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1. Overview: loss of confidence deepens and spreads

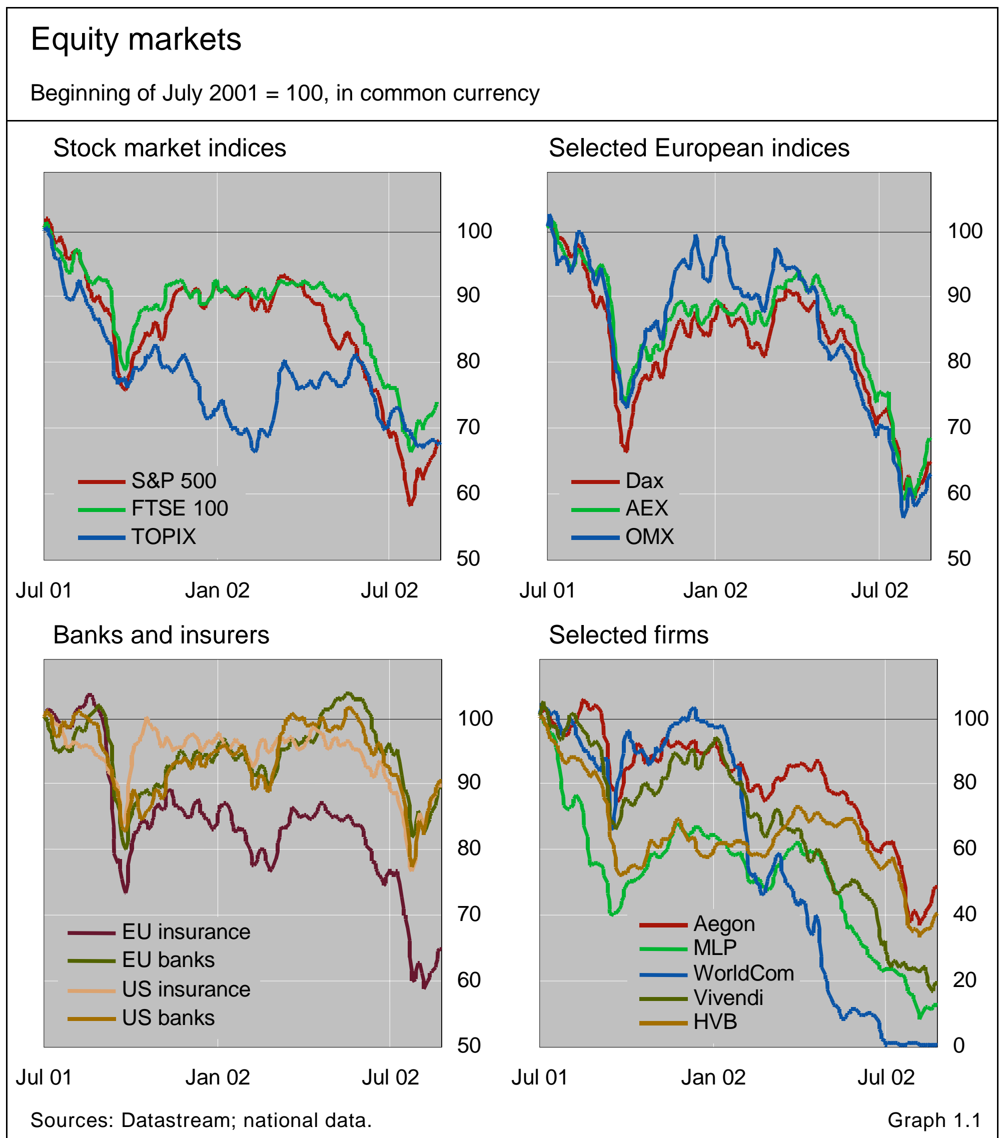
In the second quarter of 2002 and early in the third, global financial markets were buffeted by a series of disconcerting events that undermined investor confidence. The most significant event was a financial restatement in late June by WorldCom, a major US telecommunications firm. It was apparently the fear of more widespread corporate problems that deepened a slump in equity markets in July in both the United States and Europe. The negative sentiment even spilled over into the once resilient corporate bond market, where issuance slowed as credit spreads widened. In August, an absence of further bad news seemed to restore a degree of confidence. There were signs that investors were returning to the equity and corporate bond markets.

The financial sector did not fare as well in this latest bout of market weakness as it did in previous episodes. In July, share prices of European insurers fell below the levels reached in the wake of 11 September 2001. Banks in Europe and finance companies in the United States not only lost market value but also saw the credit spreads on their debt widen. For a time, even swap spreads began to reflect the concern of market participants over the counterparty risk of dealing with large US money centre banks. These developments threatened to constrain financial intermediation, possibly adding to the difficulties of non-financial firms in raising money.

Several emerging market countries found their domestic economic and political problems exacerbated by the global rise in risk aversion. Investors punished most those countries for which questions about the sustainability of debt burdens coincided with political uncertainty. At the same time, sovereign debt spreads tended to widen with those on low-rated corporate bonds. Nonetheless, while bond issuance by emerging market borrowers slowed in July, the stronger credits among them maintained access to the market.

Equity markets slump in crisis of confidence

Just when market participants seemed to be getting over the accounting revelations surrounding the collapse of Enron, investor confidence suffered a series of blows from a diverse set of disconcerting events. In late May and early June 2002, warnings about further terrorist attacks and rising political



Equity markets

Beginning of July 2001 = 100, in common currency

Sources: Datastream; national data.

Graph 1.1

tensions between India and Pakistan led to a sell-off in equity markets in the United States and Europe (Graph 1.1). While the Tokyo market escaped the price declines in May, reports in June about investigations by US authorities of computer memory manufacturers adversely affected Japanese technology shares and served as one of the events that hitched the market to its US and European counterparts. The most telling blow to investor confidence worldwide appeared to be a $3.8 billion financial restatement on 25 June by WorldCom, a large US telecommunications company. Within days, the US copier maker Xerox also restated its financial reports, while a French newspaper alleged that the media company Vivendi Universal had tried to inflate profits.

Company's restatement is the biggest blow to confidence

These various events set global equity markets on their steepest two-month decline since September 2001. Between 21 May and 23 July, the S&P 500 fell in local currency terms by 26%, the FTSE 100 by 26%, the Dax by 30% and the TOPIX by 11%. By the end of that period, prices in the US equity market had sunk to levels last seen in April 1997. The appreciation of the euro during the period made the losses from US stocks to euro area-based investors even greater. Nonetheless, the loss of confidence did not turn into panic.

Investors continued to differentiate between sectors, inflicting the greatest punishment on the telecommunications sector.

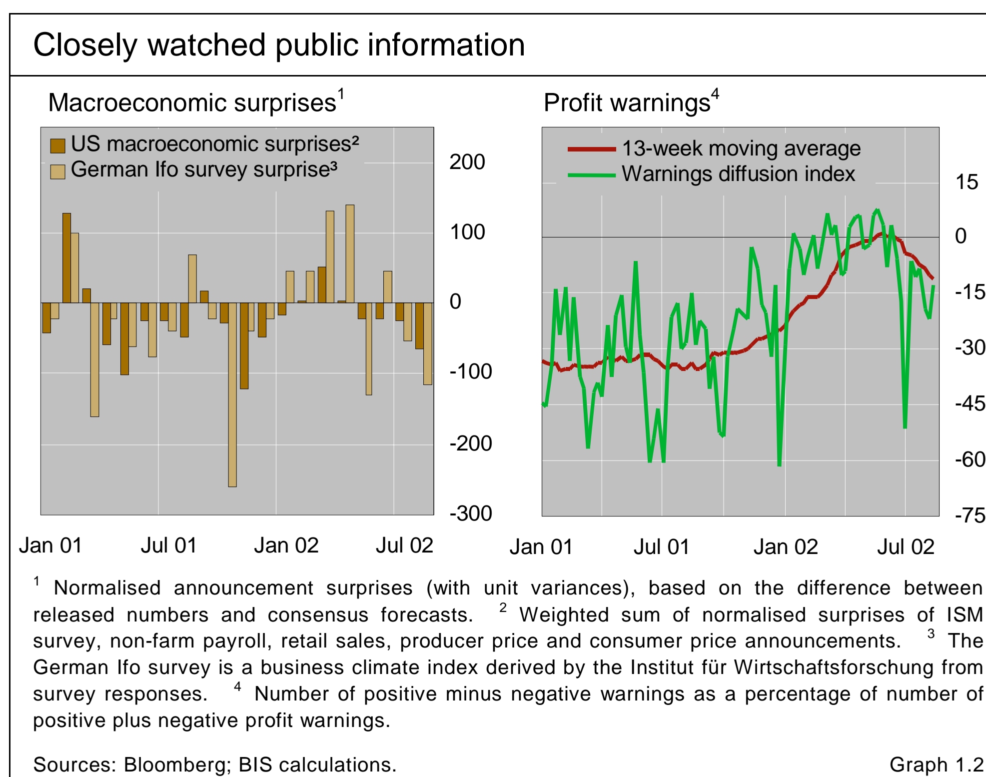
US and European investors react to a common fear

The equity market plunge in July was notable for the degree to which investors in European markets seemed to react in concert with those in US markets to what might have appeared to be largely US accounting events. For both classes of investors, the immediate reaction to the WorldCom restatement on 25 June was not particularly dramatic. In both cases, the steepest market declines took place on certain trading days between 10 July and 23 July, a period when the S&P 500 decreased by 13% and the Dax by 16%, and two other markets in Europe by even more: the Dutch AEX by 19% and the Swedish OMX by 17% (Graph 1.1). In July, unpleasant surprises did emerge about some European firms, including reports of large loan losses at the German bank HVB and a profit warning by the Dutch insurer Aegon. The day-to-day market movements would suggest that the loss of confidence by both American and European investors reflected a common fear of more widespread corporate problems. Each piece of bad news served to reinforce this fear, whether the news was about a US firm or a European one.

The financial sector is hit hard

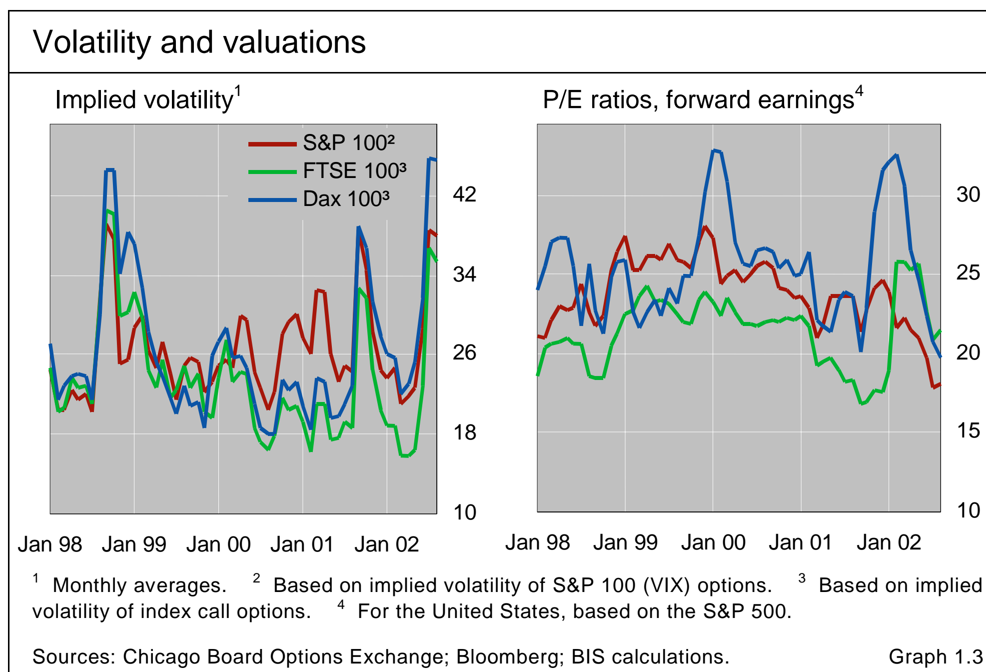
A significant aspect of the July episode was the fact that to a greater extent than before share prices indicated a loss of confidence in the financial sector. Without having fully recovered from claims arising from the 11 September terrorist attacks, share prices of European insurers fell below the levels reached in the wake of the attacks. This time, the losses came from the assets side of their balance sheets, with returns on their equity and corporate bond investments turning negative. Indeed, stop-loss selling by these insurers as solvency limits were reached reportedly contributed to the wider market declines. Banks in both Europe and the United States also suffered

Closely watched public information



[1] Normalised announcement surprises (with unit variances), based on the difference between released numbers and consensus forecasts. [2] Weighted sum of normalised surprises of ISM survey, non-farm payroll, retail sales, producer price and consumer price announcements. [3] The German Ifo survey is a business climate index derived by the Institut für Wirtschaftsforschung from survey responses. [4] Number of positive minus negative warnings as a percentage of number of positive plus negative profit warnings.

Sources: Bloomberg; BIS calculations. Graph 1.2



Volatility and valuations

[1] Monthly averages. [2] Based on implied volatility of S&P 100 (VIX) options. [3] Based on implied volatility of index call options. [4] For the United States, based on the S&P 500.

Sources: Chicago Board Options Exchange; Bloomberg; BIS calculations. Graph 1.3

considerable losses in market capitalisation (Graph 1.1), in part because of their exposures to Argentina and large corporate defaults. Among US banks, Citigroup and JP Morgan Chase saw their share prices drop in late July when they were called to testify before the US Congress about whether they had played a role in disguising Enron's debt.

US and European markets recover in August

In August, equity markets began to recover, albeit in a tentative fashion. At first, the markets slid as participants turned their attention back to data on the economy and corporate earnings. The data were less than encouraging. In particular, the US non-farm payrolls figure released on 2 August portrayed a surprisingly weak economy (Graph 1.2). The number of negative profit warnings had also started to rise again. The lack of further bad news during the rest of the month, however, seemed to bring reassurance. Investors also apparently took comfort from the swift action by business leaders, legislators and policymakers on the issue of corporate governance (see the box on the Sarbanes-Oxley Act on page 11). Significantly, 14 August – the date by which executives of the largest US publicly listed firms had to certify their financial statements – passed without incident. Between 24 July and 23 August, in terms of the euro, the S&P 500 rose by 14% and the Dax by 5%.

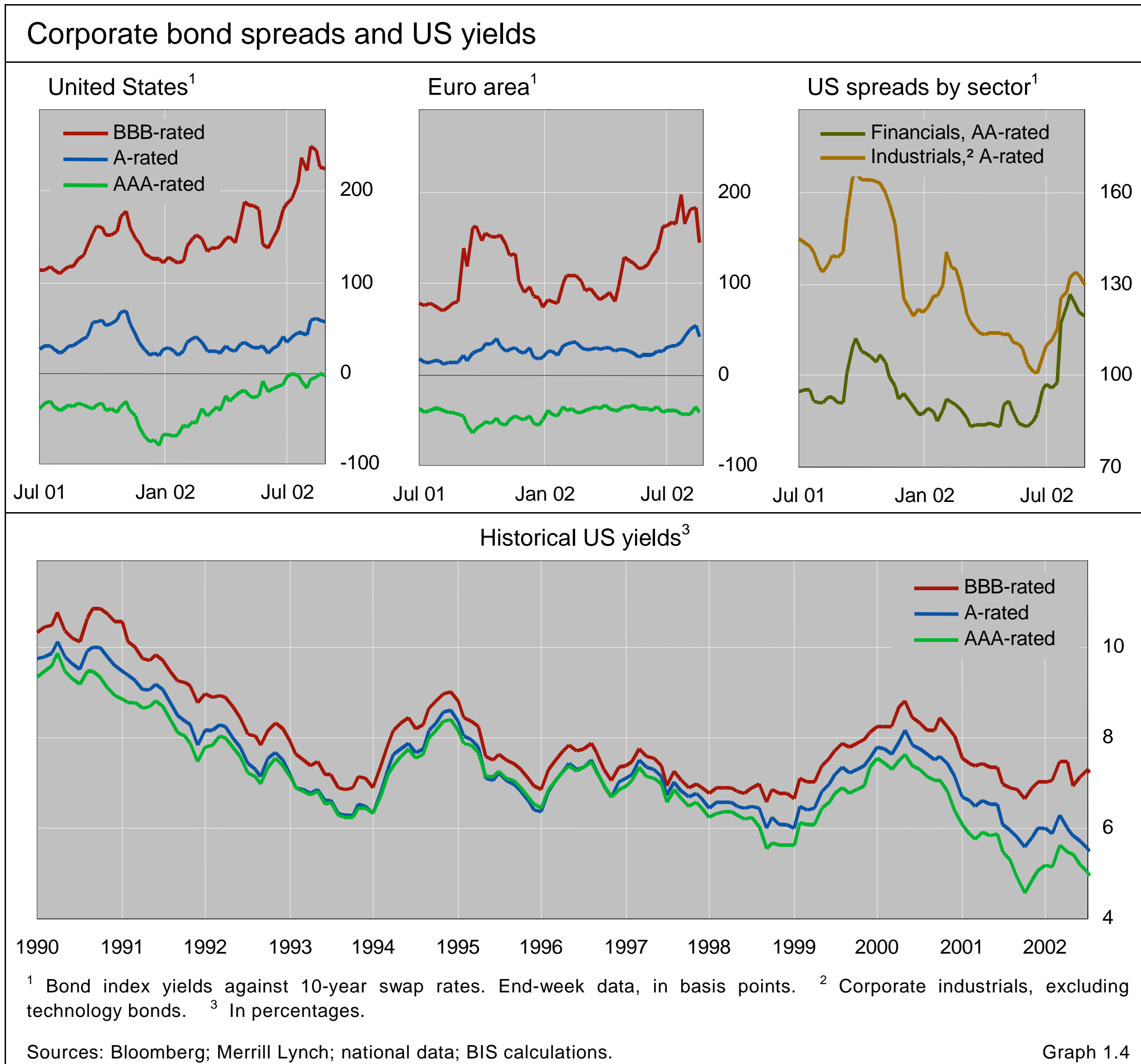
By August, valuations in terms of forecasted earnings had returned to ranges closer to historical averages. In June and July, these lower valuations had been driven largely by increases in the equity risk premium, which were also reflected in the heightened volatilities implied by prices of equity index options (Graph 1.3). Revisions in expectations about future earnings growth seemed to play less of a role in these valuation adjustments. To the extent that uncertainty about corporate accounting continues to subside, the risk premium is likely to decline and valuations to recover. However, for the S&P 500, for example, the one-year-ahead earnings estimates remain 50% above current earnings. It remains to be seen whether valuations will further adjust to changes in expectations about earnings growth.

The corporate bond market also succumbs

The once resilient corporate bond market joined the equity market in succumbing to a loss of confidence. For most of 2001 and early 2002, the corporate bond market had been the bright spot of the global financial system. Corporations unable to raise funds from banks or in equity and commercial paper markets had been able to tap the bond market, where investors had appeared unfazed by rising default rates and an increasing frequency of rating downgrades. Spreads on investment grade corporate bonds had largely narrowed over the period, even as equity markets had continued their descent.

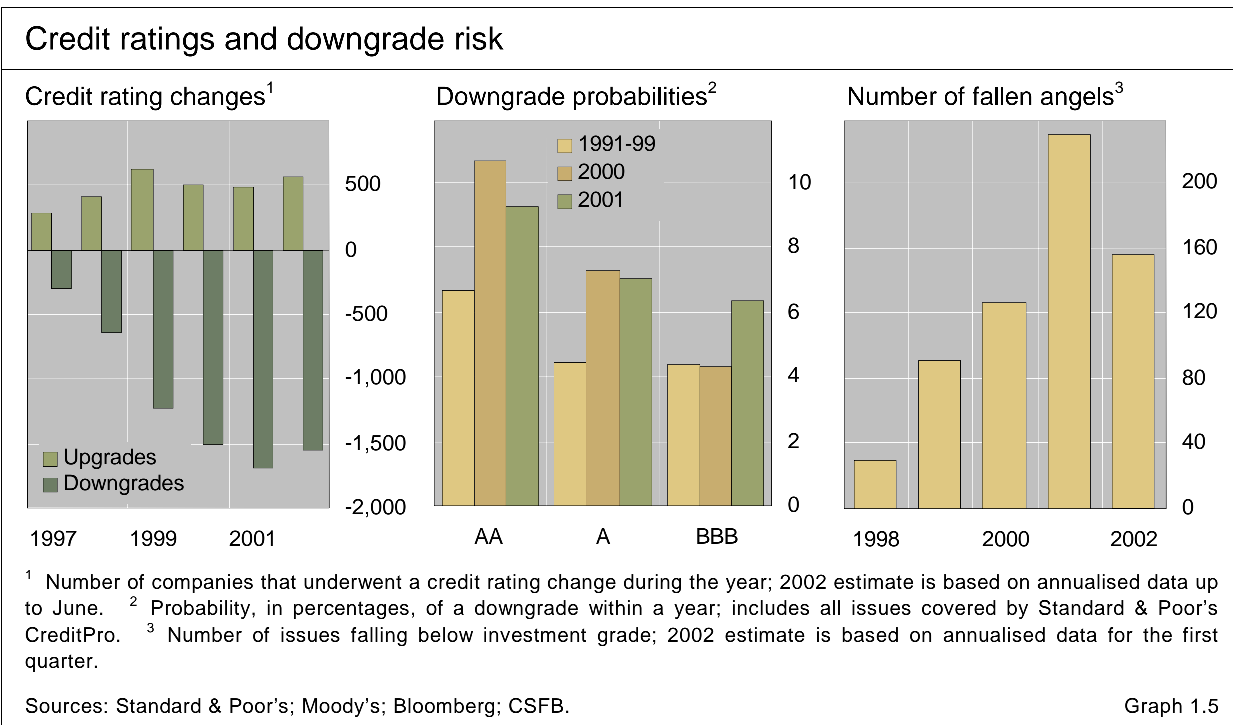
The price of credit risk rises sharply in July ...

The tone, however, began to change in February 2002, first with the revelations surrounding the collapse of Enron, and then more dramatically in July following the corporate governance improprieties noted above. In the US dollar market, spreads of triple-B rated bonds over swaps widened by 57 basis points from February to June 2002 and shot up a further 35 basis points in July alone (Graph 1.4). As indicated in "The international debt securities market" on page 23, international issuance of corporate bonds by US residents slackened



[1] Bond index yields against 10-year swap rates. End-week data, in basis points. [2] Corporate industrials, excluding technology bonds. [3] In percentages.

Sources: Bloomberg; Merrill Lynch; national data; BIS calculations. Graph 1.4



Credit ratings and downgrade risk

[1] Number of companies that underwent a credit rating change during the year; 2002 estimate is based on annualised data up to June. [2] Probability, in percentages, of a downgrade within a year; includes all issues covered by Standard & Poor's CreditPro. [3] Number of issues falling below investment grade; 2002 estimate is based on annualised data for the first quarter.

Sources: Standard & Poor's; Moody's; Bloomberg; CSFB. Graph 1.5

significantly during June and July. Corporate bond spreads for Europe, which had begun to rise gradually early in the year, also widened sharply in July, though the slowdown in issuance was less pronounced. As in the equity markets, August brought signs of a return of confidence, and the consequent narrowing of spreads promptly attracted borrowers back to the market.

... even with fewer downgrades

Ironically, corporate spreads started to widen at a time when the incidence of credit rating downgrades had begun to subside. The number of companies affected by debt downgrades from rating agencies had reached its peak in 2001 (Graph 1.5). In fact, downgrades by then tended to be concentrated in triple-B rated debt. Such downgrades had led to an unusual number of "fallen angels", debt issues that have lost their investment grade status. Until mid-2002, the risk appetite of investors in the corporate bond market had seemed largely unaffected by the losses from such downgrades. When triple-B spreads widened in June, the number of new fallen angels was apparently already declining. Investors in the market were evidently responding more to the general concerns about corporate governance that were weighing heavily on the equity markets than to downgrades and defaults.

Credit concerns spread to financial firms

Significantly, large financial institutions were among those worst hit by credit concerns, and this came at a time when the stock market was also weakening their equity capital. Throughout 2001 and early 2002, investors had focused credit concerns on telecommunications firms in both Europe and the United States. In mid-2002, however, they increasingly turned their attention to insurance companies and large banks. In Europe, some of these financial firms revealed surprisingly heavy losses on equity and corporate bond holdings. In the United States, investors were surprised by the exposure of banks to large bankruptcies. As a consequence, by July 2002 credit spreads on double-A rated financial institutions had become nearly as wide as those on single-A rated industrial firms (Graph 1.4). Since financial firms operate with high

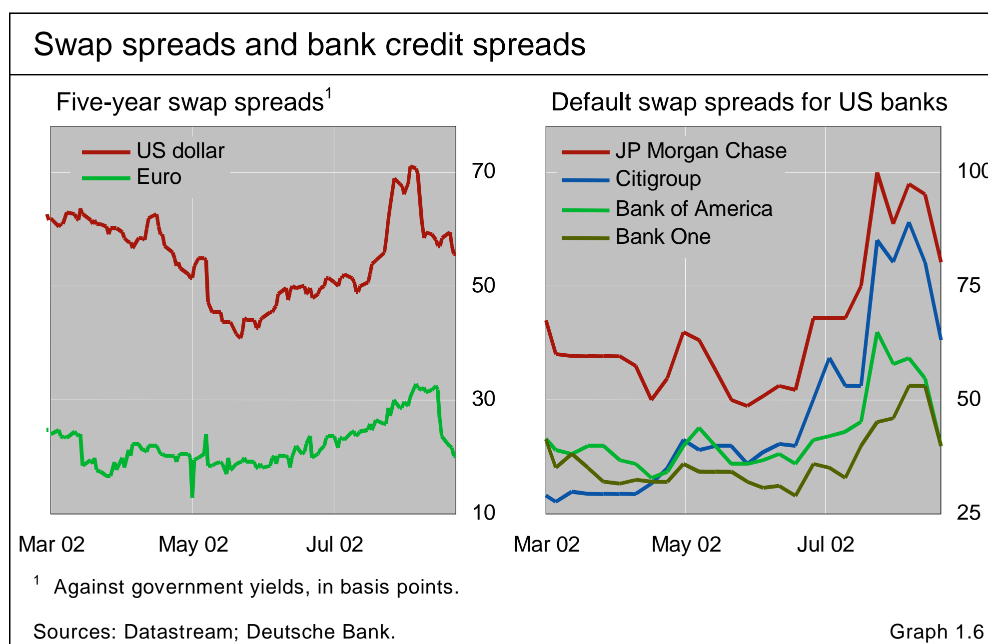
leverage and compete on the basis of narrow interest margins, the higher cost of funds following a downgrade can weaken their ability to profitably intermediate credit. In the past, downgraded US finance companies would try to recover their credit ratings by raising equity capital. This avenue, however, has recently been closed to them.

Counterparty risk returns

For a brief period, counterparty risk became a significant concern in the swap market. Spreads of US dollar swap yields over US Treasury yields widened sharply to reflect a perception of heightened risk in dealing with major US derivatives dealers. Such spreads had also widened in August and September 1999, but this had been driven largely by temporary liquidity pressures induced by a shift in hedging activity from US Treasury securities to swaps. During the fourth week of July 2002, five-year US dollar swap spreads widened by 20 basis points (Graph 1.6), a move that coincided with an intensification of investigations by the US Congress, Securities and Exchange Commission and Justice Department into the role of financial institutions in the financial dealings of Enron. Spreads on credit default swaps for US money centre banks rose during the same period, with those for the two banks under investigation widening the most. By August, swap spreads had returned to previous levels, although some default spreads remained relatively wide.

Even the ABCP market slows

Adding to the difficulties faced by borrowers in the corporate bond market, the market for asset-backed commercial paper (ABCP), which had been one of the last remaining resilient credit markets, began to shrink for the first time since its inception. The traditional CP market had already been contracting since 2001; downgrades and reluctance by banks to provide backup liquidity facilities had made borrowing difficult for firms with less than A1/P1 short-term debt ratings. As a market for collateralised instruments, the ABCP market had been immune to credit concerns. In 2002, however, moves by the US Financial



Swap spreads and bank credit spreads

[1] Against government yields, in basis points.

Sources: Datastream; Deutsche Bank. Graph 1.6

Accounting Standards Board to change the accounting consolidation rules for special purpose vehicles discouraged the major sponsors of ABCP from increasing the deals they undertook.

Risk aversion spreads to investors in emerging economies

Emerging markets are shaken by local events and risk aversion

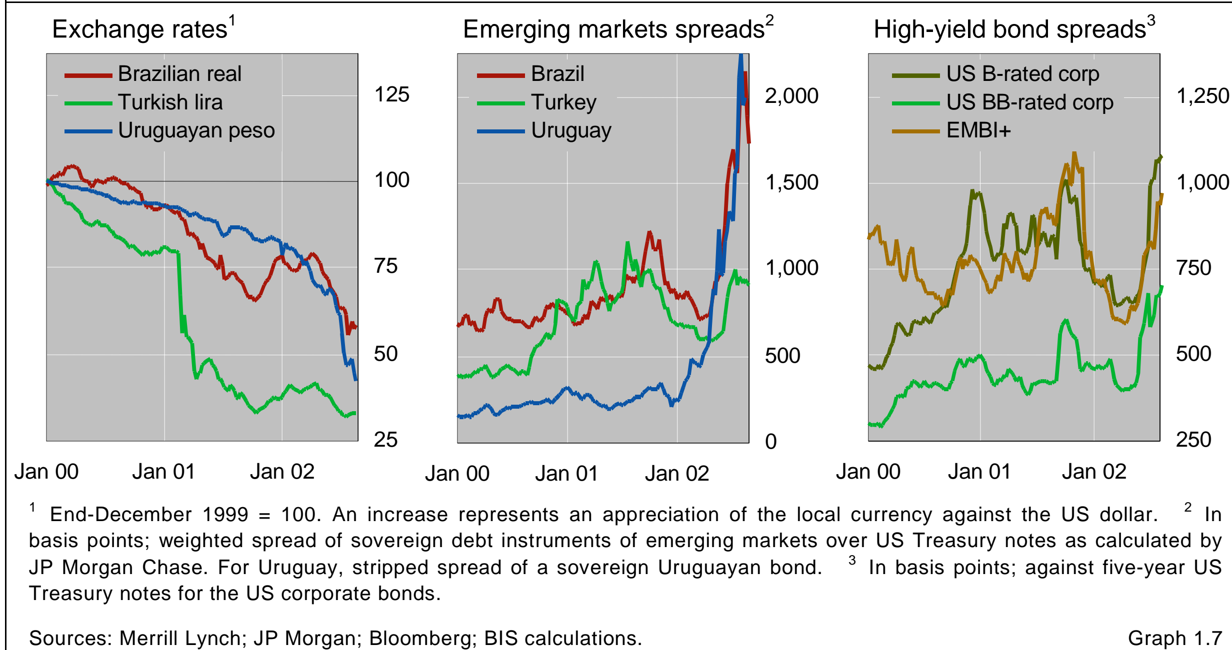
In tandem with the increase in spreads on US non-investment grade corporate bonds, sovereign spreads on emerging market debt rose markedly in June and July (Graph 1.7). Financial markets in several emerging market economies, most notably Brazil, were shaken by a combination of local events and increasing risk aversion among global investors. In Brazil and Turkey, political uncertainty coupled with mounting concerns over the sustainability of debt burdens weighed heavily on asset prices and the value of the currency. A banking crisis in Uruguay was precipitated by capital outflows as liquidity-constrained Argentines withdrew savings from their neighbour country's banks. The effect of these events was to raise risk premia throughout emerging markets, in particular among those countries with large fiscal deficits or heavy debt servicing requirements. Nevertheless, for many strong or improving credits, borrowing conditions remained favourable because wider spreads were offset by lower US dollar and euro yields.

Unease over the health of Turkey's prime minister and the abrupt resignation of several senior cabinet ministers led to a flight from Turkish assets in June and early July. The exchange value of the Turkish lira fell almost 15% over the period and the country's sovereign spread on its dollar-denominated debt rose by over 400 basis points to nearly 11%. A political compromise stabilised the current government, at least until elections in November, and a disbursement of promised IMF funds then stabilised the lira and Turkish debt prices.

Investors worry about Brazilian elections

Uncertainty over the upcoming presidential election in Brazil and the sustainability of the country's fiscal deficits brought Brazilian assets under similar pressure, but structural features of Brazil's sovereign debt worsened the problem. Investors started selling off Brazilian assets as the governing coalition's presidential candidate lost ground to candidates from other parties in national opinion polls. The sell-off forced down the exchange value of the Brazilian real and put upward pressure on the rates at which the government could refinance its domestic debt. With a large portion of the country's domestic debt indexed to the exchange value of the real, the size of the country's sovereign debt and servicing burden increased rapidly. A vicious circle soon developed, with the real losing half its value from mid-April to late July. The sovereign spread on Brazil's dollar-denominated debt nearly quadrupled over this period, to almost 2,400 basis points.

The announcement of an IMF loan package with a headline value of $30 billion brought some temporary respite to Brazil in early August. However, the back-loaded nature of the package and market scepticism over the ability of any of the current presidential candidates to meet its fiscal terms quickly reversed much of the post-announcement gains. Adding to the renewed



[1] End-December 1999 = 100. An increase represents an appreciation of the local currency against the US dollar. [2] In basis points; weighted spread of sovereign debt instruments of emerging markets over US Treasury notes as calculated by JP Morgan Chase. For Uruguay, stripped spread of a sovereign Uruguayan bond. [3] In basis points; against five-year US Treasury notes for the US corporate bonds.

Sources: Merrill Lynch; JP Morgan; Bloomberg; BIS calculations. Graph 1.7

pressure on Brazilian assets was a downgrade of its external credit rating by Moody's to B2, five notches below investment grade, a few days after the announcement of the IMF package. Towards the end of August, Brazilian spreads narrowed again on the back of growing support for the governing coalition's presidential candidate, the apparent stabilisation of the exchange rate and the global decline in risk aversion.

Contagion hits Uruguay

Neighbouring Uruguay was forced to close its banks in early August due to spillovers from events in Argentina. In June, Uruguay floated its currency as both the Argentine peso and Brazilian real tumbled to new lows. Uruguay's central bank reserves began to drop precipitously in July as Argentine depositors, unable to tap deposits in their own country, began to withdraw their savings from Uruguayan banks. Shortly thereafter, the United States made available an emergency $1.5 billion loan to be replaced by an IMF-led package.

Borrowing costs for higher-quality credits remain low

Reflecting the continued ability of investors to differentiate between emerging market borrowers, higher-quality credits were relatively less affected by contagion from Brazil. International bond and equity issuance out of non-Japan Asia was strong in the second quarter of 2002, boosted by the largest ever corporate bond from the region, a $2.7 billion issue by the Malaysian oil firm Petronas (see "The international debt securities market" on page 23). Issuance appears to have slowed early in the third quarter, but strong or improving credits maintained favourable access to international markets. While spreads widened modestly in July and August even for investment grade borrowers such as Korea, the large fall in US dollar and euro yields effectively reduced borrowing costs for many issuers. Moreover, markets were receptive to first-time issuers. Iran tapped the international bond market for the first time since the 1979 revolution, with the central bank raising €625 million at the end of July.

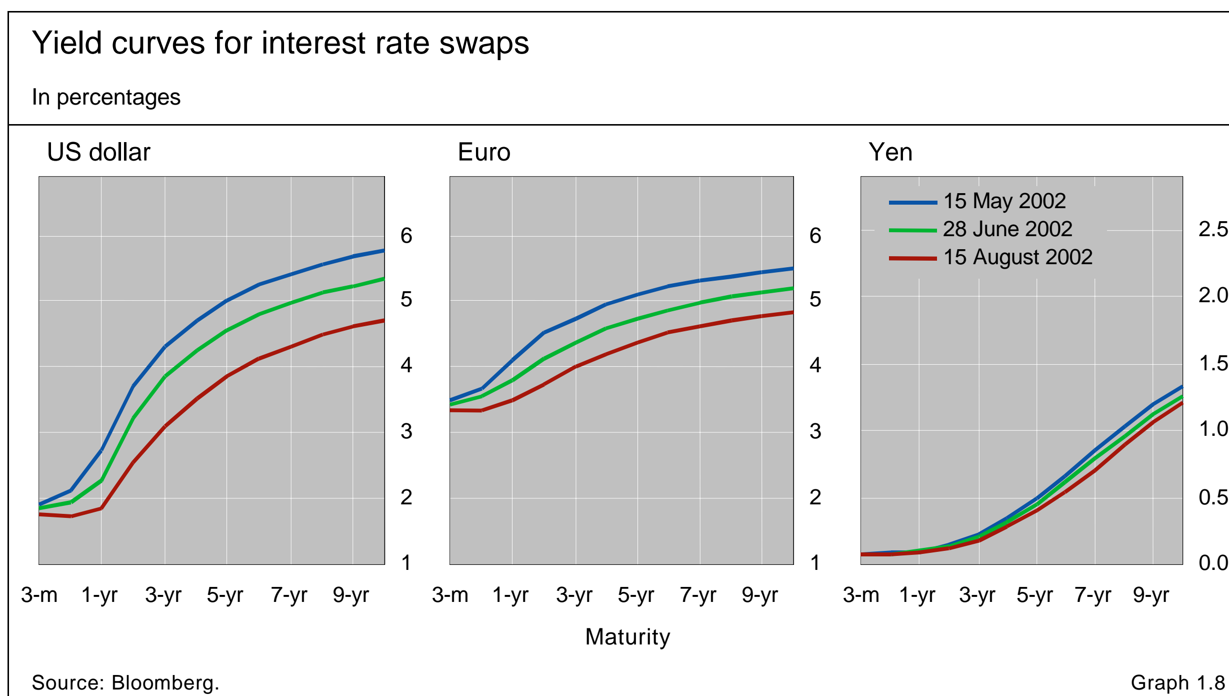
Yield curves indicate long-term optimism

Movements in yield curves indicated increased pessimism about the near-term prospects of the global economy. In June and July, while investors in the equity and corporate bond markets were focusing on event risk, investors who take positions on movements in yield curves continued to pay attention to data on the underlying economy. The data showed quite a reversal between the early months of the year and the summer months, turning high hopes for a strong recovery into concerns about a possible "double dip" in real activity. The data disappointments culminated in a weak preliminary US GDP estimate for the second quarter announced on 31 July and a surprisingly negligible US non-farm payrolls figure released on 2 August. While swap yield curves had remained relatively stable until mid-May, they shifted down significantly between then and mid-August (Graph 1.8). With investors watching US data more closely, the shift in the US dollar curve was more pronounced than that in the euro curve. Meanwhile, a lack of movement in the yen curve suggested largely unchanged expectations about the Japanese economy.

Yield curves shift down on disappointing data

The shapes of the US dollar and euro yield curves near the short end showed a reversal of expectations about monetary policy. Early in the year, relatively steep slopes at short maturities had indicated expectations of likely increases in policy rates. By August, these slopes had become unusually flat, pricing in expectations of monetary easing rather than tightening. The Federal Open Market Committee (FOMC) meeting on 13 August was an unusually anxiously awaited event for what it would reveal about the course of US monetary policy. In the event, the FOMC decided not to lower the policy rate just then. A day later, the yield on two-year US dollar swaps fell to 2.3%, its historically lowest point, with market participants seemingly convinced that the

Expected monetary easing flattens the curves at the short end ...



Source: Bloomberg.
Graph 1.8

Federal Reserve would cut rates before the end of 2002. In Europe, the rising exchange value of the euro helped to allay market concerns that the ECB might raise rates in the near future.

... while longer-term optimism keeps them steep at longer maturities

Even as market participants became more sceptical about the chances for near-term economic recovery, they seemed to harbour optimism about longer-term prospects. The slopes of the US dollar and euro yield curves beyond the one-year maturity remained relatively steep. While a decline in long-term yields immediately after the FOMC meeting in August implied that market participants were initially disappointed at the lack of a rate cut, these yields rose sharply two days later to reflect a more positive assessment. As of mid-August, the differential between 10-year and one-year yields stood at 281 basis points for US dollar swaps and 135 basis points for euro swaps. The flatness of the curves near the short end and their steepness at longer maturities indicated a belief that the expected monetary easing would be sufficient to support a robust recovery down the road.

Keeping the record straight: the Sarbanes-Oxley Act of 2002

On 30 July, the Sarbanes-Oxley Act of 2002 was signed into law in the United States. The Act represents a response to the series of accounting irregularities that have shaken the confidence of investors in US stock markets. Its main objectives are to ensure the provision of timely and reliable corporate information to investors, to improve the accountability of corporate officers and to promote the independence of audit systems. The passage of the law recognises the importance of sound information about individual firms for the proper functioning of markets in the allocation of capital.[1]

The Act makes far-reaching changes to the existing legislation and introduces a number of new requirements that are applicable to the executive boards and managements of US public companies. It will have profound implications for companies listed on US markets and for a number of professions. The US Securities and Exchange Commission (SEC) will be responsible for enforcement of the new rules. This note summarises the main elements of the new law.[2]

Public disclosure. The Act emphasises that financial statements filed with the SEC will have to present fairly the financial condition and operational results of listed companies (including all material accounting adjustments made in accordance with Generally Accepted Accounting Principles (GAAP) and/or rules and regulations of the SEC). One of the most significant provisions requires the chief executive officer (CEO) and chief financial officer (CFO) to certify each annual and quarterly financial report filed with the SEC.[3] Their signatures will indicate that they have reviewed the report and that it presents fairly the financial conditions and operational results of the company and fully complies with the relevant provisions of the Securities Exchange Act of 1934. A new criminal law will subject to fines and/or imprisonment any CEO or CFO who knowingly certifies a non-complying or false report.

Regulation of trading and other activities by corporate officers and directors. Company insiders will now be required to report any changes in their ownership of their firms' shares within two business days of a transaction. Companies will also be prohibited, with limited exemptions, from lending company funds to any of their directors or executive officers.

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[1] See Chapter VI in Bank for International Settlements, *72nd Annual Report*, July 2002, Basel. [2] This note draws in part on the Wilmer, Cutler and Pickering newsletter *Corporate and Securities Law Developments*, 31 July 2002. [3] All of the 14,000 firms listed on US stock markets had until 29 August to certify their accounts.

Audit committees. The new legislation stipulates that the audit committees of companies should be comprised solely of independent members of the board (ie that such members should not accept any advisory or consulting fees or be affiliated with persons related to the companies). Moreover, the law will also require audit committees to have direct responsibility for the appointment and overseeing of auditors and for the establishment of procedures for receiving and dealing with complaints related to accounting (including anonymous employee submissions regarding questionable accounting matters). Audit committees will also have authority to hire independent counsel and advisers to carry out their duties.

Auditor independence and obligations. Auditing firms will have to comply with a number of obligations in order to be able to certify a company's financial statement. These include a prohibition on the provision to the audited firms of certain non-auditing services, such as bookkeeping, the design of financial information systems, actuarial services, investment advice and legal services. Moreover, the lead auditor will not be able to perform audit services for a given firm for more than five consecutive fiscal years.

New criminal penalties and strengthening of existing ones. The Act creates several new criminal offences that are penalised by fines and/or prison terms. These offences include the knowing or wilful certification of non-complying or inaccurate financial statements, fraud related to a public company's securities and the destruction or alteration of records with intent to impede any investigation by a federal government agency. The Act also increases existing penalties for corporate crimes and fraud. Moreover, corporate retaliation or harmful action against "whistleblowers" will become a crime punishable by imprisonment.

Other provisions of the Act. The Act also creates the Public Company Accounting Oversight Board (PCAOB), giving it extensive powers to set professional standards and regulate the conduct of audits by accounting firms, subject to ultimate SEC oversight. The PCAOB will also be charged with considering whether GAAP should be changed from a rules-based system to a principles-based one and will study several accounting-related topics, such as special purpose entities. The Act also directs the SEC to address conflicts of interest by security analysts.[④]

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[④] In May 2002, the SEC had already approved proposals made by the National Association of Securities Dealers and the New York Stock Exchange to address such conflicts. The new rules will require institutions to disclose both the distribution of their ratings (ie "buy", "sell" or "hold") and investment banking relationships with rated firms, and will ensure the segregation of their research and investment banking functions. The SEC may introduce additional rules after the completion of an enquiry on market practices.