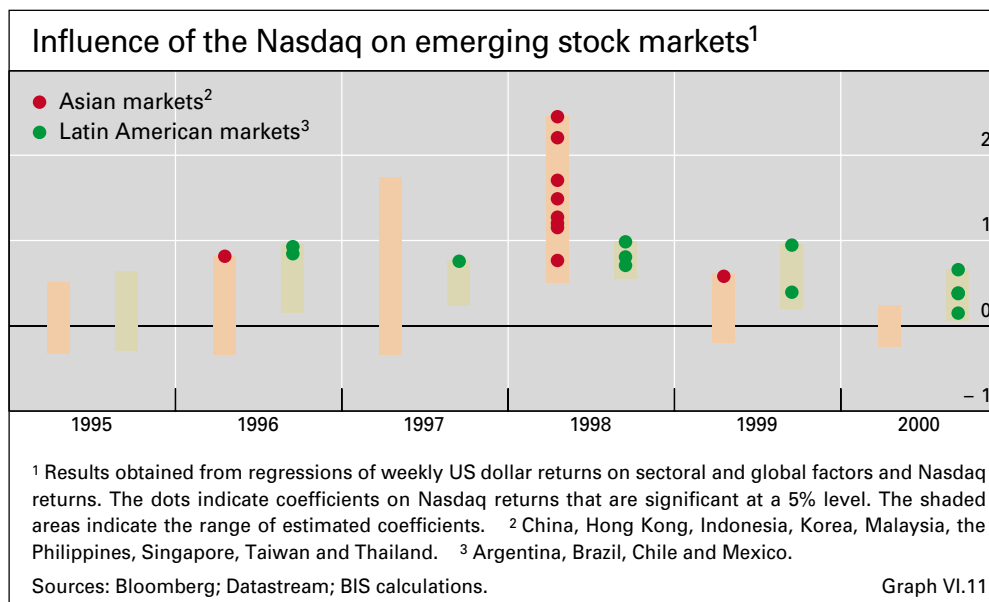
Sectoral correlations influenced emerging equity markets

While developments across equity markets were similar, spreads on emerging market sovereign debt became decoupled from those on issues by comparably rated borrowers in the industrial countries. Emerging market spreads followed high-yield spreads wider on a few occasions, notably during the second quarter of 2000 and towards the end of the year, but on the whole remained tighter (see Graph III.2). Investors moved swiftly to reprice the debt of countries facing specific challenges, such as Argentina, the Philippines and Turkey. Yet credit spreads for a number of large emerging market borrowers, including Brazil, Korea, Mexico and Thailand, remained more or less constant during the year.

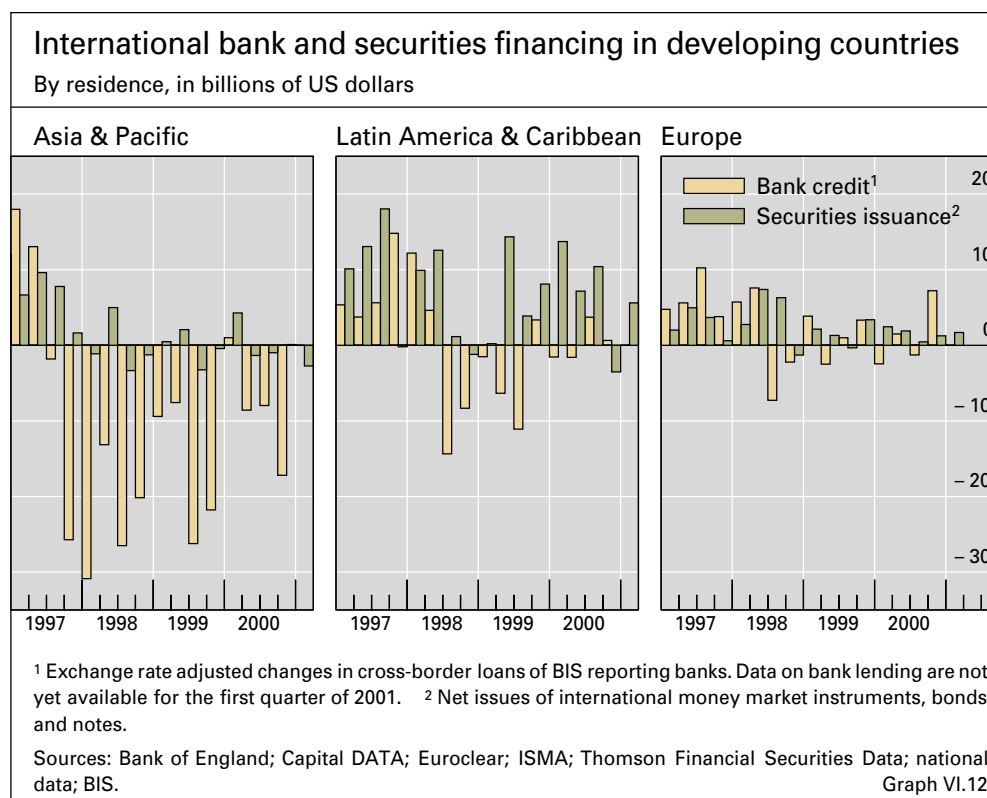
Sovereign spreads tighter than high-yield spreads ...

Despite the relatively favourable financing conditions, international bank and securities flows to developing countries remained subdued (Graph VI.12). Net issuance of international debt securities by these countries totalled \$42 billion, similar to amounts raised in 1998 and 1999. Four countries – Argentina, Brazil, Mexico and Turkey – accounted for three quarters of

... but bank and securities flows remained low







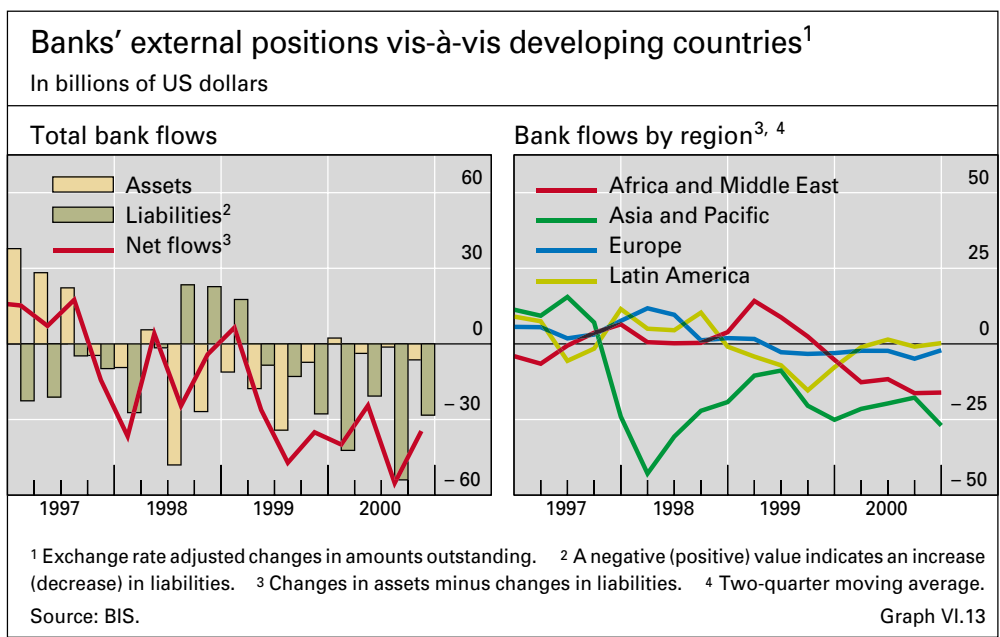
this figure. Asian and European borrowers came to the market to refinance maturing international bonds, but raised little in the way of net new financing.

The low level of securities issuance was accompanied by continued weakness in bank lending. BIS reporting banks' cross-border claims on developing countries fell by a further \$10 billion in 2000, significantly less than the \$70 billion decline in 1999. Banks did increase their exposure to a few countries in Europe and Latin America, but these increases were largely offset by further repayments from developing countries in Asia and Africa.

Several factors have contributed to the decoupling of emerging market spreads from high-yield spreads and the persistently low level of financing flows to developing countries. One factor affecting both loans to emerging economies and deposit flows from them has been their improved external position (see Chapter III). As a group, developing countries posted their largest current account surplus in two decades in 2000. The stronger external position of oil-exporting countries was responsible for much of this improvement.

In 1999, a large portion of the current account surpluses posted by developing countries in Asia had been recycled into the international financial system in the form of repayments of bank loans. In 2000, such surpluses tended to be recycled by depositing the surplus foreign exchange with international banks. Indeed, because of record deposits by Asian and oil-exporting countries, in 2000 net flows to BIS reporting banks from developing countries as a group exceeded cumulative net outflows from these countries during the financial crises of 1997–99 (Graph VI.13). Developing countries deposited a record

Current account surpluses recycled in the form of deposits

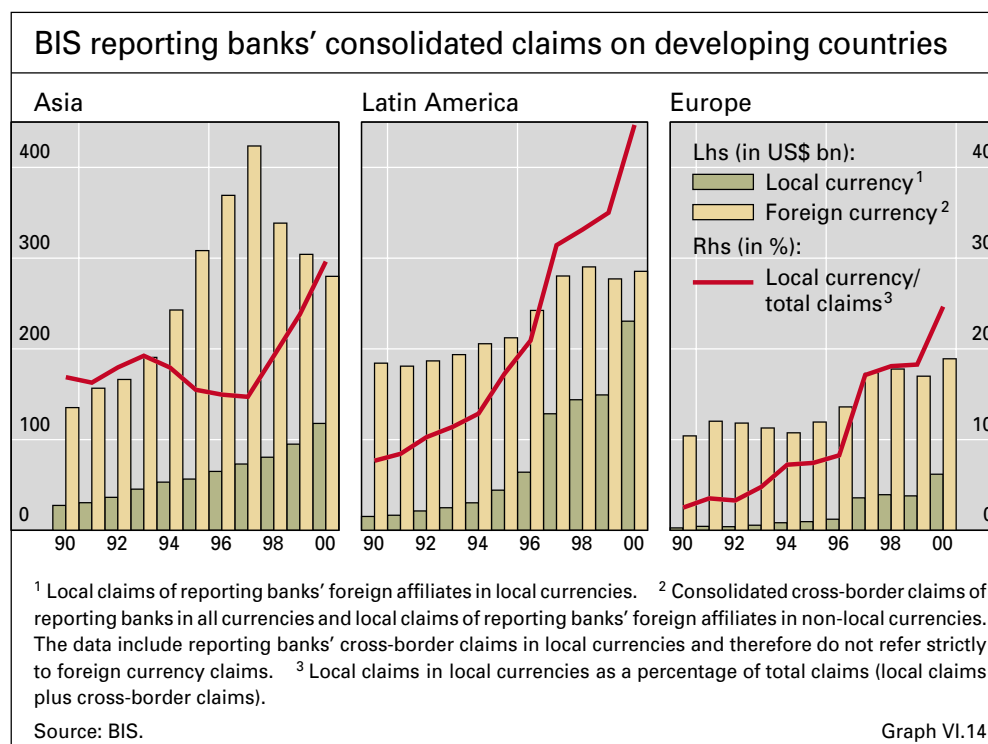


\$145 billion with international banks in 2000, equivalent to approximately 125% of their aggregate current account surplus. However, in contrast to the 1970s, when petrodollars deposited by oil exporters with international banks had supported an increase in cross-border lending to developing countries, recent deposit flows were not recycled back to the developing world.

A second factor influencing credit flows to emerging markets in recent years has been the lower profile of investments in these markets among active global investors. In response to losses experienced during the financial crises of 1997–99, proprietary trading desks and hedge funds cut back their involvement in the trading of emerging market debt. This had an adverse impact on the liquidity of emerging market securities. But it also lessened the role of global credit conditions and risk appetites in determining emerging market credit spreads, thereby helping to weaken links between emerging market and high-yield spreads.

A third structural change in emerging market financing was the growing presence of foreign banks in local financial systems. In recent years, Spanish banks have purchased a number of banks in Latin America, especially in Brazil, Chile and Mexico. These acquisitions contributed to a near fourfold increase in BIS reporting banks' local currency denominated claims on the region between 1995 and 2000 (Graph VI.14). Such claims are now almost equivalent to the reporting banks' foreign currency claims on Latin American borrowers. Likewise, German, Italian and other European banks have expanded their presence in central Europe, in particular Poland, resulting in a sharp increase in foreign banks' local currency claims on that region. Foreign banks have been slower to expand their local presence in Asia. But there is a definite upward trend, despite the retrenchment of Japanese banks in the late 1990s. Foreign banks' expansion into local financial systems may have acted as a restraint on cross-border lending by prompting acquiring banks to re-examine their overall country exposure.

Foreign banks entered local financial systems



## Market functioning

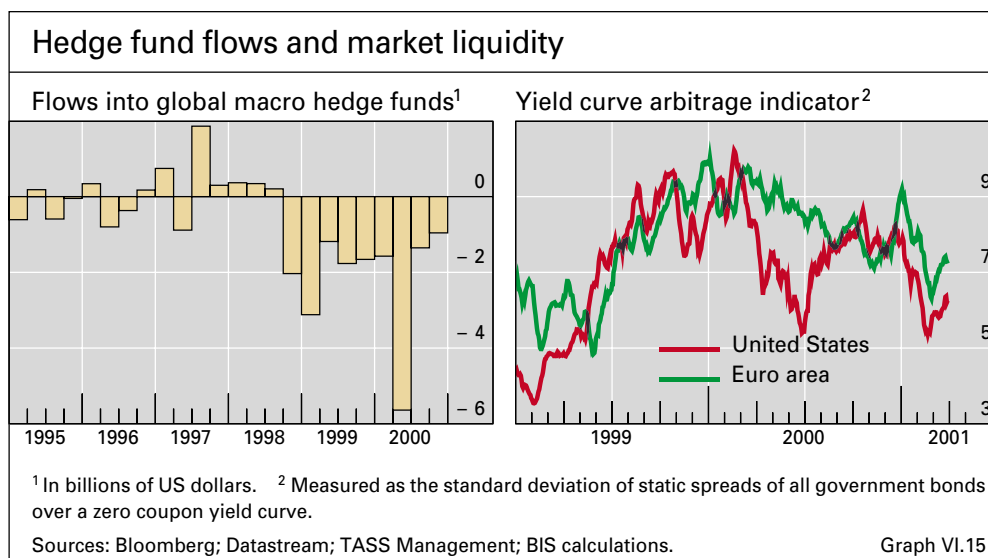
Markets functioned smoothly despite price drops

A reassuring feature of financial markets during 2000 was how well they functioned in the face of falling prices, high volatility and shifts in underlying issuance patterns. A previous flight to liquid, low-risk instruments in the third quarter of 1998 had triggered a vicious circle of deteriorating liquidity in fixed income and equity markets. This had severely strained the functioning of the global financial system. In the course of 2000, the bursting of the equity market bubble, the repricing of credit risk and the uncertain outlook for supply conditions in major government bond markets gave rise to similar concerns, albeit less serious ones, about the ability of markets to function smoothly. In the event, however, markets appear to have responded relatively smoothly to these pressures.

Liquidity proved resilient in equity markets

Despite an unusually large number of sudden sharp price movements, equity markets continued to operate and prices seemed to be reflecting shifts in investor sentiment as well as new information. Nineteen of the 100 largest daily percentage changes in the S&P 500 index since 1980 occurred in 2000 or the first quarter of 2001, and some of these triggered circuit breakers that halted trading on stock exchanges temporarily. Nonetheless, liquidity proved resilient in most markets and transactions could generally be executed.

One reason for the sharp price movements was the steady increase during the period under review in the number of profit warnings, whether positive, negative or neutral (Graph VI.2, right-hand panel). The release of such information reflected the coming into force of new US Securities and Exchange Commission regulations requiring public companies to make materially relevant information available to the public at the same time that



it is provided to analysts and large investors. The new regulations may have served not only to quicken the response of markets to corporate-level information but also to reduce the effect of trading flows on prices. Until recently, such information was likely to be conveyed to the market, with some noise, through the trades of the better informed investors.

The commercial paper (CP) market also functioned as intended. The abrupt widening of spreads around the turn of the year reflected an unusually high number of downgrades of large corporate issuers. The downgrades obliged the main buyers of CP – money market mutual funds – to sell the downgraded paper, in order to stay within regulatory limits on their holdings of low-rated instruments. Still, as already noted, both highly rated and low-rated firms successfully issued a large amount of money market debt in the fourth quarter, demonstrating that the market as a whole did not shut down. Those issuers who did lose access to this market were able to draw on the liquidity backup facilities they had arranged with banks for precisely such a contingency.

Borrowers lost access to the CP market ...

... but were able to draw on backup lines

Another sign that markets functioned well during this period was the absence of any major failures of institutions active in securities trading, whether as dealers or position-takers. In 1990, issuance and trading of high-yield bonds ground to a virtual halt because of the demise of Drexel Burnham Lambert, at the time the predominant underwriter and market-maker in this market. In the third quarter of 1998, the counterparty risks from a single troubled hedge fund, Long-Term Capital Management, led rapidly to a loss of liquidity in fixed income markets. The 1998 episode in turn induced many large financial institutions to scale back or close their proprietary trading operations and to monitor their credit exposures more closely. In both cases, the sudden departure of an entity that had been perceived as a key provider of liquidity in certain sectors caused surprisingly strong repercussions in markets more generally. No such process was evident during this most recent episode, however. This suggests that efforts to strengthen risk management since the 1998 crisis may have borne fruit.

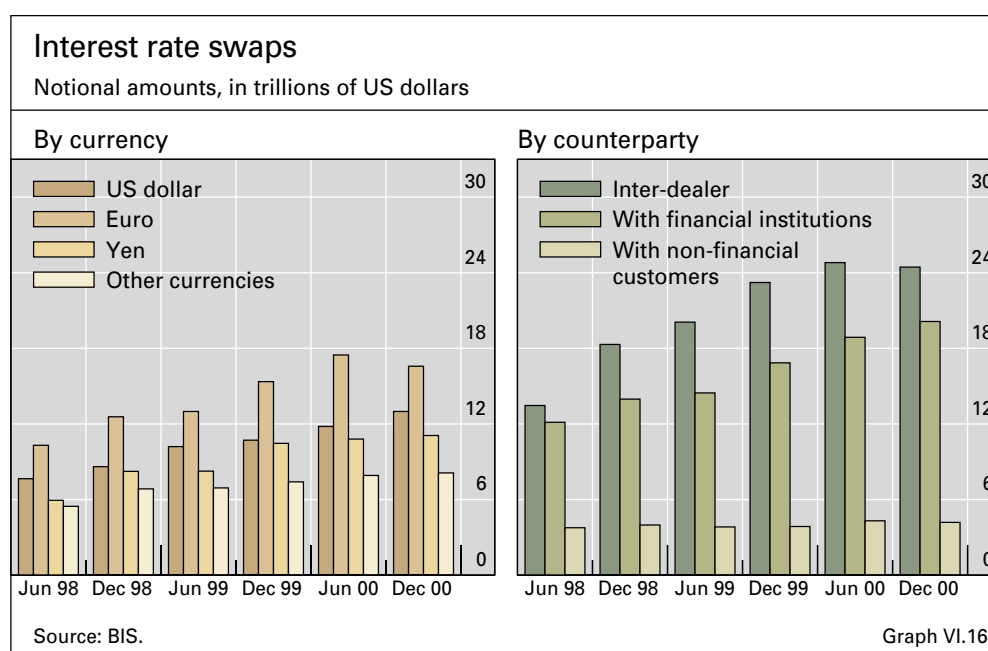
Investors finding private instruments ...

... to substitute for government securities

At the beginning of 2000, the process of adapting to decreasing supplies of new government paper led some market observers to express concerns about how major debt markets, especially the US dollar market, would operate in normal times, let alone during periods of market stress. Market participants had come to rely heavily on government securities as benchmarks for pricing other securities, as a means of hedging and positioning in both duration and volatility, as bases for futures contracts, and as collateral for secured borrowing. The smooth functioning of financial markets during 2000, however, suggests that market participants found private instruments that could substitute for government paper in many of these roles. In the US dollar market, participants became more comfortable using agency issues and swaps for benchmarking and hedging purposes. In the euro-denominated market, the adjustment to private benchmarks was less dramatic, given that investors had already become accustomed to using the euro swaps curve for pricing and hedging purposes. Moreover, the drop-off in government bond issuance was expected to be less steep.

A decrease in the liquidity premium during 2000 reflects this adjustment process. The autumn 1998 crisis had raised investors' concerns about liquidity risk and in turn contributed to large deviations of yields on individual government securities from a fitted yield curve (Graph VI.15). As measured by the size of these deviations, liquidity concerns reached a peak in the first quarter of 2000. As investors grew increasingly comfortable holding non-government debt and pricing and hedging such issues with instruments other than government bonds, this indicator declined in both the euro and US dollar markets. A significant step in the stabilisation of the liquidity premium in the US Treasury market was the ending of the anomalous inversion of 10-year and 30-year yields in September.

Interest rate swaps appear to be the leading candidate to replace government securities as the pre-eminent benchmark instrument. The notional



amount of outstanding interest rate swaps increased by 11% in 2000, to \$49 trillion (Graph VI.16). The swaps market in the euro legacy currencies was larger in notional terms than the market in dollars even before the introduction of the single currency. Since 1999, the market in euros has extended its lead over that in dollars, with swaps being used for hedging, price discovery and other purposes for which US Treasuries tended to be used in the dollar market. The dollar market is following the lead of the euro market, increasingly using swaps for hedging and other purposes. However, US Treasuries have yet to be clearly displaced as the dominant benchmark in the dollar segment.

Swaps gaining benchmark status ...

The ability of swaps to take on many of the functions formerly performed by government bonds has been supported by the gradual alleviation of certain concerns regarding credit risk. Dealers and customers have developed a set of collateralisation and documentation standards that appears to have gained wide acceptance in markets for swaps denominated in the core global currencies. By reducing the credit risk exposures associated with outstanding swap positions, these measures may have contributed to a decoupling of swap spreads and corporate credit spreads during 2000 and the first part of 2001.

... but dealers highly concentrated

Nevertheless, swaps markets have had to adjust to a steady decline in the amount of risk capital available to support trading as a result of mergers and reduced risk appetites among the large dealing institutions. This is evident in data for the second half of 2000, when inter-dealer activity in swaps declined even though total activity grew. As the number of active market-makers dwindles, it may become increasingly difficult for dealers to offset customer orders in the inter-dealer market. Such a development could in turn have a negative impact on the liquidity that swaps dealers can offer to customers.