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1. Overview: markets rally as confidence returns

Doubts among investors about the strength of the global economy receded in November. Investors regained their appetite for risk as news pointing to a firming of growth accumulated, most notably in the United States. Although a run-up in oil prices weighed on global financial markets in October, markets quickly rebounded as concerns about oil supplies eased. By the end of November, credit and equity prices were at their highest levels in years and volatilities at their lowest. Increases in US policy rates were widely anticipated and had little impact on markets. Not even the poor performance of corporate profits relative to expectations seemed to dampen investors' confidence.

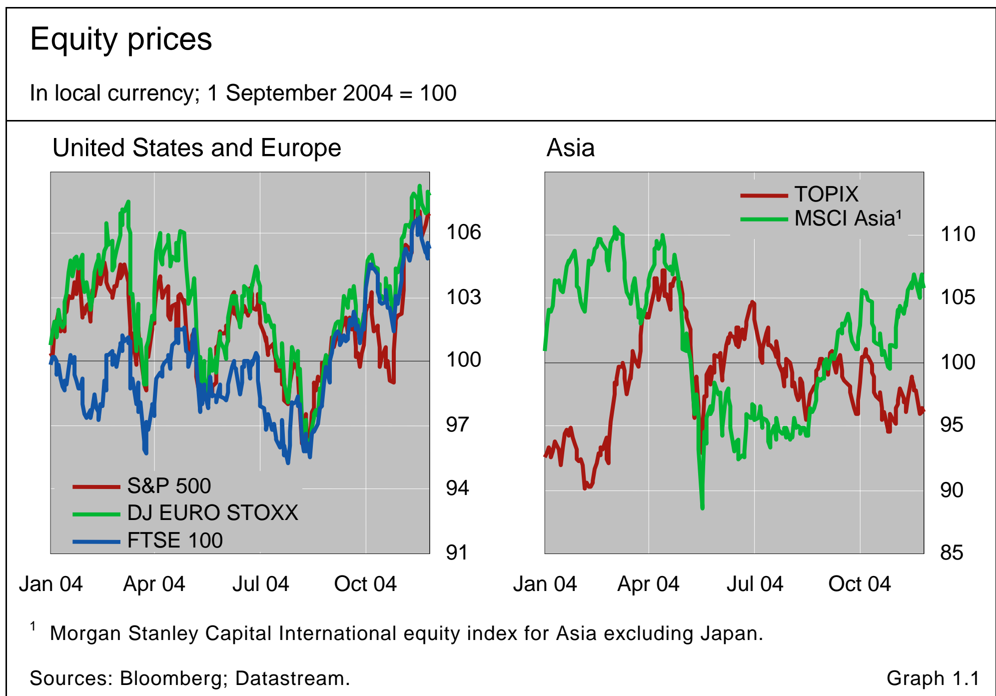
Investors' renewed appetite for risk also helped to drive spreads on emerging market debt down to their lowest level in years. Emerging market borrowing in international markets remained on track to equal its 1997 high, as debtors took advantage of the favourable financing conditions on offer. Swings in commodity prices contributed to a widening of spreads in October, but this proved to be only temporary. Investors also focused on China, where an increase in interest rates was perceived to signal a greater willingness by the authorities to use market mechanisms to guide the economy.

Despite unexpectedly strong macroeconomic releases in the United States in November, the US dollar fell to new lows against the major currencies. The catalyst seemed to be renewed concerns about the US current account deficit. As a result of the depreciation of the US dollar and differing trends in growth expectations, yen and especially euro yields diverged from dollar yields to a greater extent than they had earlier in the year. Even so, long-term yields in the major markets stayed well below their June highs.

Equity investors shrug off profit warnings

Equity prices reach their highest level since 2001 ...

Relief regarding the economic outlook was most evident in equity markets. After drifting downwards in July and early August on concerns about the strength of the economic recovery, equity markets around the world rallied from mid-August (Graph 1.1). The rally was interrupted in October but then gathered steam in November, with many markets closing the month at their highest level since 2001. The S&P 500 Index rose by 11% between 12 August, its low for the



Equity prices

In local currency; 1 September 2004 = 100

[1] Morgan Stanley Capital International equity index for Asia excluding Japan.

Sources: Bloomberg; Datastream. Graph 1.1

year, and 26 November. Over the same period, the Dow Jones EURO STOXX was up by 12% and the MSCI Asia excluding Japan index by 11%.

The only major equity market not to increase during the period under review was Tokyo. After making strong gains earlier in the year, Japanese equity prices were held back by disappointing news about the strength of the Japanese economy. For example, the TOPIX index fell by ½% on 10 September when revised GDP data for the second quarter came in weaker than market participants had expected.

... boosted by a firming of the growth outlook ...

In those markets that did advance, valuations were boosted not so much by an unambiguous improvement in growth forecasts as by news that was interpreted as ruling out a near-term slowdown or reversal of the global recovery. Whereas many key US economic indicators had disappointed investors in July and August, data releases in subsequent months were close to or above expectations. Consequently, after being revised downwards during the third quarter, growth forecasts stabilised in the fourth, for the United States in particular (Graph 1.2). Confidence in the outlook for the US economy was bolstered by the release of a stronger than expected US employment report on 5 November, which led to a ½% increase in the S&P 500. This followed a 1% increase on 3 November, when the dissipation of political uncertainty in the wake of the US presidential election had lifted equity markets.

... and a decline in risk aversion

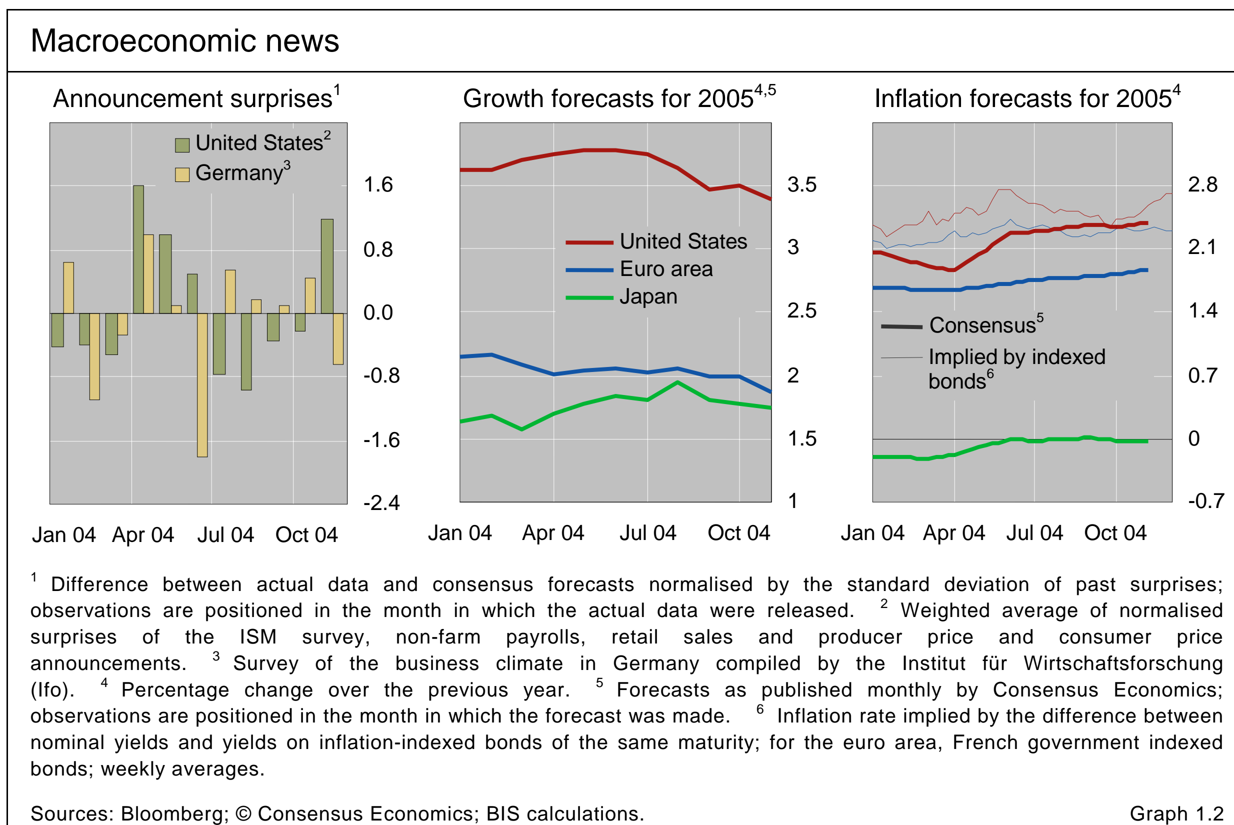
A decline in risk aversion played a key role in the market rally. Growing risk aversion had weighed on equity markets between April and June, reflecting uncertainty about the course of US monetary policy (Graph 1.3). Estimates of effective risk aversion derived from equity index options suggest that this trend had reversed by September. As the number of negative macroeconomic surprises diminished, investors appeared to grow more confident in their forecasts of economic growth and future policy rates.

Poor earnings reports occasionally caused markets to stumble, in October especially. For example, the S&P 500 fell by 1% on 7 October and by the same amount on 14 October, after aluminium producer Alcoa and automaker General Motors, respectively, reported earnings well below investors' expectations. Indeed, in the third quarter of 2004 the profits of companies in the S&P 500 grew by less than expected for the first time in more than a year. One quarter of US financial institutions reported earnings below analysts' forecasts, almost double the number in the same period a year earlier (Graph 1.3). Furthermore, the gap between the number of US companies announcing negative revisions to their earnings forecasts and the number of companies announcing positive revisions reached its widest level since mid-2003. Investigations by the New York Attorney General's office into the insurance sector added to the US market's woes in October (see below).

Nevertheless, strong earnings growth – in double digits even if below expectations – has supported the market's rising trend and in retrospect helped justify the high valuations observed at the beginning of the year. Based on a five-year average of trailing earnings, the price/earnings ratio for the S&P 500 declined from 30 in January 2004 to 26 in August before moving higher again. In November, the price/earnings multiple equalled 28, well above its 1961–95 average of 17. The ratio based on forward earnings would be close to this average. However, such earnings forecasts have in the past tended to be overly optimistic.

Concern about the impact of high oil prices on growth

The high level of oil prices at times also weighed on equity markets. Markets had for some time been concerned by longer-term trends in the supply of and demand for oil, in particular the persistence of strong growth in large oil-



[1] Difference between actual data and consensus forecasts normalised by the standard deviation of past surprises; observations are positioned in the month in which the actual data were released. [2] Weighted average of normalised surprises of the ISM survey, non-farm payrolls, retail sales and producer price and consumer price announcements. [3] Survey of the business climate in Germany compiled by the Institut für Wirtschaftsforschung (Ifo). [4] Percentage change over the previous year. [5] Forecasts as published monthly by Consensus Economics; observations are positioned in the month in which the forecast was made. [6] Inflation rate implied by the difference between nominal yields and yields on inflation-indexed bonds of the same maturity; for the euro area, French government indexed bonds; weekly averages.

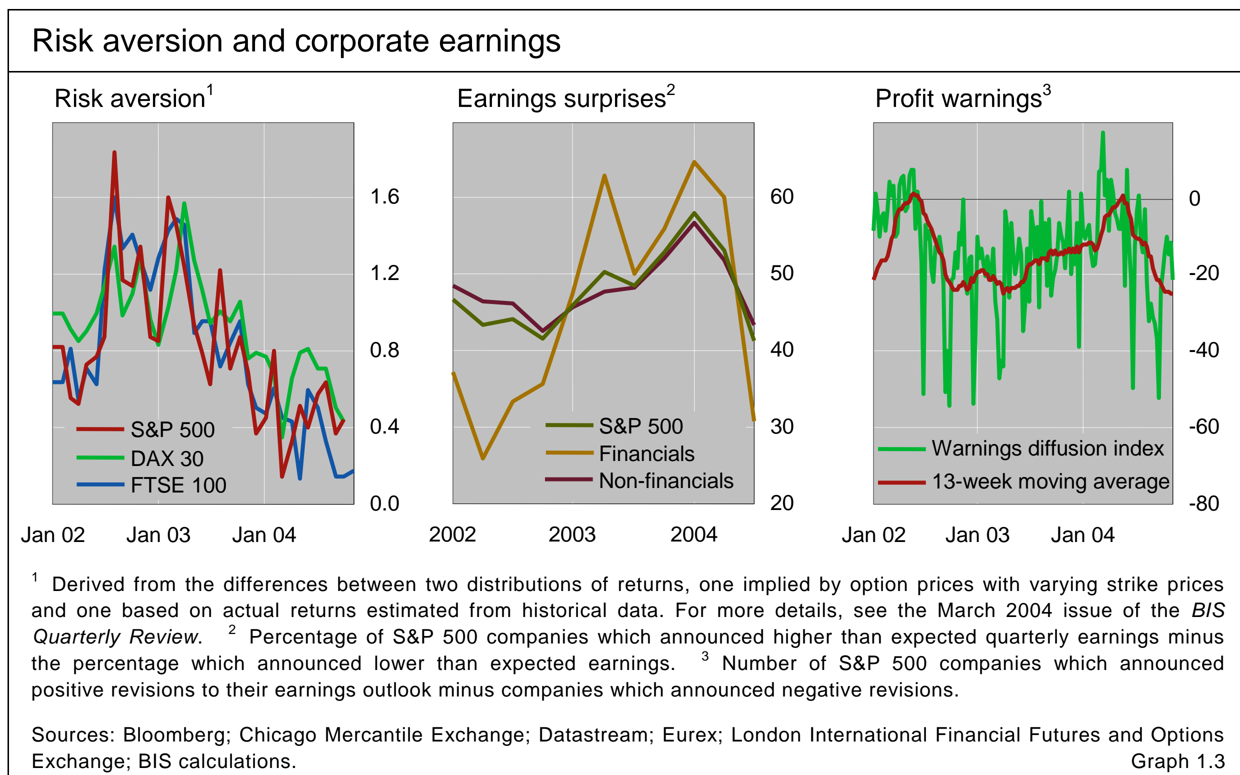
Sources: Bloomberg; © Consensus Economics; BIS calculations. Graph 1.2

consuming nations such as China and low levels of excess capacity in the global oil industry. In mid-September, hurricane damage to oil platforms in the Gulf of Mexico – the source of approximately 10% of the crude oil consumed in the United States – added to these concerns. The damage was more severe than expected, with many companies announcing that output would remain below normal well beyond September. The impact of this disruption was compounded by civil unrest in Nigeria and a labour dispute in Norway, which led to the closure of several oil installations. These events caused oil prices to soar, in particular the prices of sweet crudes such as West Texas Intermediate (WTI) or Brent (Graph 1.4). Supplies of sour crudes such as Dubai were less affected and so their prices did not increase as dramatically.[1]

Any concerns investors had about higher oil prices appeared to focus on the impact on growth rather than on inflation per se. Market participants apparently subscribed to the view that, unlike the oil price shocks of the 1970s, the latest run-up in oil prices would not lead to an acceleration of inflation. Instead, market participants appeared to worry that insufficient excess capacity in the oil industry would act as a brake on the recovery. This fear was especially acute for the US economy because, relative to other large economies, it consumes more sweet crude.

Equity prices rebound as oil prices fall

Concerns about the impact of higher oil prices on growth eased when oil prices fell sharply towards the end of October. On 27 October, news that US oil inventories had risen by more than expected caused oil prices to plummet; WTI

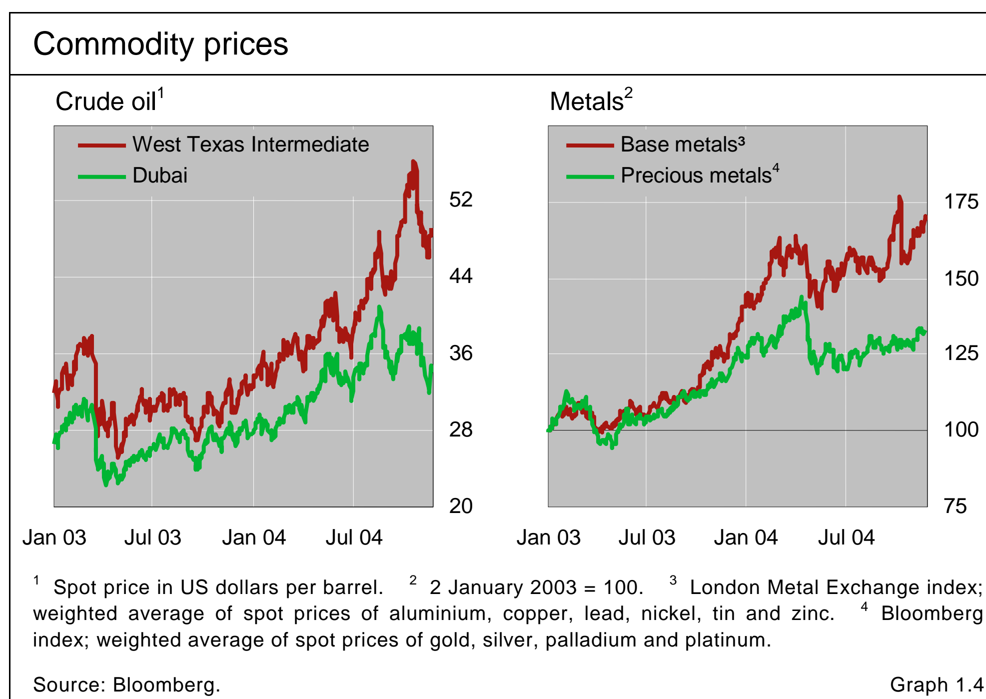


[1] Derived from the differences between two distributions of returns, one implied by option prices with varying strike prices and one based on actual returns estimated from historical data. For more details, see the March 2004 issue of the *BIS Quarterly Review*. [2] Percentage of S&P 500 companies which announced higher than expected quarterly earnings minus the percentage which announced lower than expected earnings. [3] Number of S&P 500 companies which announced positive revisions to their earnings outlook minus companies which announced negative revisions.

Sources: Bloomberg; Chicago Mercantile Exchange; Datastream; Eurex; London International Financial Futures and Options Exchange; BIS calculations.

Graph 1.3

[1] The principal difference between sweet and sour crude is the sulphur content. Sour crude contains more sulphur than sweet crude and so is more difficult to refine. As a result, sour crude is typically priced at a discount to sweet crude.



[1] Spot price in US dollars per barrel. [2] 2 January 2003 = 100. [3] London Metal Exchange index; weighted average of spot prices of aluminium, copper, lead, nickel, tin and zinc. [4] Bloomberg index; weighted average of spot prices of gold, silver, palladium and platinum.

Source: Bloomberg. Graph 1.4

fell by 5% from its near record high of $55 per barrel the day before. This was followed by a 1% jump in the S&P 500 on 27 October and further increases over the next several days. Government intervention earlier in the week to end the labour dispute in Norway is likely to have amplified the impact of the oil inventory report. Oil prices continued to decline in the weeks that followed, reversing much of the run-up that had occurred in September and October. Nevertheless, in late November oil prices were still significantly higher than their levels in the first half of the year.

Search for yield in credit markets

Credit spreads tighten to their lowest level in years

The firming of growth expectations and decline in risk aversion also triggered a rally in credit markets. After moving sideways in the first half of 2004, spreads on both investment grade and high-yield corporate bonds tightened between late August and late November (Graph 1.5). By 26 November, spreads on US dollar-denominated bonds issued by BBB-rated corporations had fallen to 112 basis points – not far above their previous low of January 1998 – and spreads on euro-denominated BBB-rated bonds to 79 basis points.

The low level of credit spreads was underpinned by ongoing improvements in corporate credit quality. Strong earnings growth coupled with still weak capital spending supported further deleveraging. The steady decline in the number of downgrades by the rating agencies – and the increase in the number of upgrades – evident since late 2002 continued in the third quarter of 2004. During this period, Moody's upgraded almost two issuers for every issuer downgraded, compared to less than one upgrade per downgrade in the third quarter of 2003.

Troubles of auto and insurance companies

In those few sectors which experienced a deterioration in creditworthiness, the cause was invariably specific to the sector or firm. Investors focused in particular on the troubles of auto and insurance companies. Spreads on bonds

issued by General Motors – one of the largest issuers in the US corporate bond market – widened by as much as 50 basis points in mid-October after the company reported disappointing earnings. The downgrade of the company by Standard & Poor's to BBB–, the lowest investment grade credit rating, compounded the sell-off. The spreads of several insurance companies widened in late October after the New York Attorney General's office filed a civil suit alleging that broker Marsh & McLennan had rigged bids with the cooperation of insurers. Marsh & McLennan's financing costs rose dramatically, in part because its large commercial paper liabilities meant that it was more exposed to liquidity risk than the other companies under investigation.

High-yield spreads fall despite heavy issuance

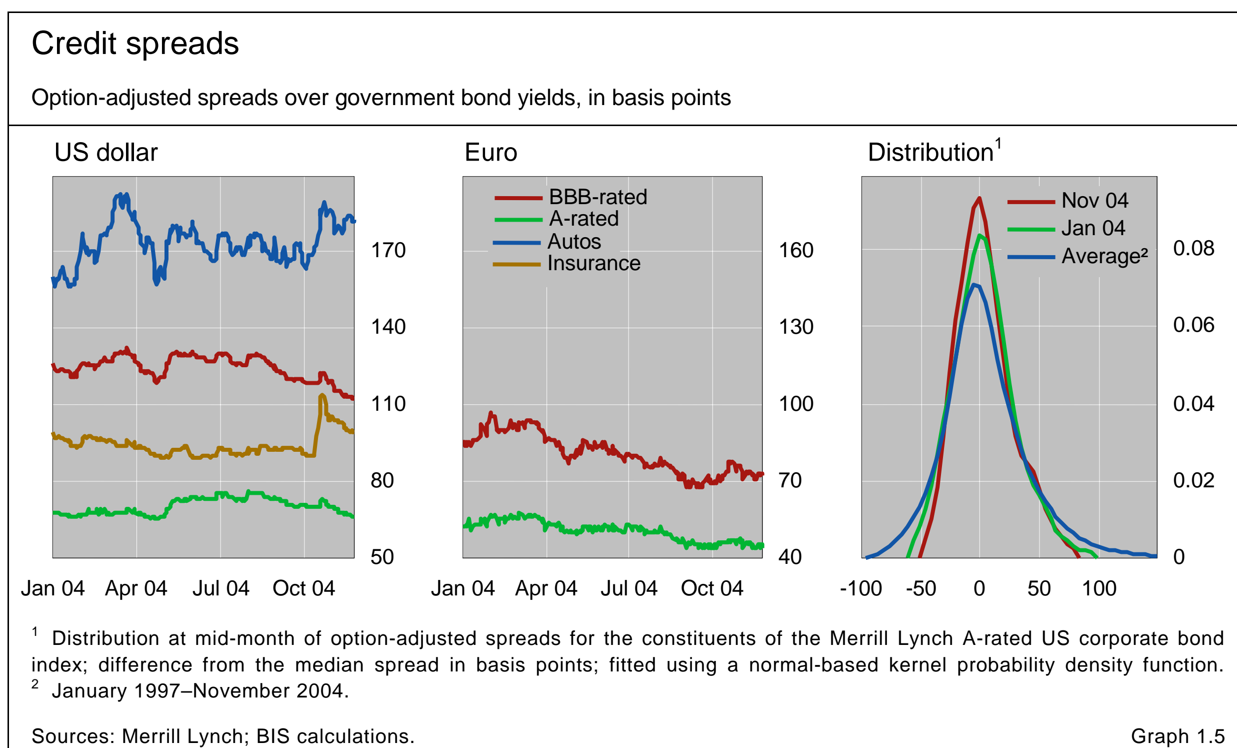
A decline in risk aversion contributed to the compression of spreads. The persistence of low nominal returns on less risky investments supported a continuation of the search for yield that has characterised financial markets since late 2003. In the high-yield debt market, investors continued to bid up prices despite heavy issuance (Graph 1.6). Indeed, spreads on high-yield bonds fell to their lowest level since 1998. Even the least creditworthy borrowers found ready buyers for their debt; Moody's estimates that corporates rated B3 or Caa, Moody's lowest ratings for new issues, accounted for more than one third of US high-yield issuance in the third quarter of 2004. Signings of syndicated credit facilities to finance leveraged buyouts reached a record high of $26 billion in the third quarter (see the box on page 28).

Less discrimination by investors

Another way in which the search for yield manifested itself in credit markets was through less discrimination among issuers. The narrowing of the distribution of credit spreads for issuers in a given rating class suggests that investors in late 2004 did not discriminate as much between issuers as they once had (Graph 1.5). For example, A-rated spreads clustered together more

Credit spreads

Option-adjusted spreads over government bond yields, in basis points

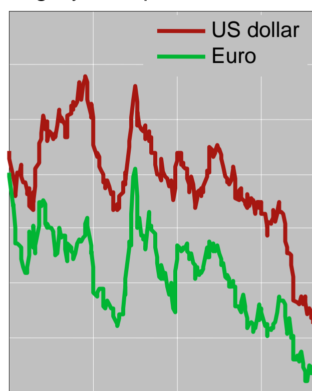


[1] Distribution at mid-month of option-adjusted spreads for the constituents of the Merrill Lynch A-rated US corporate bond index; difference from the median spread in basis points; fitted using a normal-based kernel probability density function. [2] January 1997–November 2004.

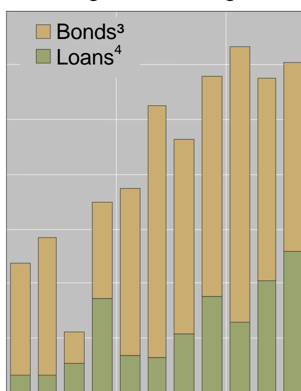
Sources: Merrill Lynch; BIS calculations. Graph 1.5

The search for yield

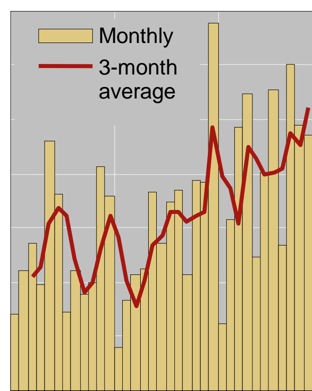
High-yield spreads[1]



Leveraged financing[2]



CDO issuance[2,5]



[1] Option-adjusted spread over government bond yields, in basis points; Merrill Lynch high-yield corporate bond indices. [2] In billions of US dollars. [3] Issuance of US high-yield bonds. [4] Signings of international syndicated credit facilities for leveraged or management buyouts. [5] Arbitrage-funded CDOs.

Sources: Bloomberg; Dealogic Loanware; JPMorgan Chase; Merrill Lynch. Graph 1.6

closely in November 2004 than they had on average since 1997, or even than they had earlier in 2004.

Demand from CDO managers

Demand from managers of collateralised debt obligations (CDOs) also helped to keep credit spreads narrow. Arbitrage CDOs are structured to take advantage of the fact that spreads on individual bonds tend to be wider than would be sufficient to cover likely losses from default in a well diversified bond portfolio.[2] After slowing in the early part of 2004, the issuance of such structures picked up in the second and third quarters (Graph 1.6). Owing to the tightness of credit spreads and the dearth of new issuance by higher-rated corporates, debt rated B or lower reportedly accounted for an increasing proportion of the collateral backing funded structures.

Significantly, the interaction of the above-mentioned factors tended to magnify the compression of spreads. Improvements in credit quality led to lower risk premia, which in turn strengthened investors' incentive to seek higher-yielding investments, including structured products such as CDOs, and put further downward pressure on risk premia.

Emerging market spreads touch new lows

Similar factors put downward pressure on emerging market spreads. After jumping sharply higher during the sell-off in global bond markets in April and May, spreads on emerging market debt gradually declined up to late November (Graph 1.7). On 26 November, the EMBI+ spread stood at 376 basis points, its lowest level since October 1997.

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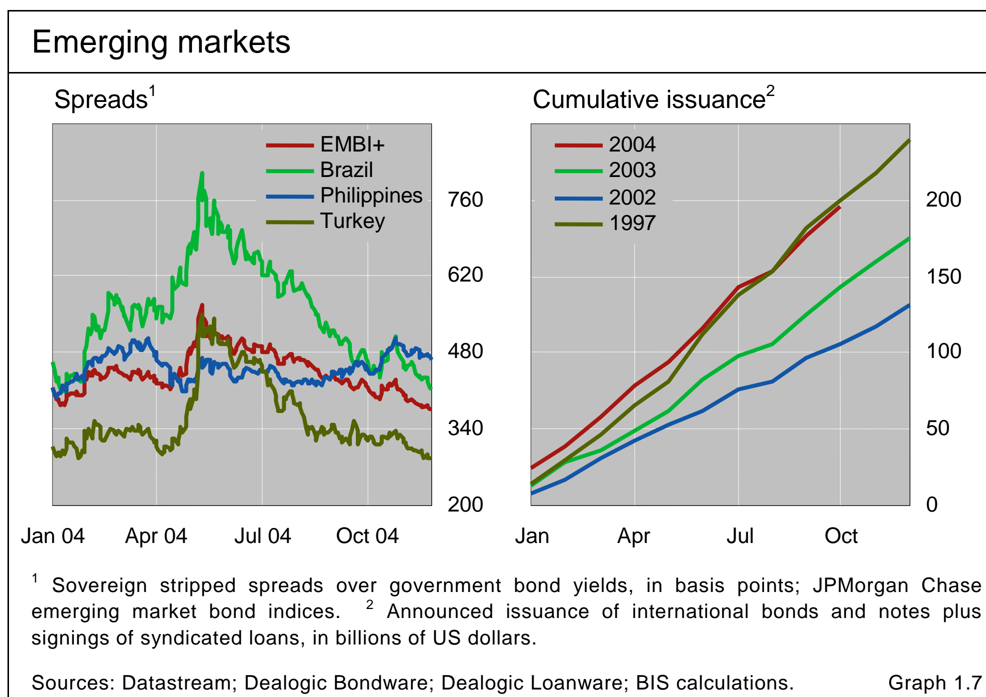
[2] See J Amato and E Remolona: "The credit spread puzzle", *BIS Quarterly Review*, December 2003, pp 51–63.



Emerging markets

[1] Sovereign stripped spreads over government bond yields, in basis points; JPMorgan Chase emerging market bond indices. [2] Announced issuance of international bonds and notes plus signings of syndicated loans, in billions of US dollars.

Sources: Datastream; Dealogic Bondware; Dealogic Loanware; BIS calculations. Graph 1.7

Emerging market issuance is on track to equal its 1997 high

Emerging market issuers continued to take advantage of the very favourable financing conditions on offer. Issuers not only raised substantial amounts in international bond and loan markets, they also borrowed at ever longer maturities and in a wider variety of currencies, including local currencies (see "The international debt securities market" on page 29). Emerging market borrowing in international bond and loan markets in 2004 is on track to equal its previous high in 1997. In a sign of investors' increased receptivity to innovative funding strategies, in November Colombia became only the second sovereign rated below investment grade to issue a regular global bond denominated in its own currency, thereby helping to reduce its vulnerability to currency mismatches (see "Assessing new perspectives on country risk" on page 47).[3]

Within this broadly improved market environment, fluctuations in commodity prices were a key source of uncertainty affecting emerging markets. High commodity prices have underpinned strong growth in many emerging markets in the last few years, especially in Latin America and Africa, and have contributed to improvements in current account balances. Base metal prices rose by 12% during September, but then reversed direction following the release of weaker than expected US employment figures on 8 October (Graph 1.4). On 13 October, prices on the London Metal Exchange dropped by nearly 10%, reportedly because of concerns about the outlook for the US and Chinese economies.

This cumulation of negative surprises caused emerging market spreads to widen noticeably in mid-October. Brazil, the Philippines and other countries

[3] Argentina was the first, issuing a global bond denominated in Argentine pesos in 1997. For the Colombian issue, all payments are denominated in Colombian pesos but paid in US dollars based on the average peso/dollar exchange rate calculated over a 28-day period prior to payment.

Temporary sell-off in emerging markets as metal prices drop

with large external debt burdens were among those most adversely affected. The sell-off proved temporary, however. Renewed confidence in the outlook for the United States plus reports of low inventories of certain commodities pushed metal and other non-oil commodity prices higher and emerging market spreads tighter in late October and early November.

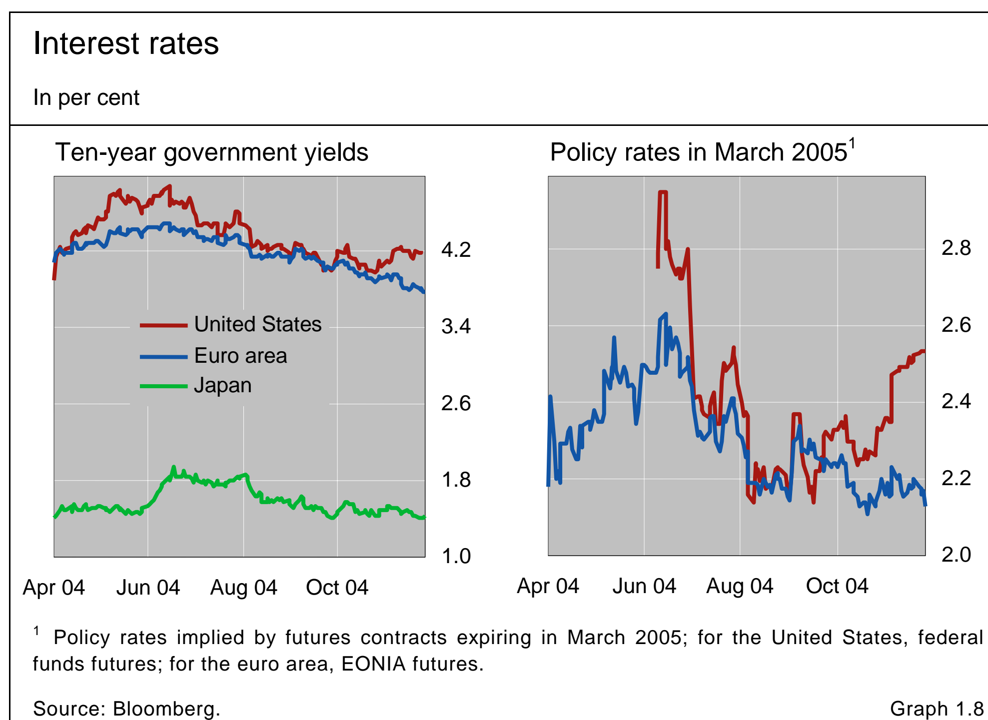
Unlike during previous sell-offs in emerging markets, spreads on Turkey's foreign currency bonds remained more or less unchanged in mid-October. The prospect of membership of the European Union helped Turkish spreads to decouple from those of other heavily indebted emerging economies. In early October, the European Commission recommended that accession negotiations with Turkey begin, a recommendation which market participants apparently expect EU governments to endorse in December.

Growing concern about the Philippines' debt burden

Whereas by late November spreads for most emerging markets were close to or below their lows for the year, concerns about the Philippine government's growing debt burden kept its spreads at an elevated level. Spreads began to widen in late August, when the president highlighted the urgency of fiscal restraint. They came under further pressure in October following warnings of a possible downgrade by the major rating agencies. Delays in passing legislation intended to boost government revenues added to the negative sentiment.

Long-term yields remain low

Even as equity, credit and emerging markets all rallied, long-term yields stayed well below their June highs. From their peak on 14 June, yields on 10-year US Treasuries fell by 90 basis points to 4% on 22 September (Graph 1.8). They subsequently fluctuated within a 25 basis point range, stabilising at 4.2% in late



[1] Policy rates implied by futures contracts expiring in March 2005; for the United States, federal funds futures; for the euro area, EONIA futures.

Source: Bloomberg. Graph 1.8

November before rising again at the end of the month. Yen yields followed a similar pattern. Euro yields continued to drift down until late November, two months after US yields had bottomed.

Yields remain low even as the inflation outlook deteriorates

While stable inflation expectations contributed to the decline in long-term yields up to September, in subsequent months yields remained low even as the inflation outlook deteriorated. Economists' inflation forecasts, which had been revised sharply upwards in the second quarter, continued to creep upwards in the third and fourth quarters. Similarly, break-even inflation rates implied by yields on inflation-linked bonds moved higher in the fourth quarter, most notably in the United States, after declining in the third. Even after the fall in oil prices in late October, the inflation outlook in the United States in particular continued to deteriorate. Nevertheless, the shift in expectations did not lead to market turbulence; implied volatilities in the major bond markets declined to their lowest level in years (see the box on page 13).

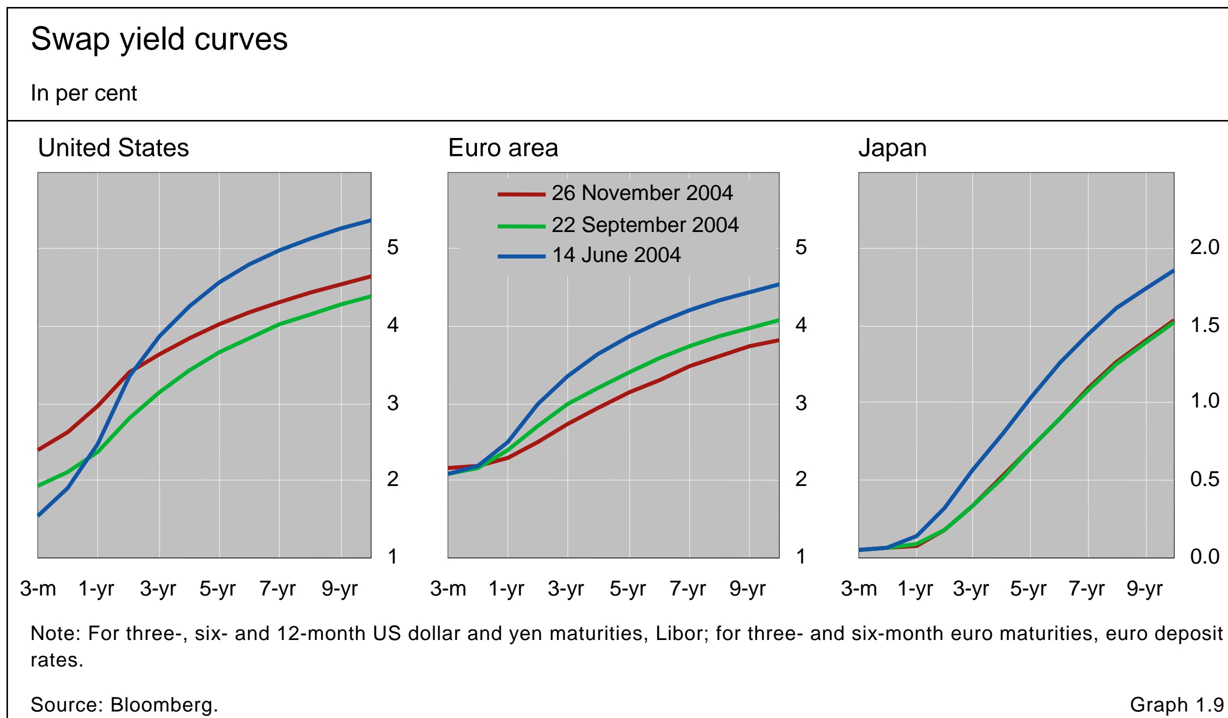
Bond investors remained especially sensitive to changing expectations about US policy rates. Actual policy decisions, which amounted to a cumulative increase of 100 basis points in the target federal funds rate between June and November, by themselves had little impact on long-term yields. These increases had been anticipated by market participants since mid-year and were already incorporated in yields. Instead, bond markets focused on data releases and official statements that were thought to offer signals about what the Federal Reserve was likely to do in 2005 and beyond. As the growth outlook firmed and investors revised their expectations about the likely path of monetary policy, the dollar yield curve moved out in parallel, by approximately 20 basis points between late September and late November (Graph 1.9).

Largest yield movements follow surprises in US payroll data

For some time now, the widely held perception among market participants has been that conditions in the US labour market would be an important determinant of the pace of monetary tightening. As a result, in recent months the largest changes in yields have tended to be associated with surprises in US employment data. Whereas between January 1998 and July 2003 an unexpected change in non-farm payrolls of 100,000 jobs had led on average to a 2 basis point change in 10-year yields, over the past year the impact has been closer to 10 basis points.[4] The impact of the payroll announcements has tended to be determined as much by the picture they give of labour market developments over the past several months as by that of the immediately preceding month. Thus, even though the August payroll data released on 3 September were in line with expectations, yields jumped by 10 basis points on that date because of upward revisions to the June and July data.

In Japanese and euro area long-term debt markets, the largest daily movements also tended to be associated with US macroeconomic announcements; the impact of domestic news was more muted, as has long been the case. For example, yields on 10-year German government bonds fell by 7 basis points in response to the surprisingly weak US employment report released on 8 October. Yet the release of an unexpectedly strong Ifo survey of

[4] See Bank for International Settlements, *74th Annual Report*, 28 June 2004, p 105.



Note: For three-, six- and 12-month US dollar and yen maturities, Libor; for three- and six-month euro maturities, euro deposit rates.

Source: Bloomberg. Graph 1.9

German business confidence on 25 October produced virtually no change in euro yields.

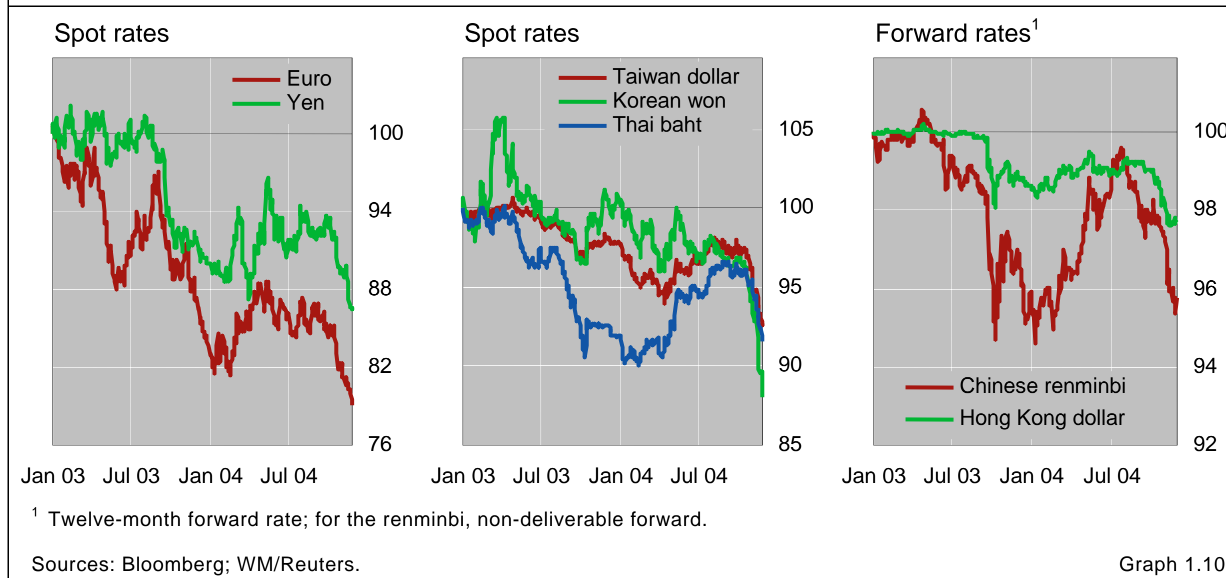
Euro and yen yields diverge from dollar yields

The high correlation of daily movements notwithstanding, longer-term trends in yen and especially euro yields were less closely aligned with movements in dollar yields than they had been in the third quarter. In the first two weeks of November in particular, yen and euro yields declined while dollar yields moved higher. Changing expectations regarding the economic outlook were in part responsible for the divergence in yields. Investors remained sceptical about the strength of the recovery in Japan and the euro area even as they grew more confident about the recovery in the United States.

Renewed depreciation of the US dollar

Investors focus on the US current account deficit ...

Despite the surprisingly strong macroeconomic releases in the United States in November, the US dollar depreciated to new lows against many currencies during the period under review (Graph 1.10). The dollar began to weaken following the release of data on 14 October showing the US trade deficit in August to have been the second largest on record. The slide in the dollar gained momentum a few days later on news that foreign purchases of US securities had slowed unexpectedly in August. The slowdown in purchases was seen by some market participants as confirmation that Asian central banks and oil exporters were diversifying out of US dollars and into euros in particular (see "The international banking market" on page 15). If such a portfolio shift were to persist, it could undermine the sustainability of the large US current account deficits that have emerged in recent years. Comments on 18 November by the chairman of the Federal Reserve Board about the financing of the US current account deficit added to negative sentiment towards the dollar.



[1] Twelve-month forward rate; for the renminbi, non-deliverable forward.

Sources: Bloomberg; WM/Reuters. Graph 1.10

The depreciation of the US dollar appeared to contribute to the divergence between euro and dollar yields. On 25 November the euro reached a new high against the dollar, just shy of $1.33. The strength of the euro was seen as potentially dampening growth in the euro area and reducing the likelihood of an increase in policy rates in the near term, thereby putting downward pressure on euro yields. At the same time, portfolio shifts out of dollars reportedly added to upward pressure on dollar yields.

... and drive the dollar to new lows against many currencies

Asian currencies also rose against the US dollar. Between the end of September and the end of November, the yen and Korean won appreciated by 6% and 9%, respectively, against the US dollar, to their highest level in years. The Chinese renminbi and Hong Kong dollar also came under heightened pressure. Expectations of a revaluation of the renminbi increased markedly on 5 November following comments by Chinese officials that were interpreted as suggesting that some fluctuation in the exchange rate was desirable. A few days earlier the Chinese monetary authorities had for the first time in nearly a decade raised interest rates with the aim of preventing the economy from overheating. The move was significant not because of the direct effect of the higher rates but because it signalled that the Chinese authorities were increasingly turning to market mechanisms to guide the economy.

The recent decline in volatility

Volatility in equity and bond markets has been declining for most of the past two years. This has been the case even at times when markets seem to have been shaken by data surprises regarding the strength of the global recovery. In the equity market, the realised volatility for returns on the S&P 500 fell from over 35% in October 2002 to 10% in July 2004, and remained at this level till late November. The implied volatility in corresponding option prices slid from 34% to 15%. In the bond market, the realised volatility of 10-year US Treasury returns declined from over 9% in early August 2003 to around 5% in late November 2004, its lowest level since the summer of 2001. The implied volatility derived from option prices fell from 10% to 5%.

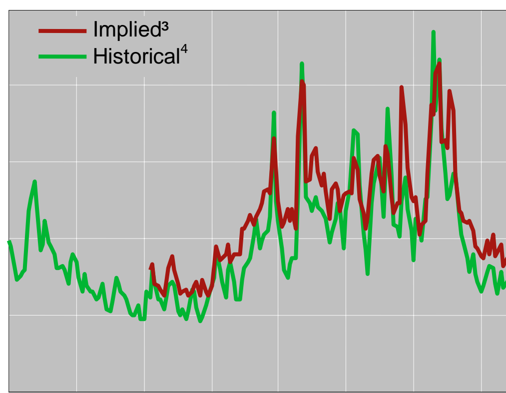
In trying to understand the factors behind these movements in volatility, the timing of the declines is helpful. In equity markets, the decline started around October 2002. This was the end of an extended period of unusual volatility, marked by the rise and collapse of a market bubble and by serious accounting scandals. It was also the beginning of a period of improved corporate earnings growth and stronger balance sheets. With improved balance sheets, the leverage effect usually associated with high volatility seems to have been dampened, a factor that has also resulted in narrower credit spreads. In addition, the rally that followed the long bear market of 2000–02 may have reduced the fear that the market is vulnerable to a further large correction.

In bond markets, volatility seems to have reached a peak during the summer of 2003. This turbulent period was a time when market participants had apparently misjudged the likelihood of the US Federal Reserve's recourse to unconventional policy measures. The central bank's decision on 25 June to cut its policy rate by 25 basis points rather than the expected 50 basis points served to stabilise market participants' expectations. Subsequent signals and statements from the Fed seem to have contributed to a remarkably high degree of agreement among market participants about the future path of policy rates. The resulting decline in volatility took place in spite of occasionally sharp shifts in expectations about the underlying recovery, especially at the time of releases of US non-farm payroll data. The effectiveness with which monetary authorities have been able to communicate their intentions seems to have nullified the effects of the data surprises.

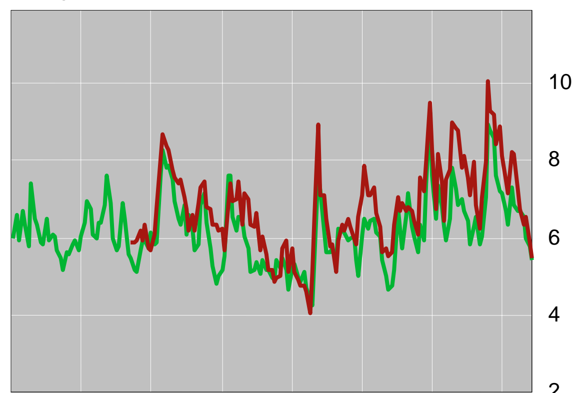
A second factor contributing to the decline in volatility in the US bond market in particular has been a reduced incidence of yield movements related to the hedging of mortgage portfolios. On a number of previous occasions, most recently in August 2003, rising long-term yields led to increases in the duration of portfolios of mortgage-backed bonds as borrowers reduced their refinancing activity. This in turn led to increased hedging activity, which caused long-term yields to temporarily rise further. This effect appears to have been less strong in 2004 than it was previously; for example, the rise in yields in April 2004 was associated with only a small increase in volatility. The long period of relatively low nominal yields may have reduced the scope for additional refinancing, so that unexpected shifts in refinancing patterns no longer take markets by surprise.

Measures of volatility[1]

S&P 500



US government bonds[2]



[1] Annualised daily volatility; monthly averages. [2] Ten-year futures contracts. [3] Volatility implied by the price of at-the-money call options. [4] Conditional volatility of daily returns estimated over the period January 1990–November 2004 using a GARCH(1,1).

Sources: Bloomberg; Merrill Lynch; BIS calculations.