VI. Financial markets

Highlights

Financial markets exhibited remarkable resilience in the face of severe tests during the period under review. Markets had to cope with an abrupt global economic slowdown, the terrorist attacks in the United States on 11 September 2001 and revelations surrounding Enron's failure. Despite these events, market conditions remained orderly and any disruptions in market functioning proved temporary. Equity prices slowly came to terms with the slowdown. The sharp drop in prices following the September attacks was quickly reversed, and towards the end of 2001 stock markets worldwide rallied on new confidence in a strong recovery. Corporate debt markets showed even greater resilience. Credit spreads, including those on emerging market debt, narrowed during the course of the year, a trend interrupted only briefly by the 11 September events. Significantly, bond markets remained receptive to issues from corporate borrowers, even from those turned away by the commercial paper market.

Amid the signs of resilience, however, were seeds of concern. Notwithstanding the correction that had begun in early 2000, stock valuations stayed high relative to current earnings. In the first few months of 2002, the accounting problems at Enron and related developments began to cause investors to question the integrity of information supporting financial markets. The fallout from Enron extended to the US commercial paper market, which closed its doors to all but the most creditworthy borrowers. Events in Argentina had only a limited impact on other emerging economies in 2001 and early 2002, but external financing conditions remained fragile for many lower-grade sovereign borrowers. Finally, the dominance of over-the-counter derivatives markets by a few dealers posed concentration risks.

Market functioning

Markets proved resilient to severe tests

Among the events that severely tested markets' resilience during the period under review, two stand out: the terrorist attacks in the United States on 11 September 2001 and the collapse of Enron in December. Markets functioned remarkably well in the immediate aftermath of the terrorist attacks. Despite the devastation wrought in downtown Manhattan, where many financial institutions, market infrastructures and communications systems are located, interruptions in trading and capital-raising activities were only temporary and markets returned to normal relatively quickly. The demise of Enron, while less dramatic than the events of 11 September, was perhaps more damaging to market confidence in that it called into question the quality of market information about individual corporations.

Disruptions after 11 September

The terrorist attacks led to major disruptions …

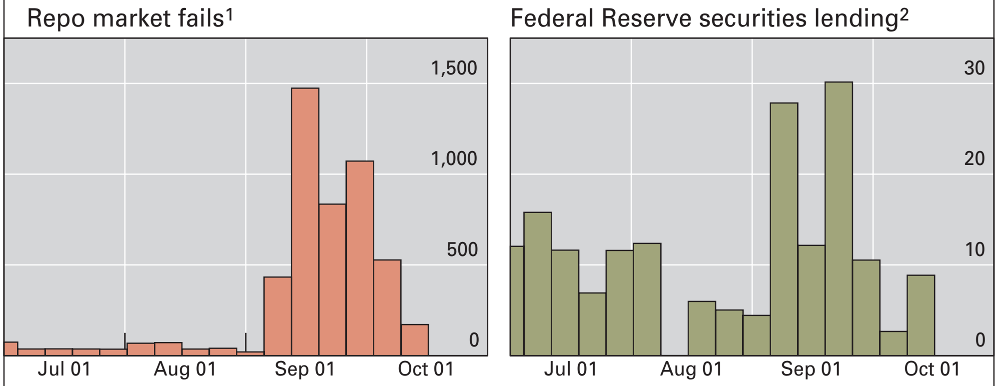
The terrorist attacks on 11 September and the consequent loss of life and damage to infrastructure in New York led to major disruptions in US financial markets. The New York Stock Exchange closed for four trading days, its longest closure since the 1930s. US Treasury cash and repo markets were particularly hard hit because of the losses suffered by several inter-dealer brokers, damage to communications links and the dislocation of a major clearing bank from its primary operating facilities. Together, these problems prevented the settlement of billions of dollars' worth of repo transactions for a few days following the attacks. This led to an unprecedented rise in the number of "failed" transactions in Treasury cash and repo markets (Graph VI.1), which in turn boosted demand for specific Treasury securities, in particular the most recently issued notes.

… but policymakers and market participants were quick to respond

Policymakers and market participants were quick to respond. The US Federal Reserve injected large amounts of liquidity into the banking system and reduced its federal funds target rate when US equity markets reopened on 17 September. The Federal Reserve also took a number of steps to address difficulties in the repo market, including relaxing restrictions on its securities lending facility. By the end of September, the Federal Reserve had lent \$70 billion in securities, taking as collateral securities for which there was less demand. Other central banks lowered their policy rates, and some arranged swaps with the Federal Reserve to ease concerns about a shortage of dollars available to foreign financial institutions. Market participants extended settlement hours and cooperated in various other ways to facilitate the distribution of liquidity.

All of these efforts were greatly aided by the contingency plans made two years earlier in preparation for Year 2000-related computer problems. An oversight in these plans, however, was the failure to test backup-to-backup communications systems. Some market participants had assumed that even if their own systems failed, those of their counterparties would not. Some did

Impact of 11 September on the US money market
In billions of US dollars



[1] Weekly value of securities that failed to be delivered to or by dealers in repo markets. [2] Weekly par value of securities lent by the Federal Reserve Bank of New York.

Source: Federal Reserve Bank of New York. Graph VI.1

not even have their counterparties' backup contact information at their own secondary facilities. Furthermore, many participants' telephone lines to their backup facilities were routed through the same switching centre as their primary telephone lines – at the World Trade Center. The loss of communications links interrupted the trading and clearing process for several days. However, initiatives by participants – including a sharing of resources – and feverish work by utilities limited the extent of the disruption.

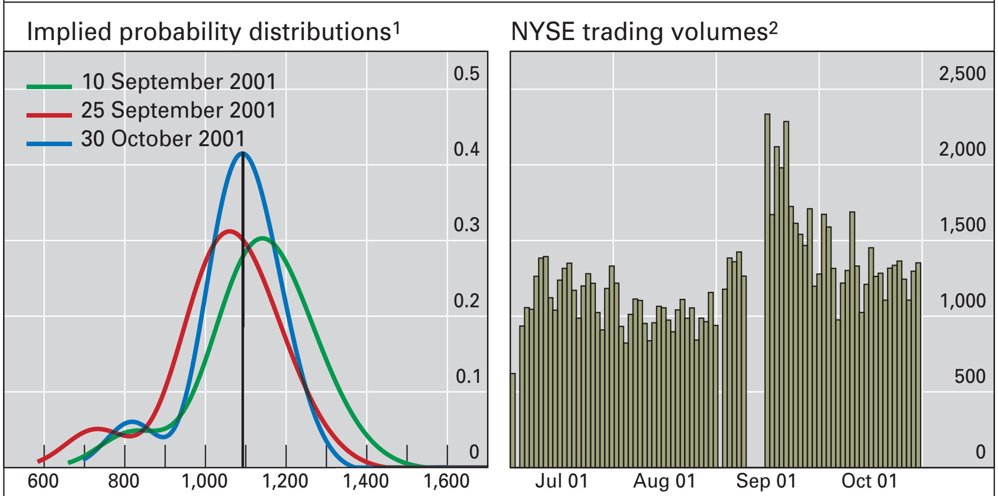
A failure to test backup-to-backup links

The attacks exacerbated fears of a severe downward correction in equity prices. Before 11 September, the near-term distribution of stock returns implied by the prices of equity index options was already somewhat skewed towards the probability of a large decline in prices (Graph VI.2). The perceived likelihood of such a decline increased markedly immediately following the September events and persisted into early October. After stock prices began to recover, the probability distribution narrowed, suggesting a lower overall level of uncertainty, although option prices still showed some skewness towards a significant price decline.

The release of selling pressure that had built up during the days on which US stock exchanges were closed resulted in unprecedented trading volumes when they reopened (Graph VI.2). However, trading did not overwhelm the capacity of the exchanges. Most other markets were also functioning more or less normally again within a week of the attacks. The intraday volatility of the federal funds rate remained exceptionally high into October, but the effective rate was never much above target. Normal market functioning returned last to the repo market, where high levels of failed transactions persisted into October. Indeed, the number of failed trades mounted in the weeks immediately following the attacks because of a shortage of on-the-run issues, which are used as collateral. The situation began to improve on 4 October, when the US Treasury sold additional amounts of the on-the-run

Normal market functioning returned last to the repo market

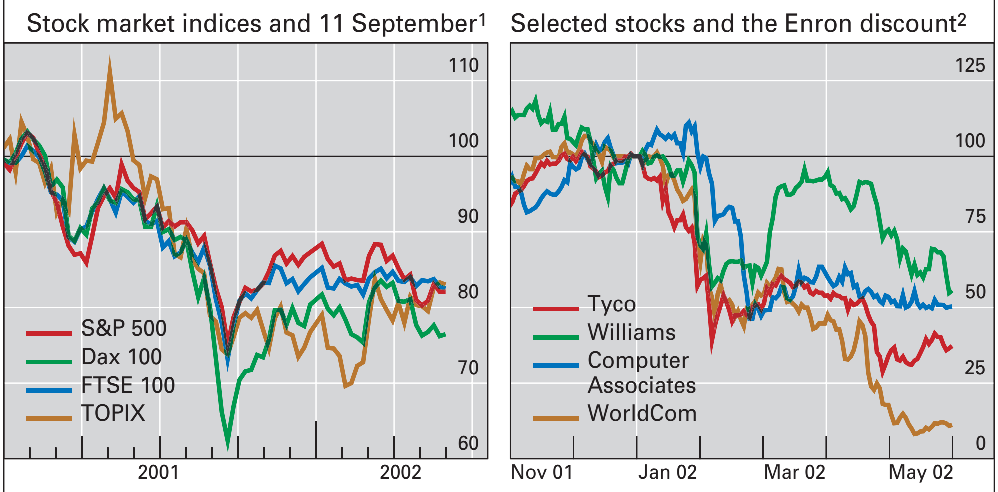
Impact of 11 September on US equity markets



[1] Risk neutral densities based on options on the S&P 500 Index traded on the dates shown. The vertical line indicates the level of the index on 10 September. [2] Daily, in millions of shares.

Sources: Bloomberg; Chicago Mercantile Exchange; BIS calculations. Graph VI.2

Stock prices around two shocks



[1] At end-week; end-December 2000 = 100. [2] Daily; end-December 2001 = 100.

Sources: Bloomberg; Datastream. Graph VI.3

10-year note through an unscheduled auction. By mid-October, the rate of repo market fails had dropped to moderate levels.

The backlash from Enron

The collapse of Enron did not in itself disrupt energy markets

Enron Corporation, one of the largest traders in energy markets, filed for bankruptcy protection in December 2001. In contrast to 11 September, the immediate impact of Enron's collapse on the stability and liquidity of the markets in which it had been active was, by most reports, insignificant. Trading quickly shifted from Enron to its rivals. Many firms reported losses on their exposures to Enron. However, owing in large part to improvements in counterparty risk management in recent years and the development of credit derivatives markets, these losses were manageable and did not threaten the solvency of other firms. Indeed, the successful use of credit-linked notes and other credit derivatives to hedge exposures to Enron, and the smooth settlement of the majority of these contracts, actually strengthened market participants' interest in such instruments.

Different layers of governance failed together

A striking feature of the circumstances behind Enron's collapse was how different components of corporate governance all seemed to fail at the same time. The company's board of directors, the external auditor, stock analysts, credit rating agencies, creditors and investors jointly failed to critically assess how Enron's management achieved ostensibly superior earnings growth. In particular, few asked hard questions about the nature of numerous off-balance sheet transactions, transactions which helped to hide mounting business losses.

The simultaneous failure of the various components of corporate governance points to a common driving factor. This factor is the tendency for conflicts of interest in the information process to intensify when an individual firm or the market as a whole displays superior performance. Modern markets have devised a system of checks and balances to protect the integrity of the information process (see the concluding section of this chapter). In the case of Enron, this system broke down. Significantly, the equity market's reaction to the firm's bankruptcy in early December was not nearly as severe as the reaction in late January to news that Enron's auditing firm had shredded documents, or the response in early February to a report detailing Enron's use of partnerships and special purpose vehicles to inflate earnings and hide losses. As a consequence, stock prices started to incorporate a discount for accounting risks, and the market punished especially the stocks of large firms with relatively opaque financial reports (Graph VI.3, right-hand panel).

The market reacted to the scandal that followed

Equity markets

For most of 2001, equity investors showed an abiding optimism, first tending to play down the evidence of a global slowdown and then eagerly anticipating a strong recovery. While shifting views about the length and depth of the slowdown and its consequences for corporate earnings caused market prices to rise and fall (Graph VI.3, left-hand panel), on balance a high degree of confidence still prevailed. Confidence was fed in large part by a belief in the effectiveness of monetary policy. Yet it was not macroeconomics but accounting that eventually undermined confidence. In the early months of 2002, heightened scepticism about the reliability of corporate financial disclosures following the collapse of Enron exacerbated uncertainty about equity valuations. Nonetheless, market valuations relative to earnings reached unprecedented levels in early 2002. Given both a plunge in earnings due to one-time writedowns and a rise in equity risk premia due to uncertainties about financial statements, the valuations indicated a stubborn core of optimism about future earnings growth.

Coming to terms with the business cycle

The slowdown did not sink in until the summer

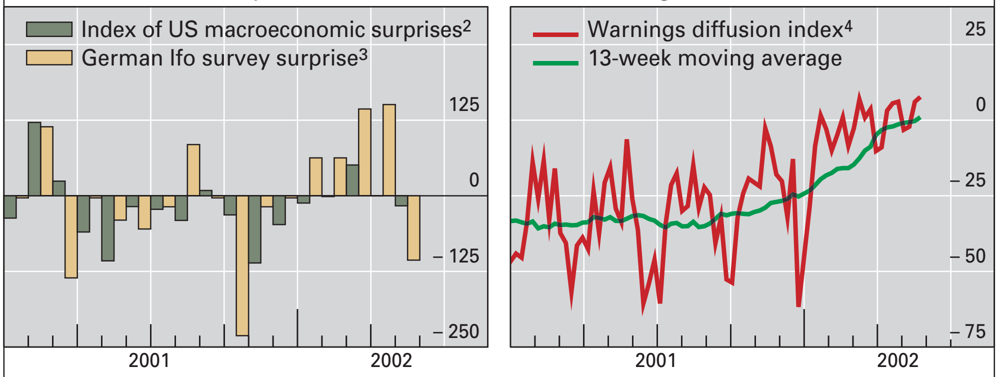
The equity market was slow to come to terms with the global economic downturn. After a year-long correction, the market staged a rally in April 2001 largely on the strength of a belief that monetary easing would forestall a recession. During the summer, worsening macroeconomic conditions and a string of disappointing corporate earnings reports finally convinced investors that the slowdown was real and that the corporate sector would not be spared (Graph VI.4). The technology sectors were again badly hit, both because their earlier valuations had been more excessive than those of other sectors (see the *71st Annual Report*) and because of surprisingly large writedowns. There was initially some confidence that Europe would not be as badly affected as North America, but this view was dispelled by disappointing data releases, particularly the German Ifo surveys during the summer months. As a result, European equity markets remained closely correlated with those in the United States throughout the period under review.

Prices reached their low in late September

Market indices reached their lowest point in the two weeks following the 11 September attacks in the United States. At first, the events compounded fears of a prolonged global slowdown and caused a broad-based flight to safe assets. Yet equity prices started to recover within a week after markets in New

Closely watched public information

Macroeconomic surprises[1] | Profit warnings



[1] Normalised announcement surprises (with unit variances), based on the difference between released numbers and consensus forecasts. [2] Weighted average of normalised surprises of the ISM survey, non-farm payrolls, retail sales and 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 surprises as a percentage of number of positive plus negative profit warnings.

Sources: Bloomberg; BIS calculations. Graph VI.4

York had reopened. Investors were encouraged by the globally coordinated easing of monetary policy, as well as by favourable political developments. The attacks, in other words, turned out to have created only temporary uncertainty, albeit to an extreme degree, with much of this uncertainty having dissipated soon after markets started to operate again.

Markets then rallied in spite of negative macroeconomic surprises …

A further shift in market sentiment appears to have occurred in October, when the rebound of a resilient market turned into a rally that lasted until the year-end. Markets started to price in a strong recovery in spite of the mostly negative surprises in closely watched macroeconomic announcements. Investors seemed reassured by prompt monetary easing, by the fact that most macroeconomic indicators were not getting worse and by news that US GDP had grown slightly in the fourth quarter. Military successes by the anti-Taliban coalition in Afghanistan allayed fears that the conflict in that country would be lengthy and destabilising. Profit warnings from corporations in the first quarter of 2002, in contrast to most of 2001, tended to be more evenly balanced between positive and negative surprises relative to analyst forecasts.

… but revelations about Enron shook investors in early 2002

Paradoxically, it was when data on the global outlook started to turn positive that the equity market began to falter again. In January and February 2002, revelations about inaccuracies in the public financial statements of several prominent corporations engendered wide scepticism about the integrity of corporate disclosures, thereby shaking the confidence of market participants and helping to bring the rally to a halt. While Enron's accounting practices were perhaps the most egregious, that firm was not alone in its attempts to manage reported earnings. For example, the bankruptcy of Global Crossing in December put the spotlight on the practice of using barter agreements on telecommunications capacity to artificially inflate reported revenues. Investors reacted with a broad equity market sell-off, contributing to declines in most major indices in late January and early February.

In Japan, valuations were strongly influenced by the weak domestic financial sector and a perceived lack of progress in reform efforts. The decline in the main Japanese equity indices from May to September, while parallel with falls in other global markets, was far sharper. The *Tankan* survey released in July showed a surprisingly weak economy, and subsequent news about the worsening global outlook seemed to bring more gloom to Tokyo than to other major markets. After September, Japanese equity markets did not join in the global market rally, and the Nikkei index reached an 18-year low in early February 2002. Ironically, the failure of a large construction firm at the end of the month may have triggered the market's rally in March. Investors had expected the firm to be bailed out and perhaps took its bankruptcy as a signal that serious efforts at corporate and financial restructuring would soon follow.

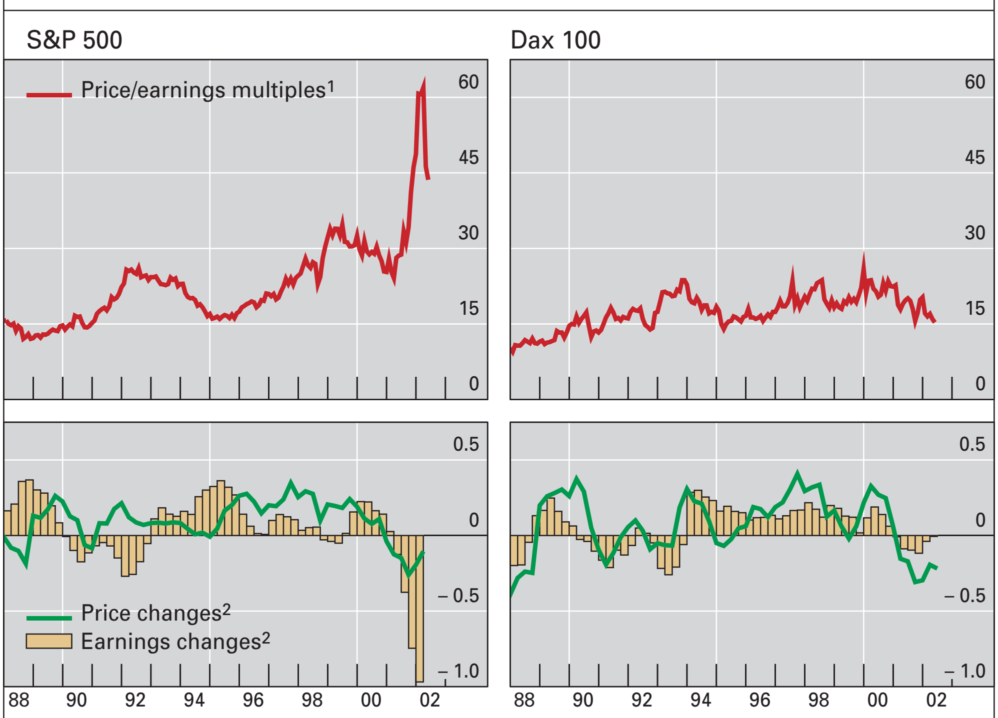
Japanese equities did not join the global rally

Enduring optimism amid high volatility

Notwithstanding the extraordinary correction that had taken place since April 2000, stock prices continued to be buoyed by expectations of high growth rates in earnings. Relative to historical levels, US price/earnings multiples remained very high during 2001, with earnings dropping further than prices (Graph VI.5). European multiples were more moderate, with stock prices falling by more than US stock prices and earnings declining by less. The high multiples reflected in part the low level of real interest rates, but also expectations of higher earnings, as stock prices tend to anticipate a recovery in earnings towards the end of a recession. For example, price/earnings multiples had risen in the United States in 1991–92 and in

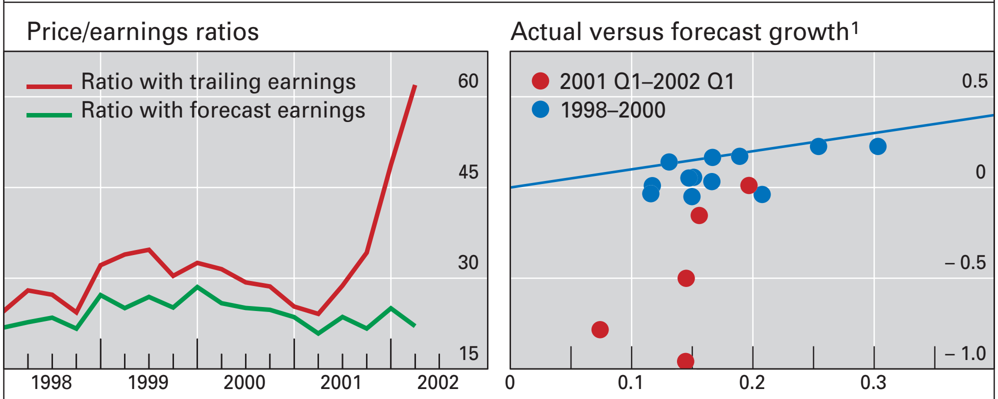
High valuations persisted

Stock markets: prices and earnings



¹ At month-end. ² Quarterly averages of annual log changes.
Sources: Bloomberg; Datastream; BIS calculations. Graph VI.5

Actual and forecast earnings for the S&P 500 Index



[1] The x-axis measures the forecast change over four quarters in log earnings and the y-axis the actual change in log earnings. Values on the blue 45° line represent accurate forecasts, while values well below the line represent overly optimistic forecasts.

Sources: Bloomberg; BIS calculations. Graph VI.6

Germany in 1993. The levels reached by US multiples in 2001 and 2002, however, are unprecedented. At the end of 2001, the S&P 500 Index was trading at 49 times earnings, more than three times the 1970–95 average of 14. This multiple reached 62 at the end of March 2002.

Earnings fell sharply due to one-time writedowns ...

The high US multiples also reflected a number of unprecedented one-time writedowns of asset values, which caused accounting measures of net income to plunge. During 2001, even firms with more or less healthy balance sheets and profit outlooks decided to acknowledge that a substantial portion of their past investments, most prominently the many acquisitions financed by exchanges of common stock, had proved to be expensive failures. Accordingly, some investors focused on forward-looking measures such as cash flow or operating earnings per share, rather than accounting measures of income that incorporated asset write-offs. Relying on these measures involved an implicit assumption that similarly poor investment decisions would be less likely in the future. Price/earnings multiples based on forecast earnings, which incorporated expectations of a strong recovery in profits, were more moderate than those based on past earnings (Graph VI.6).

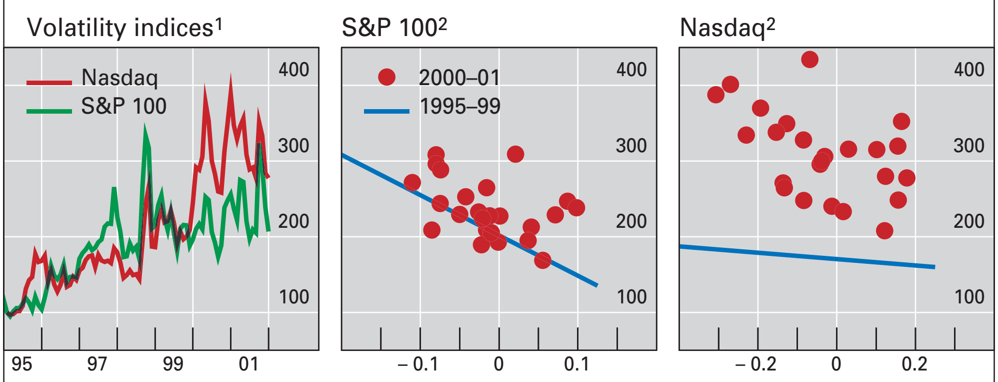
... but valuations remained high for other reasons

Yet these multiples, too, were high relative to historical experience, considering both the level of real interest rates and the likely risk premium introduced by Enron-related problems of information. Moreover, actual earnings growth has tended to fall below forecasts in recent years. After a bull market in which earnings were seemingly often managed so as to surpass forecasts slightly, such earnings management could apparently not be sustained in 2001 and early 2002.

Perceived risks rose even when markets were strong

Uncertainty about valuations, combined with a tendency by market participants to react sharply to even small pieces of good or bad news, resulted in a high degree of day-to-day volatility in equity markets. In April 2001, for example, the news that Dell Computer Corporation would meet its much reduced earnings estimate sent the Nasdaq Composite soaring by 9% and the MSCI World Index by 3% in a single day. The levels of volatility implied by the

Volatilities and returns



[1] Based on implied volatility of Nasdaq and S&P 100 options; monthly averages, January 1995 = 100. [2] Monthly returns based on end-month log changes (x-axis) and end-month volatilities implied by index options (January 1995 = 100; y-axis). The line represents a regression fitted to monthly observations for 1995–99.

Sources: Chicago Board Options Exchange; Datastream; BIS calculations. Graph VI.7

prices of traded equity index options reflected this trend (Graph VI.7). This rise in volatility was not due simply to falling stock prices. While in previous years implied volatility tended to rise when prices fell, volatility in 2000 and 2001 rose to levels well beyond what would be consistent with the previous relationship between volatility and price performance. This was particularly the case for the technology-heavy Nasdaq index.

Fixed income markets

In parallel with equity markets, bond markets alternated between optimism and pessimism in the course of 2001 and the early months of 2002. With inflation more or less quiescent, the levels of swap yields were driven by expectations about the length and depth of the global slowdown and the timing of the anticipated return to tighter monetary policies. Credit spreads, which were stable in the first half of 2001 when the downturn was expected to be short and mild, widened in the third quarter as worries about a more prolonged slowdown took hold. Nevertheless, most corporate and sovereign borrowers had few problems floating long-term debt issues. The resilient bond market proved to be an especially important financing channel towards the end of 2001 and in early 2002, when turbulent commercial paper markets and increased risk aversion among commercial banks resulted in a contraction in the funding available through short-term debt markets.

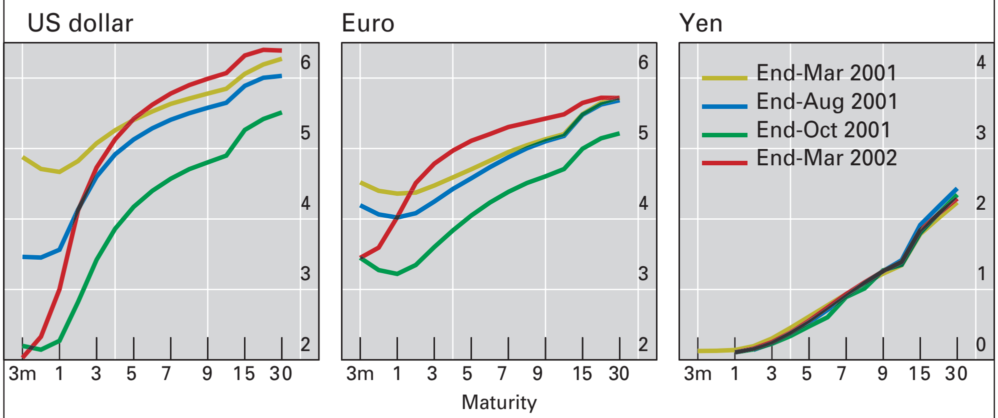
Yield curves responded to monetary policy

Yield curves shifted downwards and steepened …

During the period under review, yield curves were driven by expectations of how monetary policy would respond to macroeconomic news. Dollar and euro yield curves shifted downwards as the news worsened, then became sharply steeper as prospects improved (Graph VI.8). Long-term swap yields in dollars and euros were steady for the first half of 2001, when a relatively brief and mild slowdown was expected. From July until October, long yields fell

Yield curves for interest rate swaps

In percentages



Source: Bloomberg. Graph VI.8

gradually, as investors adapted to worsening macroeconomic news and, immediately after 11 September, fled to safety and quality. In November and the first half of December, a reversal of this flight to safety and expectations of a quick end to the slowdown led to a sharp increase in long yields. These expectations reflected confidence in the effectiveness of a renewed easing of US monetary policy. As a result, by early 2002, the US dollar yield curve was steeper than it had been since early 1994, even though the absolute level of long-term rates remained close to record lows. In the euro area, where the easing of monetary policy was more moderate, the steepening of the yield curve was less pronounced.

... as investors bet on the power of monetary easing

Yen yield curve unchanged

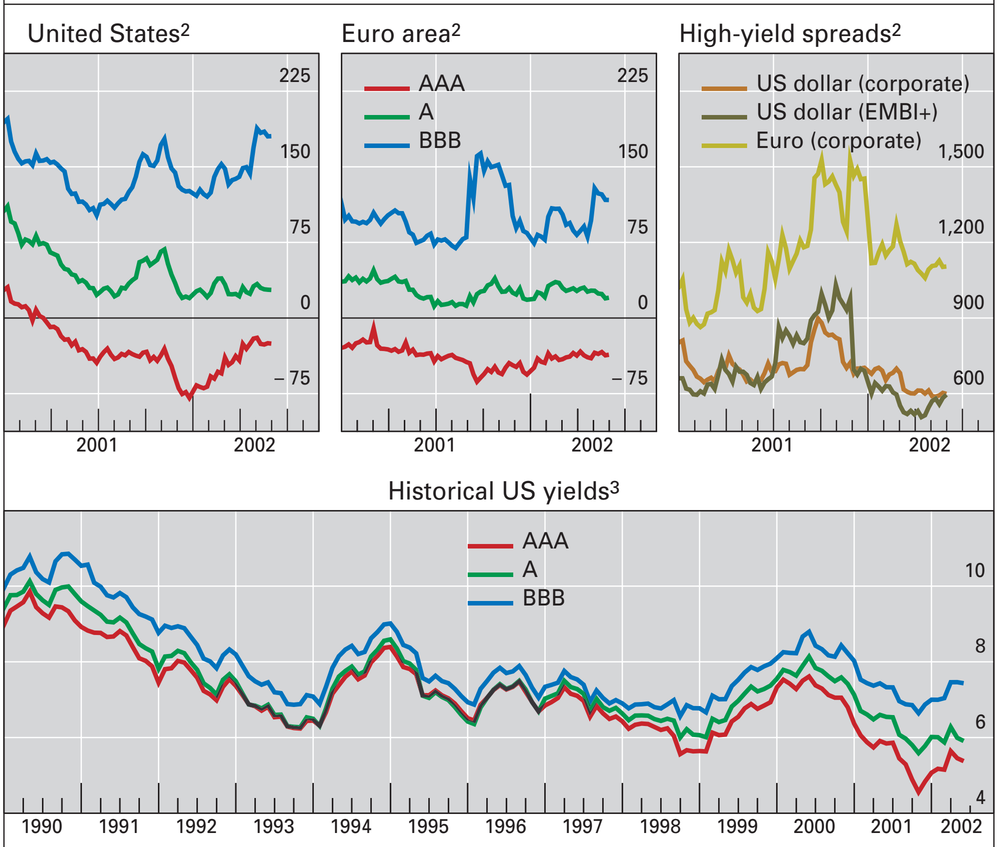
The yield curve of the Japanese yen, alone among the major currencies, was virtually unchanged for most of 2001 and early 2002. Short-term rates were anchored near zero, with investors anticipating that there would be little change in the stance of Japanese monetary policy in the near future given the continued weakness in growth. Similar considerations kept rates low at longer maturities. At the same time, there were intermittent episodes of upward pressure on long yields in response to the steady increase in government debt. The worsening fiscal situation and the slow pace of structural reform contributed to increased investor wariness about Japanese assets, as reflected in moves by the major credit rating agencies to downgrade Japan's sovereign domestic debt.

The corporate bond market proved resilient

Corporate credit spreads narrowed ...

A remarkably resilient corporate bond market provided a bright spot in global financial markets during this period. Credit spreads tended to narrow as benchmark yields rose, with investors linking prospects for an improvement in corporate credit quality to the chances for a rapid recovery in growth (Graph VI.9, upper panels). In the first half of 2001, spreads declined as investors looked beyond the downturn in growth and the rise in default rates, believing these events to have already been priced into bond yields. In the third quarter, when the slowdown proved more serious than expected and

Corporate bond spreads and US yields[1]



[1] Bond index yields against 10-year swap rates. [2] End-week data, in basis points. [3] In percentages.
Sources: Bloomberg; Merrill Lynch; national data; BIS calculations. Graph VI.9

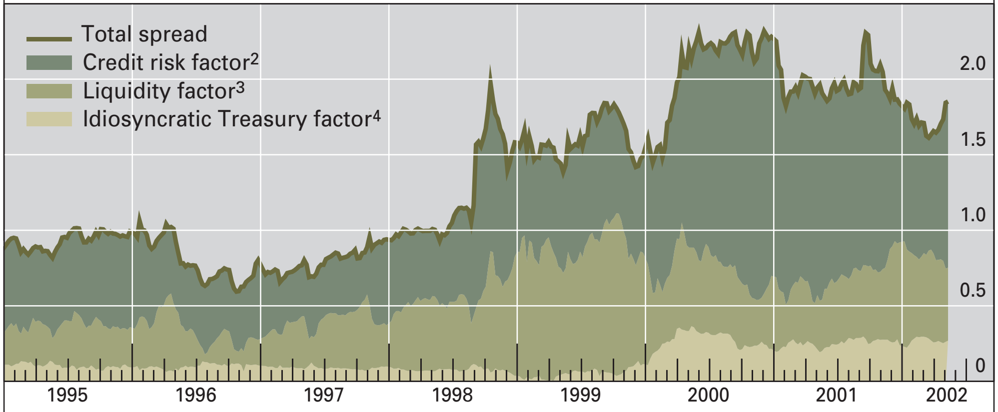
defaults continued to increase, spreads for virtually all credit risk classes widened, only to narrow again as optimism returned in November. As a result, overall corporate borrowing costs fell to historically low levels in nominal terms in September 2001, and rose only to a mild degree afterwards (Graph VI.9, lower panel). Areas of scepticism remained, however, as could be seen in the widening gap between BBB- and A-rated instruments. Concerns about the health of corporate balance sheets and the reliability of financial reporting contributed to a renewed widening of spreads in the first few months of 2002.

... though some scepticism remained

The gyrations of corporate credit spreads in 2001 and 2002 appear to have been driven at least in part by a rise in the liquidity premium, which masked a gradual decline in the market price of credit risk per se. This can be seen from a decomposition of the spread of BBB-rated US dollar corporate bonds over Treasury bonds into three components: credit risk, liquidity and the unique premium that investors pay for on-the-run Treasury securities (Graph VI.10). The market price of credit risk gradually fell from close to 150 basis points at the beginning of 2001 to approximately 80 basis points in the first quarter of 2002, with a brief spike in September. This more or less steady improvement reversed the sharp widening of credit risk premia that had accompanied the bursting of the technology bubble in 2000. Conventionally

Decomposition of corporate spreads

Risk factors influencing BBB spreads, in percentage points[1]



[1] Merrill Lynch seven- to 10-year BBB corporate spread over on-the-run Treasury yields. [2] Premium for bearing credit risk. [3] Premium investors are willing to pay for the greater liquidity of on-the-run Treasury securities relative to off-the-run Treasuries. [4] Premium accruing only to Treasury securities reflecting any benefits to holding Treasuries not shared by other assets.

Sources: V Reinhart and B Sack, "The changing information content of market interest rates", *BIS Quarterly Review*, June 2002; more recent calculations by B Sack; Merrill Lynch. Graph VI.10

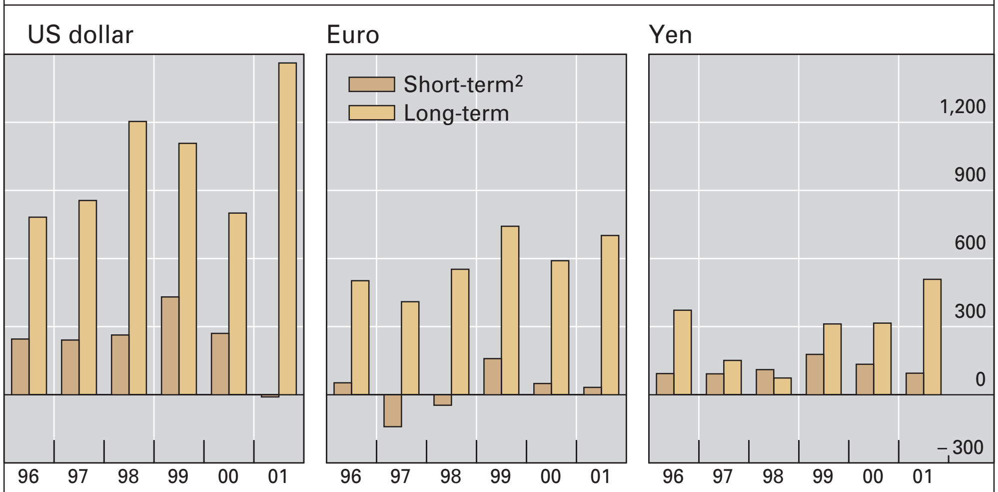
measured spreads concealed the fall in the price of credit risk, however, because it coincided with a steady rise in the yield premium required by investors to hold less liquid securities.

Long-term financing through bond markets was strong

Despite the economic downturn and the occasional widening of spreads, financing through long-term bond markets was strong throughout most of 2001 (Graph VI.11). This was particularly true of the US dollar market, where corporate activity propelled net issuance of long-term debt securities to a record high. The euro corporate bond market continued to mature, spurred by

Net issuance of debt securities by maturity[1]

In billions of US dollars



[1] Money market instruments and bonds issued in domestic and international markets. [2] Instruments with an original maturity of one year or less.

Sources: Bank of England; Dealogic; Euroclear; International Securities Market Association; Thomson Financial Securities Data; national data; BIS. Graph VI.11

strong issuance by telecoms firms and automobile manufacturers. In Japan, substantial government borrowing supported the growth of the bond market.

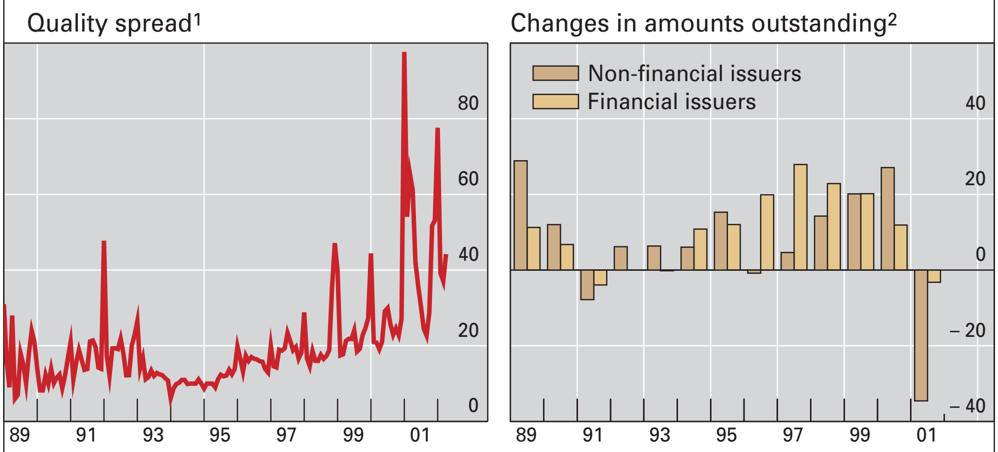
Borrowers shifted from short-term to long-term debt

Some of the issuance of long-term debt reflected a shift by borrowers out of short-term debt. The economic slowdown and the consequent reduction in firms' need for working capital explain part of the decline in short-term issuance, while historically low long-term yields encouraged borrowers to extend the maturity of their debt. At the same time, several major US corporations saw their access to the commercial paper (CP) market closed off by credit rating downgrades but found that they could still borrow readily in the corporate bond market. In the euro area, corporations redeemed short-term bridge loans taken out in 2000 and 2001 to support mergers and acquisitions and purchases of third-generation mobile phone licences.

CP market contracted because of credit concerns ...

In the United States, difficult financing conditions in the CP market forced many borrowers to reduce their reliance on this funding channel. Defaults by Californian power utilities in January 2001 took many CP investors by surprise and heightened their sensitivity to credit risk. This in turn exacerbated investors' reaction to the rising number of credit rating downgrades during 2001. In a market where by far the largest buyers, namely money market mutual funds, are prohibited from holding more than 5% of their portfolios in non-prime paper, downgrades and defaults served to further reduce what little demand there was. The heightened aversion to credit risk contributed to exceptionally wide and volatile spreads in the US dollar CP market (Graph VI.12). The magnitude of the drop in CP issuance further illustrates how unusual the present difficulties in the CP market are. Whereas during the previous US recession in 1991 the outstanding stock of CP issued by non-financial corporations fell by 8%, in 2001 it fell by 35%. Borrowers also turned increasingly to the asset-backed CP market, where the use of receivables as collateral makes credit risk less of an issue.

US commercial paper

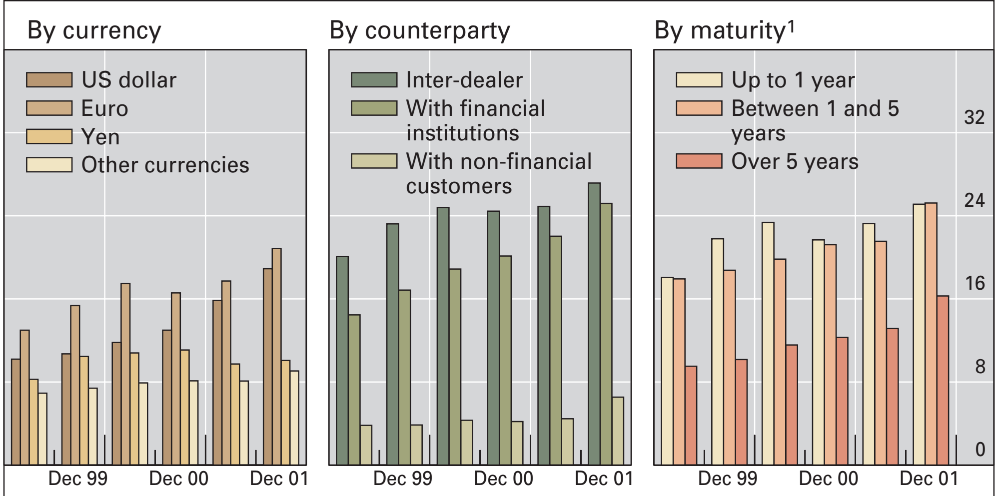


[1] Of 30-day non-prime (A2/P2-rated) over prime (A1/P1-rated) commercial paper, in basis points; monthly averages. [2] Annual percentage changes.

Sources: Bloomberg; BIS calculations. Graph VI.12

Interest rate swaps

Notional amounts, in trillions of US dollars



[1] Interest rate swaps and forward rate agreements.

Source: BIS. Graph VI.13

... and the withdrawal of bank backup facilities

Compounding the problems in the CP market, major banks became increasingly reluctant to extend the liquidity facilities they had previously provided to backstop CP programmes. In the past, banks had tended to price these lines with narrow credit spreads, in the hope of attracting underwriting, advisory and other more profitable business from issuers. The risks of such a strategy became all too apparent when several high-profile borrowers, upon being forced out of the CP market, drew down their credit lines at spreads that were far below market rates. The largest provider of such lines subsequently announced that it would withdraw from the business. Ironically, standby facilities had been created in the 1970s to relieve funding problems in a CP market that was prone to seizing up. By 2001, these backup facilities had effectively become prerequisites for issuing CP, and so their withdrawal only exacerbated the squeeze in the market.

Some issuers swapped from fixed to floating

Some issuers of long-term debt chose to continue paying short-term rates by entering into interest rate swap contracts, supporting the continued growth of the medium-term and long-term segments of this market (Graph VI.13). The additional demand by those seeking to receive fixed rate funding contributed to a narrowing of the spreads of dollar and euro swaps over government securities in the first quarter of 2002. However, the share of the market involving non-financial counterparties continued to be quite low.

External debt financing for emerging markets

The resilience displayed by the major financial markets during the period under review was equally evident in emerging markets. Despite the global slowdown and turmoil in Argentina and Turkey, external financing conditions were favourable for most borrowers, with credit spreads remaining stable or even narrowing. Nevertheless, debt flows to emerging markets were more or less unchanged: net issuance of international debt securities by emerging market borrowers totalled $45 billion in 2001, comparable to average issuance during 1998–2000, and repayments to foreign banks continued to outpace new lending. This resulted in a $14 billion contraction in cross-border loans. Debt flows were depressed by investors' retrenchment from crisis-afflicted economies as well as weak demand for external financing in Asian and oil-exporting countries. Higher-rated borrowers who sought financing in international bond markets were accommodated readily, but the access of lower-rated borrowers to external finance was more tenuous.

Limited contagion despite severe crises

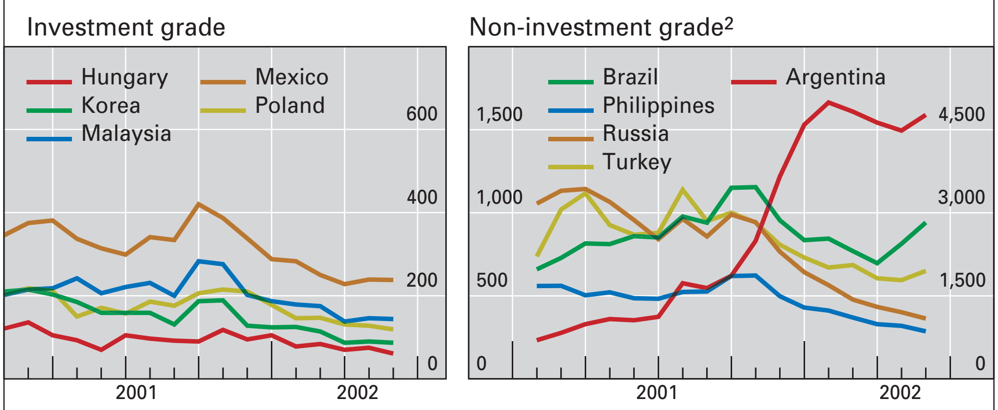
Credit to Turkey and Argentina cut back sharply

Banks and bond investors sharply cut back credit to crisis-afflicted countries. In 2000, Turkish entities, mainly banks, had been the largest emerging market borrowers in the syndicated loan market, and the Argentine government the largest issuer in the international bond market. In 2001, their market access was curtailed. Spreads on Turkish debt were high and volatile until late in the year. Spreads on Argentine debt widened sharply on several occasions, the largest jumps occurring in July, following a poorly subscribed government debt auction, and in November, when the government announced a restructuring of locally held debt (Graph VI.14). In late 2001, Turkey's market access began to improve, following a strengthening of its IMF programme, but private and official financing to Argentina was cut off. International banks reduced their cross-border claims on Turkey by 24% during 2001, and on Argentina by 12%. A more telling sign of the distress in Argentina was the massive repatriation of external assets by local banks to meet their need for dollar liquidity. Between end-2000 and end-2001, the outstanding stock of deposits placed with banks abroad by banks in Argentina fell from $23 billion to $6 billion.

A number of other countries also faced difficult financing conditions during the period under review. Countries with relatively high debt servicing requirements or other domestic problems were particularly vulnerable. The events in Argentina added to economic and financial pressures in Uruguay

Sovereign bond spreads for selected emerging markets

Spreads over US Treasury yields, in basis points[1]



[1] At month-end. [2] Left-hand scale, except for Argentina (right-hand scale).

Source: JP Morgan.

Graph VI.14

and led to the loss of the country's coveted investment grade status. Spreads on Venezuela's debt widened as investors lost confidence in the government's policies, then narrowed following the floating of the bolivar in February 2002.

Limited contagion in July and September ...

Episodes of contagion were short-lived and mostly limited in scope. Selling pressure hit a surprisingly large number of emerging markets in July, including Brazil and South Africa, in response to the poor auction in Argentina. In addition, the global flight to quality immediately following 11 September caused credit spreads for many emerging market borrowers to increase. However, in both instances the repricing of risk proved temporary and the trends evident prior to each episode quickly reasserted themselves, with investors carefully discriminating among emerging markets. For example, by mid-October spreads on Brazilian bonds had decoupled from Argentine spreads. The widening of Brazilian spreads in the second quarter of 2002 largely reflected domestic political uncertainties.

... subsequently turning into advantages for other emerging markets

The Argentine government's default at the end of the year had few immediate consequences for other emerging markets. As explained in Chapter V, the long run-up to the crisis, the withdrawal of highly leveraged investors from emerging markets and the adoption of floating exchange rates by many countries helped to check contagion. In addition, the smaller number of "crossover" investors in the market today – investors whose portfolios consist mainly of investment grade securities but are permitted to contain small amounts of lower-grade debt – weakened links between various financial markets. Whereas crossover investors tend to retreat from the entire asset class during periods of volatility, "dedicated" investors holding only emerging market assets focus on countries' relative creditworthiness. The shift by dedicated investors out of Argentine assets and into other emerging markets partly explains the narrowing of spreads on Brazilian and Mexican debt even as Argentine spreads soared.

Bond investors returned ahead of borrowers

Borrowers with good fundamentals saw better market acceptance ...

In contrast to the situation in crisis-afflicted countries, investors were receptive to debt issues by strong or improving credits throughout most of the period under review. Credit spreads for investment grade borrowers such as Korea, Malaysia and Mexico were stable or even narrowed during 2001 and the early part of 2002 (Graph VI.14). Mexico replaced Turkey as the largest emerging market borrower in the international banking market in 2001. A few lower-rated borrowers with strengthening fundamentals, including the Philippines and Russia, also saw their access to international debt markets improve. The outstanding stock of cross-border bank claims on Russian borrowers, which had fallen by 40% in the three years following the government's debt moratorium in August 1998, rose by 7% in the latter half of 2001. Moreover, several sovereigns tapped international bond markets for the first time in decades, if not ever, including the Dominican Republic, Egypt and Peru.

Poland, Hungary and other countries in accession negotiations with the European Union continued to benefit from sizeable inflows into domestic bond markets. Investors seemingly expect bond yields in EU accession countries to converge with those in the euro area, just as yields across the euro area had converged with those in Germany in the period before monetary union.

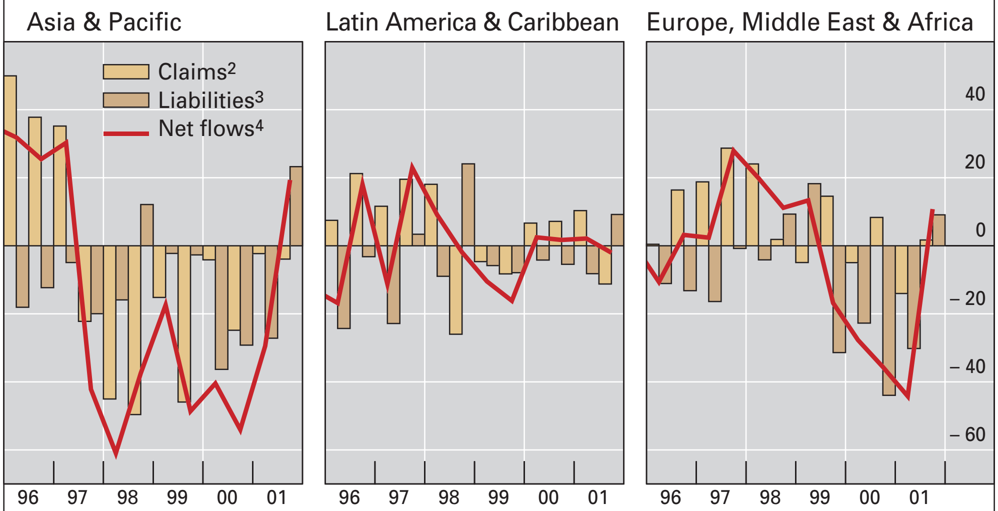
... but demand for external finance was muted

Notwithstanding stable or improving external financing conditions, many emerging economies had limited need for foreign borrowing. In particular, East Asian and oil-exporting countries continued to post large current account surpluses. Their current account position is expected to deteriorate in 2002, and consequently their external financing needs are likely to increase over the near term (see Chapter III). Signs of deterioration were already becoming apparent in the second half of 2001. Whereas emerging markets, mainly Asian economies and OPEC members, had deposited $249 billion with banks abroad between mid-1999 and mid-2001, in the second half of 2001 they withdrew $42 billion (Graph VI.15).

Demand for foreign borrowing was initially held back further by expanding opportunities to borrow in domestic markets. In Mexico, an increasingly liquid domestic bond market produced a peso yield curve extending out to 10 years, and the government elected to refinance some of its dollar borrowings in the domestic market. In Asia, low domestic interest rates and flexible exchange rates made local currency debt more attractive than foreign currency debt. However, the situation began to change in late 2001, following the sharp decline in short-term US dollar interest rates. Cross-border bank claims on Southeast Asia increased towards the end of 2001 for the first time since the onset of the Asian financial crisis in mid-1997. Portfolio inflows also picked up, attracted by double digit returns in local equity markets (see Chapter III).

Cross-border bank flows to emerging markets

Exchange rate adjusted changes in BIS reporting banks' external positions[1]



[1] Semiannual, in billions of US dollars. [2] Loans to and purchases of securities issued by residents of emerging markets. [3] Funds, mainly deposits, placed with BIS reporting banks by residents of emerging markets. A negative (positive) value indicates an increase (decrease) in banks' liabilities vis-à-vis emerging markets. [4] Claims minus liabilities.

Source: BIS. Graph VI.15

Seeds of concern

Even though markets proved resilient, vulnerabilities remain

Although financial markets responded more smoothly than many had expected to a series of tests during the period under review, vulnerabilities remain. Some of these vulnerabilities are conjunctural in nature. As already discussed, equity valuations are still exceptionally high and access to capital markets by lower-quality borrowers – including some from emerging markets – remains precarious. Others are more structural in nature. The high degree of concentration in some market segments exposes the financial system to a greater risk of systemic failure. And fundamental weaknesses in the mechanism for producing quality information discourage investors and potentially distort market prices, resulting in a misallocation of capital.

Risks of concentration

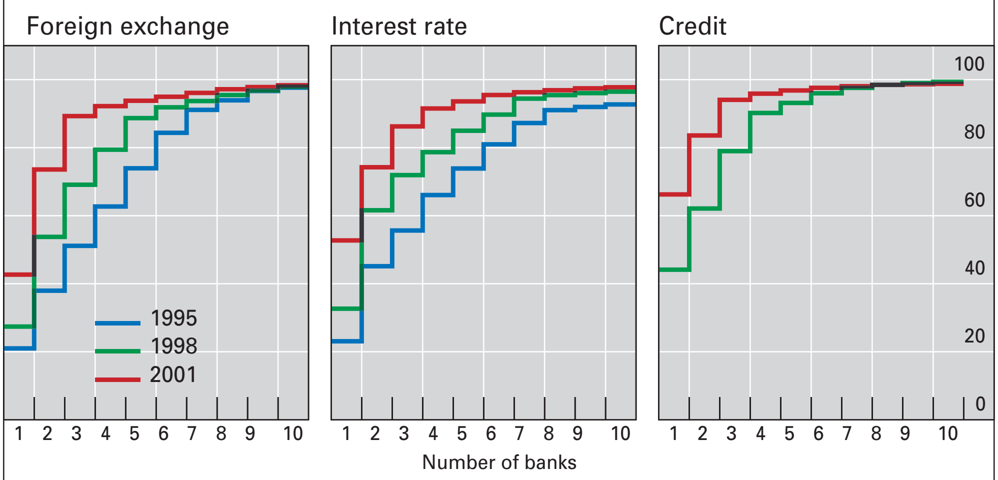
High degree of concentration in OTC markets ...

As a result of the large number of mergers and acquisitions in the financial services sector over the past decade, concentration in financial markets has tended to increase. Markets have long been geographically concentrated. According to the latest triennial central bank survey, London and New York account for 47% of global trading activity in foreign exchange markets and 49% of activity in over-the-counter (OTC) derivatives markets. A more recent development is the high degree of institutional concentration in some market segments, most notably OTC markets. In foreign exchange markets, three quarters of all foreign currency transactions in London and New York were conducted by only 30 dealers in 2001, compared to 40 dealers in 1995. Moreover, three banks held 89% of the notional outstanding stock of foreign exchange derivatives contracts booked by US banks in 2001, up from 51% in 1995 (Graph VI.16). In the US interest rate derivatives market, the three largest banks accounted for 86% of the total notional amount outstanding at the end of 2001, compared to 56% in 1995. In the US credit derivatives market, the share of the top three banks rose from 79% to 94% between 1998 and 2001.

While consolidation can bring many benefits, it also poses risks. Among the most important benefits is the tendency for larger banks to have more diversified portfolios and so to be less susceptible to firm-, industry- or region-specific shocks. This may in part explain why the US banking system proved so resilient to the many defaults that occurred during 2001. Yet, to the extent that consolidation leads to greater concentration, it can also have adverse consequences for the functioning of financial markets. Liquidity is one concern. In fact, part of the rise in the liquidity premium evident in Graph VI.10 can be attributed to financial sector consolidation. Mergers frequently result in a withdrawal of risk capital allocated to market-making activities. Furthermore, consolidation can raise the costs of trading by making it more difficult to diversify counterparty credit risk. For example, as the number of active market-makers dwindles, it becomes increasingly difficult for dealers to offset customer orders in the inter-dealer market, which has a negative impact on the liquidity that dealers can offer to customers.

US banks' holdings of derivatives contracts

Cumulative percentage of total notional amount outstanding[1]



[1] Total OTC and exchange-traded derivatives contracts held by US commercial banks.

Sources: US Office of the Comptroller of the Currency; BIS calculations. Graph VI.16

… means problems at a single dealer can have market-wide implications

Another concern arising from concentration is the vulnerability of markets to dealer-specific risks. In markets where intermediation is highly concentrated, developments at a single dealer can have market-wide implications. The collapse of Drexel Burnham Lambert in 1990 and the subsequent contraction of the US high-yield bond market, where Drexel had been the dominant dealer, illustrates this dynamic. The vulnerability of markets to dealer-specific risks is compounded by the fact that the credit quality of the largest market-makers has not strengthened over the years. In 1994, the top dealer in the global interest rate swap market was rated triple-A. By early 2002, it had been downgraded by three notches to the lower edge of double-A, while maintaining its position in the league tables. Ironically, the triple-A subsidiaries that securities firms set up in the early 1990s have not managed to capture a substantial share of the derivatives business.

Markets have adapted in various ways to mitigate the risks of concentration. Borrowers in the most developed markets have access to a wide variety of financing options, from venture capital to asset-backed commercial paper, and may find one market open even while another is shut. Other types of players, such as insurance companies and mutual funds, have become more active in segments historically dominated by banks or dealers. Collateral and daily settlement are increasingly being used to control counterparty credit risks in OTC markets. Interestingly, in 2001 the growth of exchange-traded derivatives markets outpaced that of OTC markets, marking a significant reversal in the pattern of activity evident for much of the previous decade.

A problem of information quality

Sound information is the lifeblood of markets

Another source of vulnerability is the fact that investors have been losing faith in the quality of the information they are receiving about companies. Sound information about the conditions and prospects of individual firms has been described as the lifeblood of the markets. By incorporating such information into asset prices, markets convey signals to guide the allocation of capital in the global economy. While the firms themselves provide the basic data, modern markets have come to rely on a system of checks and balances – involving independent auditors, stock analysts and other agents – to ensure and enhance the quality of the information. The case of Enron is merely the most dramatic manifestation of a zeitgeist that has led to a progressive weakening of the mechanisms for producing the requisite information.

It is difficult to pass on the costs of information to investors

Even under favourable conditions, producing quality information presents a fundamental dilemma. The information is costly to produce, but it is difficult to charge investors for it, since non-paying investors cannot be excluded from the gains. Hence, modern financial systems have devised solutions that involve indirect ways of bearing the costs. Independent auditors, in particular, certify the reliability of a firm's financial statements, but it is the firm itself that pays for the auditing work. Similarly, stock analysts interpret a company's data on earnings, but it is often a securities firm involved with the company in other ways that pays for the analysis. While conflicts of interest are hard to avoid in these circumstances, the arrangements seem nonetheless to have worked reasonably well in the past. Auditors and stock analysts evidently attached sufficient importance to their reputations to have commonly played their part in producing quality information.

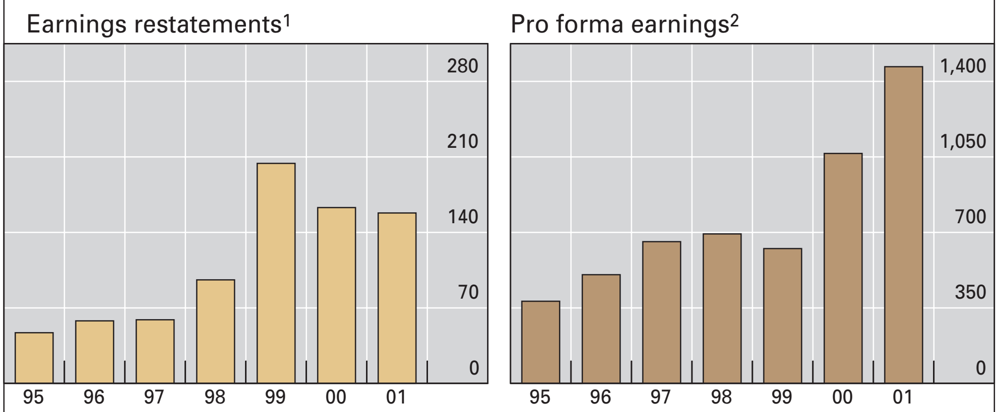
High stock prices were so critical …

The technology-led bull market of the late 1990s distorted the incentives to produce reliable information. Newly listed technology firms followed a business model in which they spent heavily on research and development, gleaned little current profit from operations and relied largely on equity issuance to raise cash, compensate management and employees, and acquire other companies. For some of these firms, a high stock price was so critical to survival that the incentive to manage information for this purpose often overrode the importance of future reputation. For many other firms, paying compensation in the form of stock options lent a similar make-or-break character to stock prices and led management to place undue emphasis on supporting these prices in the short run.

… that firms had an incentive to manage earnings …

Consequently, firms had an incentive to present financial reports that would inflate expectations of earnings growth. US firms, in particular, could take advantage of accounting standards that allowed them to count contracted future sales as current revenues, to treat stock options issued for compensation as expenses only for tax purposes or to use optimistic assumptions for their pension plans. With many firms pushing accounting rules to the limit, there was a growing tendency to overstep the bounds. As a consequence, an increasing number of US firms had to restate their earnings (Graph VI.17), in the process inflicting heavy losses on investors. When aggressive accounting still could not deliver the desired results, firms increasingly resorted to pro forma reporting, providing supplementary financial statements that stripped out bad news and presented performance in as favourable a light as possible. While the number of earnings restatements reached its peak in 1999, the use of pro forma reports continued to rise until 2001.

Indicators of information quality



[1] Number of financial reporting restatements announced by US-listed firms. [2] Number of company press releases that contained pro forma financial results. For 2001, first half data annualised.

Sources: G D'Avolio, E Gildor and A Shleifer, "Technology, information production and market efficiency", in *Economic Policy for the Information Economy*, Federal Reserve Bank of Kansas City, 2001; M Wu, "Earnings restatements: a capital market perspective", New York University, 2002; Financial Executives Research Foundation. Graph VI.17

... and accounting firms and stock analysts had incentives to cooperate

Auditing firms and stock analysts increasingly found their interests aligned with the companies aggressively managing their earnings. The incentives for auditing firms to cooperate came in the form of consulting contracts and other services that were more lucrative than auditing work. There is some evidence that the more a company paid an auditing firm for non-audit services, the stronger the tendency for aggressive accounting became. The incentives for stock analysts came in the form of compensation linked to underwriting deals the analysts helped support. Analysts with large securities firms tended to cover only stocks of companies offering potential underwriting business and to give only "buy" recommendations. During the bull market, they seemed to enhance their credibility with investors by their uncanny ability to forecast reported earnings, while raising little suspicion that this seeming prescience might have been due to earnings management by the reporting companies themselves.

There are moves to restore quality information ...

The backlash from Enron provided the major impetus for efforts to restore quality to market information. These efforts have encompassed both the self-correcting mechanisms of the market and fresh initiatives by regulators. The accounting firm involved with Enron has lost its major clients and is struggling to survive a criminal charge brought by the US Justice Department. More generally, companies have become increasingly reluctant to turn to their auditing firm for consulting services, and some of the large accounting firms have announced a policy of not offering both audit and non-audit services to the same client. Several countries are contemplating measures to rotate auditors and separate auditing work from consulting. Stock analysts employed by large securities firms have suffered a blow to their reputations, and institutional investors are devoting more resources to in-house analysis. Moreover, the New York attorney general has forced a large securities firm to sever the links between analysts' compensation and its underwriting business. Other securities firms have announced their own parallel measures.

... but investors have raised the bar

It remains to be seen whether the efforts thus far will be sufficient to fully reassure investors or to withstand the distortions that the next bull market will no doubt bring. Most of these efforts are intended to mitigate conflicts of interest in existing arrangements for sharing the costs of information. Investors, however, seem to have been so troubled by recent revelations that they have raised the bar for the quality of information they expect. This market attitude presents a valuable opportunity to develop and then implement additional approaches towards strengthening the incentives for producing good information.