

Overview: markets reprice to reflect risks to growth

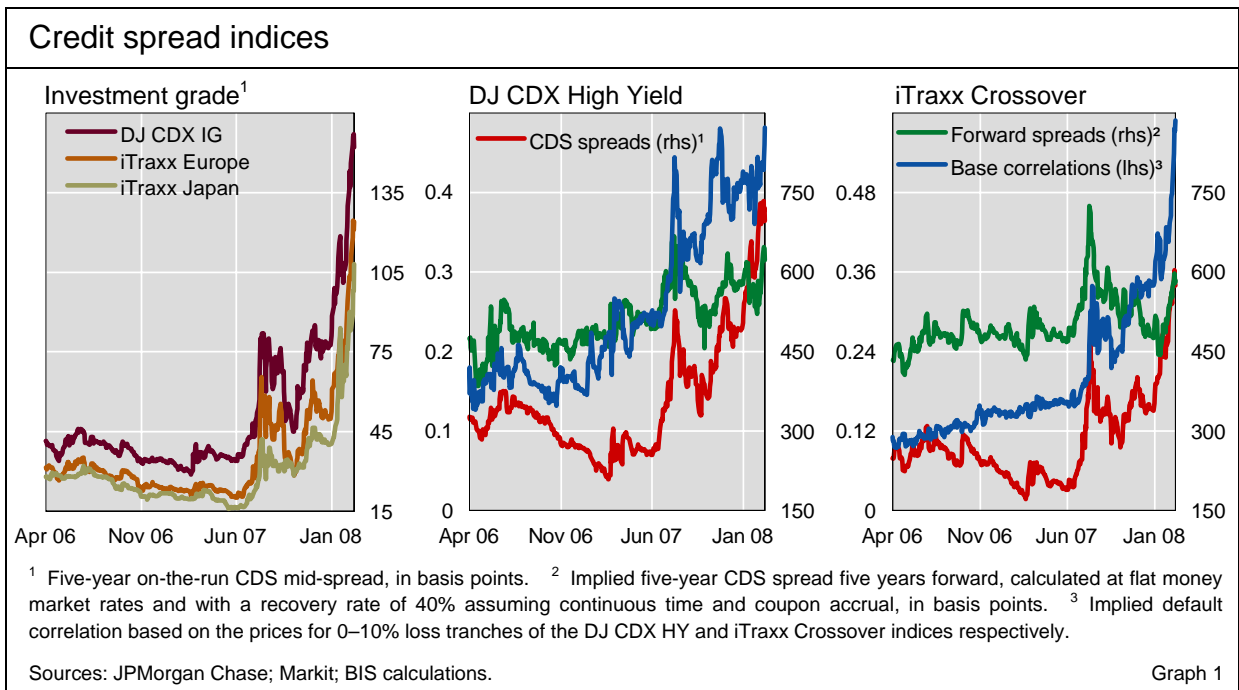
After a relatively calm December that saw markets broadly unchanged, accumulating evidence of a real-side slowdown prompted a broad-based repricing of growth risk and associated shifts in policy expectations in January. While tensions in the money markets eased somewhat during the period under review, weak US macroeconomic data releases, combined with further large-scale bank writedowns and concerns about financial guarantors, increased the perceived chances of global financial stress spilling over into the real economy.

When investors realised that the economic fallout from the credit crisis might not be confined to the United States, asset markets sold off across the board. Credit spreads, which had in fact reflected concerns about broader economic weakness for some time, reached new peaks against the background of growing financial sector strains. Global equity markets saw sharp declines in January as well, as investors revised downwards their expectations of future profitability. However, equities rebounded in February, outperforming credit markets, supported by repeated US monetary policy action. Investors, in turn, were quick to price in additional easing by the US Federal Reserve and by other central banks, anticipating further evidence of slowing growth. Long-term inflation-linked government bond yields declined, and more so than nominal yields, pushing up break-even inflation rates in the United States.

While price reactions to credit market stress had previously been more pronounced among industrialised economies, concerns over a more widespread growth slowdown clearly began to weigh on many emerging financial markets over the period. Equity markets, including those that had shown previous resilience, recorded the most pronounced weakness.

Credit markets deteriorate further

Global credit markets once again experienced considerable volatility and saw spreads rise sharply across the board, as further large writedowns of credit exposures by major financial institutions and continued negative news from the US housing sector deepened concerns about a weakening macroeconomy. Between end-November and 22 February, the US five-year CDX high-yield index spread rose by 204 basis points to 696, while corresponding investment grade spreads moved by 76 basis points to 152. Spreads had narrowed early in the period, before rising precipitously from 10 December, with investment



grade names underperforming lower-quality credit (Graph 1, left-hand and centre panels). European and Japanese indices broadly mirrored the performance of their US counterparts. The five-year iTraxx Crossover CDS index climbed 227 basis points to 575, while investment grade spreads rose by 71 basis points to 124. Spreads on the iTraxx Japan index also widened considerably, to around 108 basis points, up 66 from the start of the period. All five indices had moved to the widest levels since their inception back in 2004 on or around 22 January, before reaching even higher peaks by late February (Graph 1, left- and right-hand panels).

By the end of the period under review, credit spreads had thus risen to levels that would compensate buy and hold investors for a relatively sharp increase in realised default rates from their current near record low levels (Graph 2, centre panel). Expectations of a cyclical increase in defaults were also apparent from rising default correlations implied by tranching index products, which pointed to a rise in the weight attached by investors to systematic as opposed to firm-specific risk factors. Implied forward spreads, in turn, suggested that much of this added risk was anticipated for the near term, reflecting longer-term expectations of an eventual reversion in default rates as well as counterparty risk concerns (Graph 1, centre and right-hand panels).

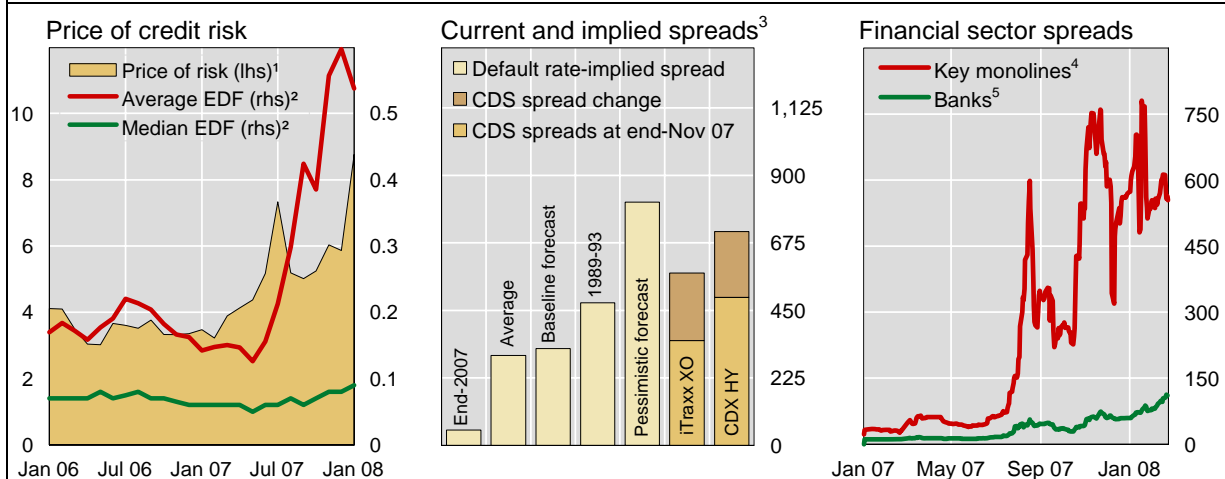
At the same time, as various risk premia are known to account for sizeable fractions of observed spreads, realised spread levels were unlikely to fully reflect the risks of an economic downturn. While risk tolerance remained at depressed levels (Graph 2, left-hand panel), high-yield credit continued to trade some 350 basis points below the highest comparable cash spreads reached in 2001–02. And spreads remained well below the levels that would fully compensate buy and hold investors were pessimistic forecasts of future defaults to be realised (Graph 2, centre panel).

After a short lull in December, credit market sentiment deteriorated once again in the new year, following the release of data in early January indicating

Higher expectations of default ...

... reflect weak economic data ...

Price of risk, default rates and sectoral credit spreads



¹ Ratio of risk neutral to empirical probabilities of default. Empirical probabilities are based on Moody's-KMV EDF data. Estimates of risk neutral probabilities are derived from US dollar CDS spreads (document clause MR) and estimates of the recovery rate. The reported ratio is the value for the median name in a large sample of BBB-rated and non-investment grade entities. ² In per cent. ³ Implied spreads from Moody's global cumulative speculative grade default rates based on a recovery rate of 40%, constant hazard rates, and a risk premium of zero. Calculated for end-2007 one-year default rates, average five-year default rates (1983–2006), five-year cohort default rates (1989–93), and Moody's default rate forecasts up to end-2012; in basis points. ⁴ CDS spreads for seven financial guarantors. ⁵ CDS spreads for a sample of 25 commercial, investment and universal banks from Europe and the United States (average Markit rating of AA).

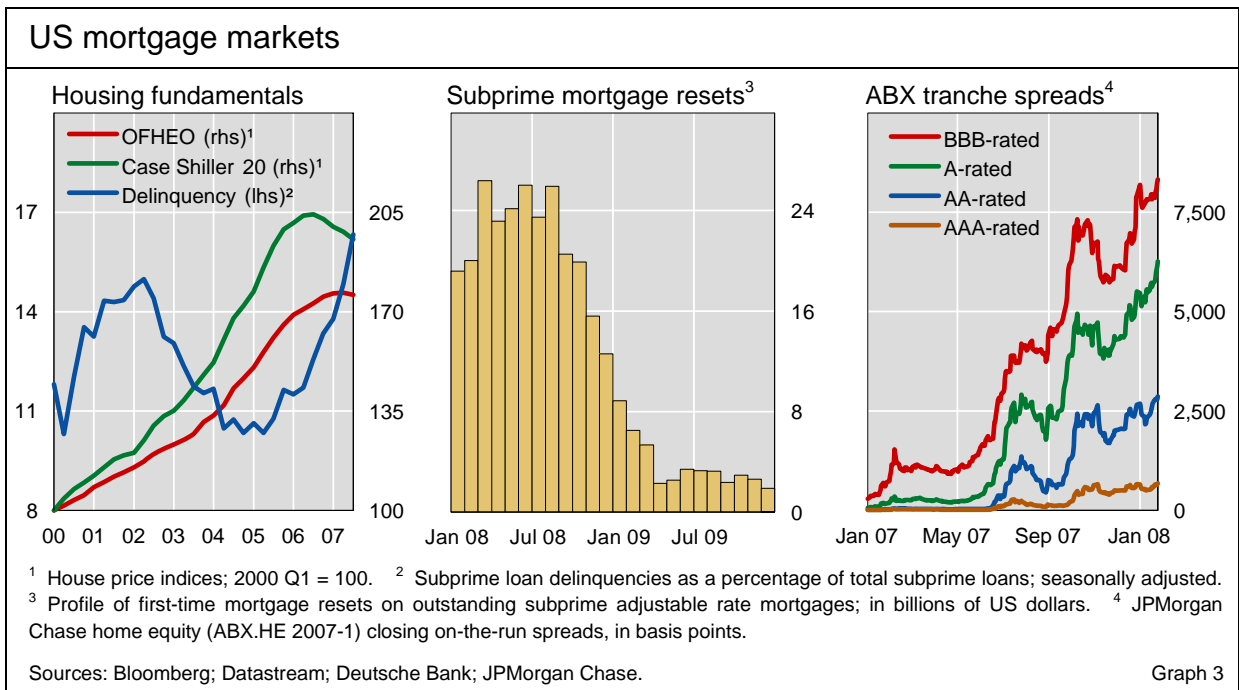
Sources: Bloomberg; Markit; BIS calculations.

Graph 2

weak growth in the US manufacturing sector and disappointing labour market developments. With some \$250 billion worth of subprime loans estimated to see their first interest rate resets in 2008, a further weakening in house prices and rising unemployment expected to feed into even higher delinquencies, mortgage markets sold off once again. The ABX.HE indices, which reference securities backed by subprime mortgage loans, saw their spreads widen beyond the peak levels established in November. By 22 February, aided by falling Libor rates, prices for the 07-1 BBB– index had thus declined to imply total writedowns of all underlying bonds by late 2009 (Graph 3).

... and continuing financial sector strains

One catalyst for the renewed credit market weakness was continued uncertainty about the ability of the financial system to provide and allocate credit. Parts of the credit market remained largely dysfunctional, with asset-backed issuance volumes down, high-yield bond markets effectively closed, and large backlogs of leveraged loan deals still awaiting financing. Against this background, bank balance sheets continued to be under pressure and financial sector spreads saw renewed widening from mid-January (Graph 2, right-hand panel), adding to perceptions of systemic risk (see box on pages 6–7). Citigroup posted a fourth quarter loss on 15 January, due in part to additional writedowns of \$18 billion on mortgage-related exposures. This was followed, during subsequent weeks, by similar news from other financial institutions both within and outside the United States. Although its impact on capital positions was partially offset by injections from sovereign wealth funds and other investors, this new round of large-scale writedowns brought the global total of such charges to around \$150 billion. Since a number of earnings announcements also included significant increases in provisions related to



banks' consumer activities, and with spreads on commercial mortgage as well as leveraged loan products widening, projected losses outside the residential mortgage business appeared to be on the rise. This pointed to further strains for financial sector balance sheets and tighter credit conditions ahead.

These strains occurred despite signs of improvement in some markets, such as those for asset-backed commercial paper (ABCP). Spreads narrowed from the highs reached at the end of 2007 and, helped by a number of bailouts of troubled structured investment vehicles (SIVs) by their sponsoring institutions, volumes saw a series of weekly expansions after several months of contraction. The maturity profile of outstanding paper also improved, though at the cost of declining volumes in February, highlighting the continued fragility of the market (Graph 4).

Signs of improvement in ABCP markets

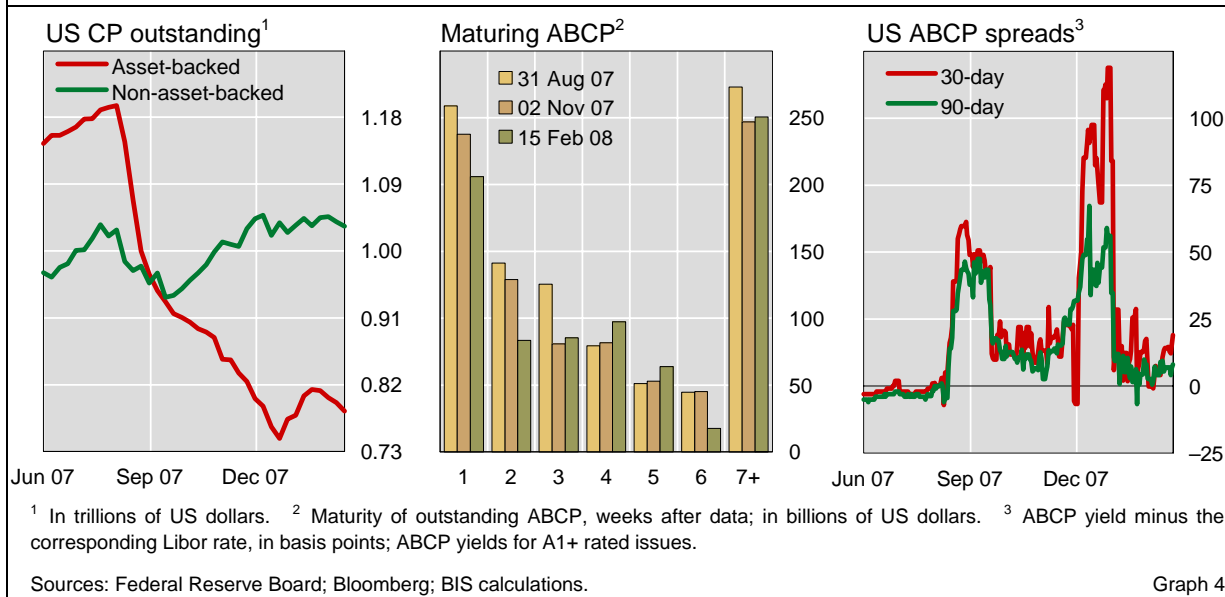
Looming downgrades of monoline financial guarantors proved to be another factor weighing on credit markets. Mark to market losses on insurance written on structured instruments had accumulated in the second half of 2007, triggering large-scale spread increases and reviews of the credit ratings assigned to these companies (Graph 2, right-hand panel). Standard & Poor's had downgraded ACA, a smaller guarantor, from A to CCC in December, giving rise to fears about counterparty risk when the company was unable to meet resulting margin calls. In response, markets increasingly focused on potential downgrades of the bigger AAA-rated monolines, which insure some \$2.4 trillion worth of public and structured finance debt.

Concerns about monoline downgrades ...

As the ratings of such guaranteed securities tend to be contingent on those of the financial guarantor, rating actions on large monolines were expected to translate into broad-based downgrades of insured bonds and tranches. Related concerns materialised on 18 January, when Fitch downgraded Ambac by two notches from AAA, and also later in the month, when the ratings of SCA and FGIC were cut by the same rating agency. Some 290,000 monoline-insured issues, mostly municipal bonds, were downgraded

... and associated writedowns ...

Asset-backed commercial paper (ABCP) markets



as a result. Reflecting these and anticipated future downgrades, municipal paper spreads moved to levels which partially discounted existing monoline guarantees. In turn, associated drops in market values and writedowns on monoline-insured exposures to senior structured finance tranches added to losses already incurred by banks and other investors.

... contribute to market volatility ...

Nervousness about feedback effects between these developments and the economic outlook reached a peak later in the month, fuelling volatility across all major asset markets. On 22 January, US investment grade spreads gapped up in early trading, before rallying to close a relatively modest 7 basis points up from the previous trading day. These moves followed not only a long holiday weekend in the United States during which financial markets in other regions had fallen sharply, but also a surprise 75 basis point inter-meeting cut in the federal funds target to 3.5%, which represented the largest one-day change since 1994 and the first one between scheduled meetings since 17 September 2001. High-yield spreads closed 30 basis points wider, but well off their widest intraday levels. Spreads retreated from these peaks during the following days, helped by another 50 basis point adjustment in the federal funds rate on 30 January and congressional approval of a significant fiscal stimulus package in the United States. However, markets remained volatile into February, reflecting further indications of an economic slowdown throughout the major industrialised economies and a continuous flow of financial sector news. This included additional monoline downgrades as well as related recapitalisations and restructuring plans, reports by a large insurer about increased loss estimates for exposures similar to those of the monolines, and renewed concerns about unwinds of structured instruments. By late month, in a sign of an increasing investor focus on interactions between growth risk and financial sector health, spreads on many major credit indices had thus widened beyond their previous peaks, underperforming other asset markets in the process.

... and unwinds of structural exposure

Market perceptions of systemic risk in the banking industry

Nikola Tarashev and Haibin Zhu

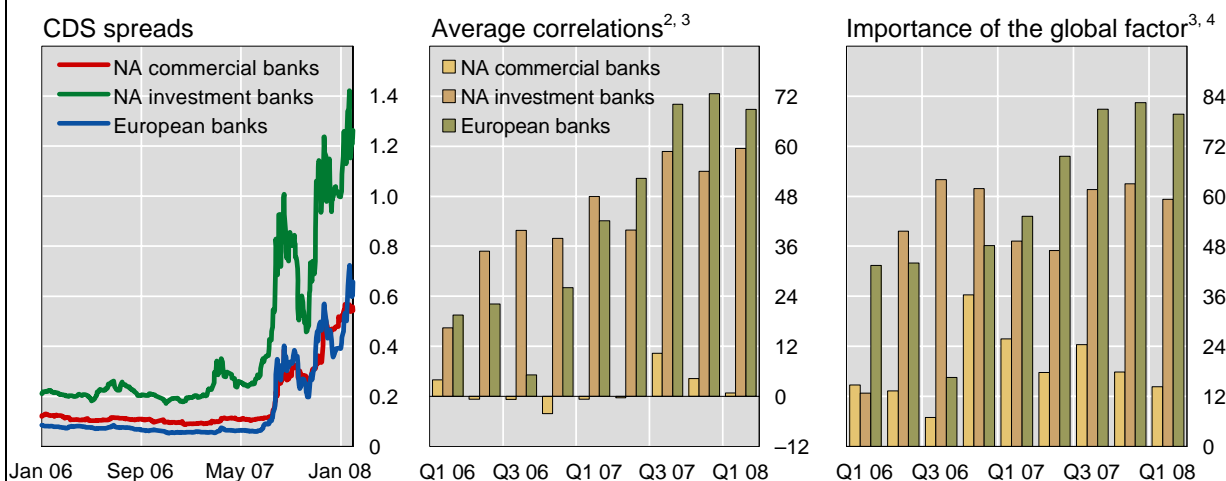
Since the onset of the financial turmoil in the third quarter of 2007, many banks have experienced significant strains, mainly as a result of substantial losses on mortgage-related exposures. To assess the impact of these developments on investors' perceptions of "systemic risk" in the banking industry, this box analyses the credit default swap (CDS) spreads for a sample of large internationally active banks. The main finding of the analysis is that increases in both the level and the co-movement of CDS spreads over the last six months suggest a marked rise in estimated prices of insurance against systemic distress.

CDS spreads represent market prices of insurance against the failure of individual institutions to meet their debt obligations. Thus, the average level and the co-movement of spreads are directly related to perceptions of systemic risk. However, being the price of insurance, CDS spreads reflect not only assessments of the *actual* credit risk associated with a particular institution but also the market *premium* for bearing this risk.^① Importantly, in periods of stress and uncertainty, much, if not most, of the level and co-movement of spreads might be driven by attitude towards risk as opposed to by assessments of risk.

The *level* of CDS spreads jumped with the onset of the financial turmoil and has been on an upward trend since then, despite temporary declines that were partly driven by central bank actions (Graph A, left-hand panel). Average spreads increased the most for North American investment banks, from 0.5% in July 2007 to a temporary peak of 1% in August 2007 and then to 1.4% in January 2008. For North American commercial banks and European universal banks, CDS spreads increased by relatively less and have not differed much from each other over the last six months.^②

For any given level of CDS spreads, an increase in their *co-movement* implies that the market perceives a greater likelihood of *joint* defaults and, thus, higher systemic risk. This box measures this co-movement via estimates of asset-return correlations, which rose in the third quarter of 2007 for all three banking segments, albeit by a varying amount (Graph A, centre panel). An increase in asset-return correlation since the beginning of 2006 is noticeable for European banks and North American investment banks, from roughly 20% to about 60–70%. By contrast, over the whole period, correlations remained quite low for the sample of North American commercial banks.

Measures of systemic risk¹

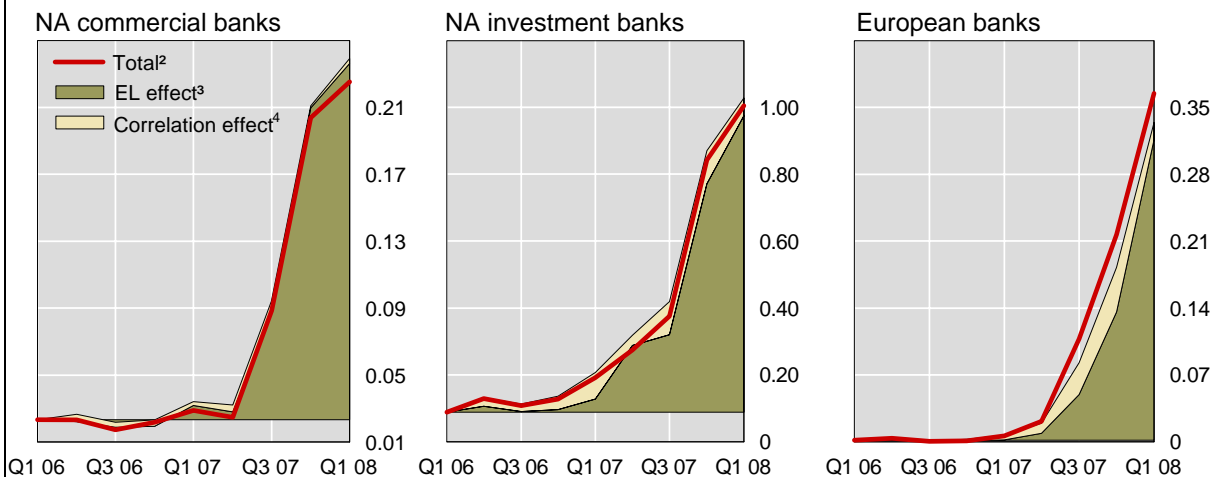


¹ In per cent. The sample comprises eight commercial and six investment banks headquartered in North America and 11 universal banks headquartered in Europe. ² Three-month backward-looking asset-return correlations. ³ For the estimation procedure, see N Tarashev and H Zhu, *BIS Working Papers*, no 214, 2006. ⁴ The share of asset-return volatility that is accounted for by the single most important factor of the asset returns of all 25 banks.

Sources: Markit; authors' calculations.

Graph A

Price of insurance against distress¹



¹ Based on the same data sample as Graph A, in per cent. ² Risk neutral expectation of credit losses that equal or exceed 15% of the corresponding banking sector's liabilities in 2006 (per unit of exposure to these liabilities). The size of the assumed exposure to a particular bank is proportional to that bank's total outstanding liabilities in 2006. ³ Cumulative effect of changes in risk neutral ELs on the price of insurance against distress. In each quarter, correlations are held fixed at their levels in the previous quarter. ⁴ Cumulative effect of changes in asset-return correlations on the price of insurance against distress. In each quarter, ELs are held fixed at their levels in the previous quarter.

Sources: Bankscope; Markit; authors' calculations.

Graph B

Factor analysis of this co-movement suggests that the differences in asset-return correlations across banking segments are largely driven by an (unobservable) *global* risk factor – ie a factor which, by construction, is common to all the returns in the sample (Graph A, right-hand panel). Since the third quarter of 2007, this factor has accounted for an estimated 80% of the volatility of European banks' asset returns, up from 20% in mid-2006. For North American investment banks, this share has remained relatively stable, at roughly 60% since 2006. In comparison, North American commercial banks' exposure to the same global factor has been much lower.

Both the level and the co-movement of bank spreads suggest that the CDS market has factored in an increase in the price of systemic risk from its very low levels in 2006 and the first half of 2007. This is illustrated by Graph B, which plots the "price of insurance against distress", defined as the implied cost of protection against credit losses that equal or exceed 15% of a sample of banks' total liabilities.[Ⓢ] This price is dissected into a component that reflects changes in average expected losses (ELs) and another component that reflects changes in asset-return correlations.

The price of insurance against sector-wide distress has generally increased over the last two years but at rates that have varied over time and across banking segments. Driven purely by rising ELs associated with individual institutions, this price rose almost eightfold for the North American commercial banks in the sample, from about 0.03% of their liabilities between the beginning of 2006 and mid-2007 to 0.23% most recently (Graph B, left-hand panel).[Ⓢ] The corresponding rise for the sample of European banks has been more pronounced, from negligible levels to 0.36%, driven by increases in both ELs and asset-return correlations (Graph B, right-hand panel). Finally, since the beginning of 2006, ELs and asset-return correlations have underpinned the steady growth in the price of insurance against distress at the North American investment banks in the sample. This price is estimated to currently stand at 1% of the institutions' total liabilities (Graph B, centre panel), considerably higher than that for the other two sectors.

[Ⓢ] In technical terms, CDS spreads reflect so-called "risk neutral" measures of expected losses (ELs). [Ⓢ] The available time series of CDS market data precludes a useful comparison between recent spread levels and levels realised during previous periods of market stress, eg 2001–02. [Ⓢ] In qualitative terms, the results in Graph B are robust to changing this threshold between 10 and 30%. [Ⓢ] The interaction between EL and correlation effects implies that these two effects need not add up to the total price of insurance against distress.

US recession concerns spark equity sell-off in January

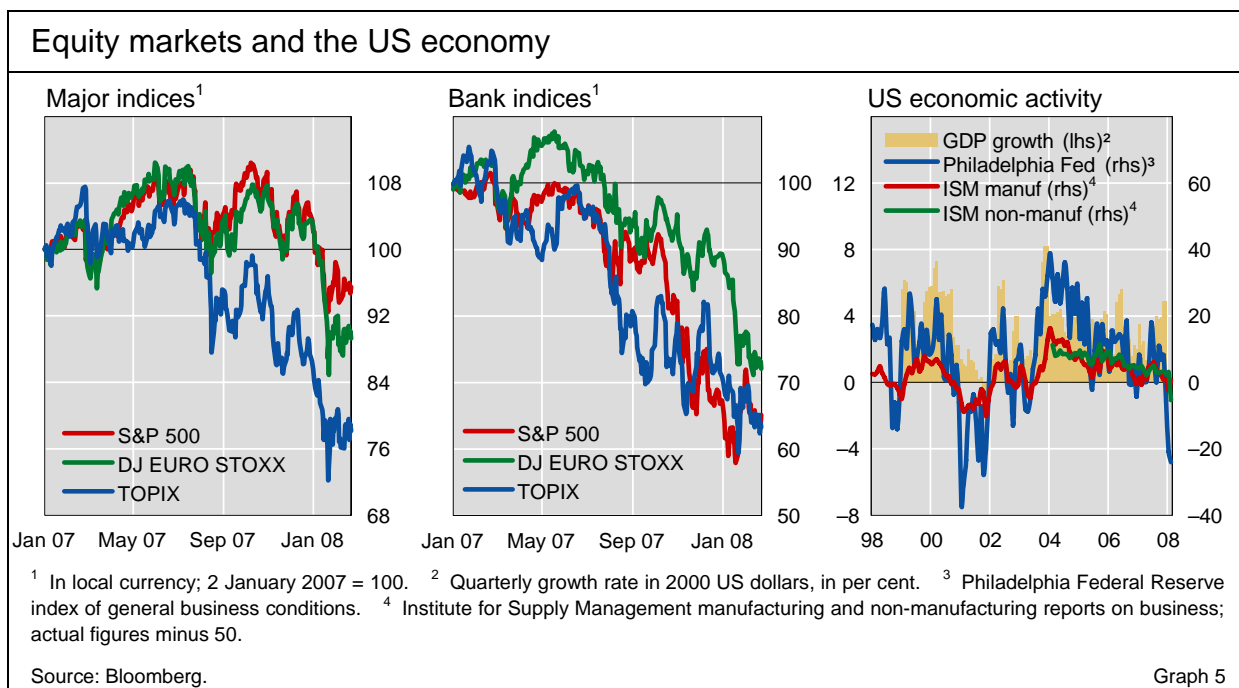
Equity markets were subject to much the same concerns as their credit counterparts, with weak US macroeconomic data and more bad news about financial sector exposures contributing to a global sell-off in January. By 22 January, the S&P 500 was down 11% for the month, the worst performance over a similar period since October 2002 (Graph 5, left-hand panel). Equity markets in Japan and Europe also reacted to the deteriorating situation in the United States, losing 17% and 15% over the same period respectively. Equity prices bottomed out around 22 January, following the unanticipated reduction in US short-term interest rates and news of possible capital injections into the monoline insurers. Markets rebounded somewhat in late January, but subsequently gave up much of these gains in February, as further evidence of economic weakness emerged.

Concerns that the slowdown in the United States might turn out to be more severe than expected came to the forefront in the period under review, as evidence of weaker real economic activity accumulated. Equity markets in the United States were volatile but stable overall in December, with the S&P 500 closing on 26 December up 1% for the month. However, a weak durable goods orders number and an unexpected rise in jobless claims the following day led to a 1.4% decline in the index, and marked the beginning of a downward trend in equity markets. Weak purchasing managers' and employment data releases in early January further soured the mood of investors. Then, on 17 January, the Philadelphia Fed manufacturing index hit its lowest level since 2001, pushing the S&P 500 Index down 2.9% on the day, or more than 9% for the month (Graph 5, left-hand panel).

This build-up of bad news concerning the US economy culminated in a global sell-off in equity markets on 21 January, a day when US markets were

Weak real-side activity in the United States ...

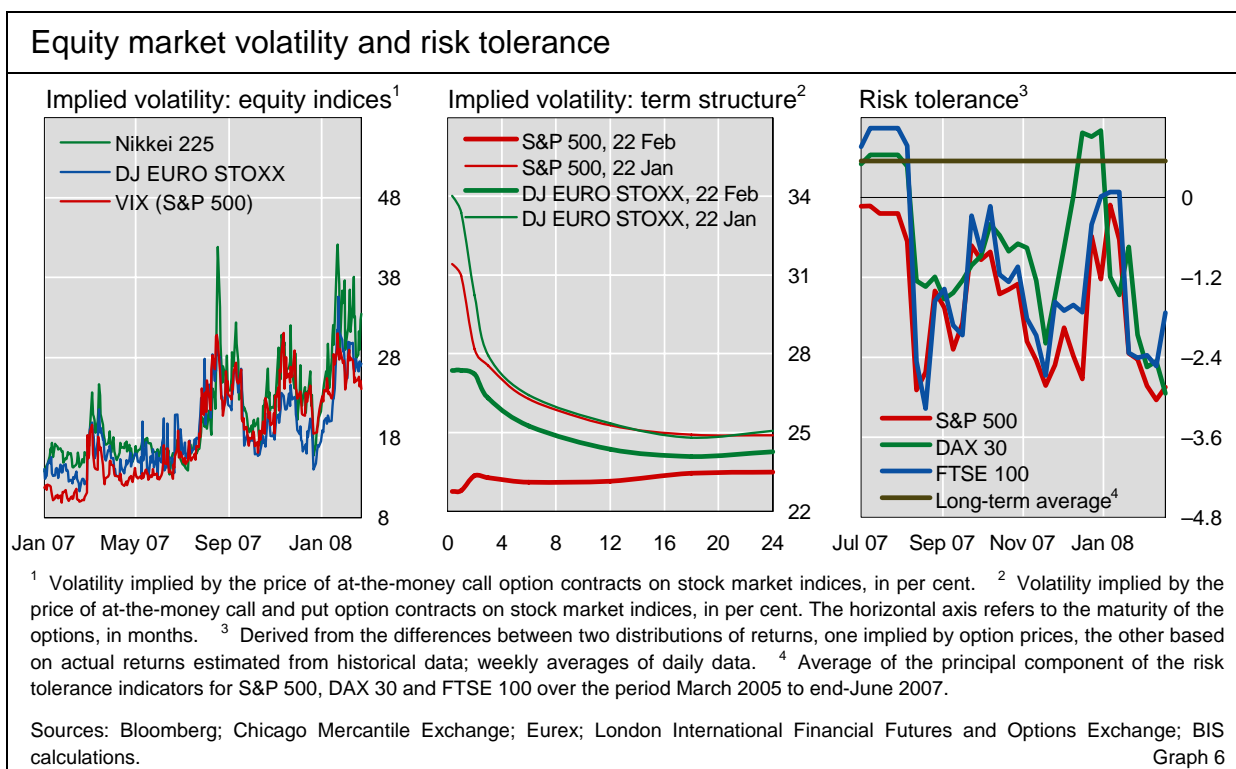
... culminates in a global equity sell-off ...



closed. Most major markets saw declines, with the DJ EURO STOXX index down by 6.5%, the largest daily drop since the inception of the index at end-1991, and the TOPIX index down 3.6% and an additional 5.7% the following day. Banks and insurance companies were hit the hardest, reflecting in part concerns over the health of the monoline insurers that followed on the announcement by Fitch that Ambac had been downgraded the previous Friday. Futures prices on the S&P 500 indicated that investors expected a similar rout when markets resumed trading, on 22 January. The unanticipated cut by the Federal Reserve in short-term interest rates on the morning of 22 January, before markets opened in the United States, seemed to temporarily stabilise markets. Equities sold off in the morning hours, but later recovered somewhat, leaving the S&P 500 down 1% from its Friday close. Markets rallied over the following week until the gains were all but eliminated by additional evidence of macroeconomic weakness in the service sector and more bad news about the monoline insurers on 5 February. By 22 February, the S&P 500 Index was up 3% from its 22 January low, but still down 8% for the year.

... and a decline in investors' tolerance for risk

Market-based indicators of investors' tolerance for risk showed sharp declines as equities sold off and volatility increased in January. Option-implied market volatility in the United States, which had risen for most of the month, jumped on 22 January to as high as 31%, a level last seen in mid-November, and considerably higher than the 2004–06 average of 14% (Graph 6, left-hand panel). To some extent, market participants considered this a relatively short-term phenomenon, with readings of the term structure of implied volatility taken on that day dropping off fairly quickly at longer maturities (Graph 6, centre panel). That said, investors still expected volatility levels above 22% for the foreseeable future, almost double the levels reached in early 2007. By

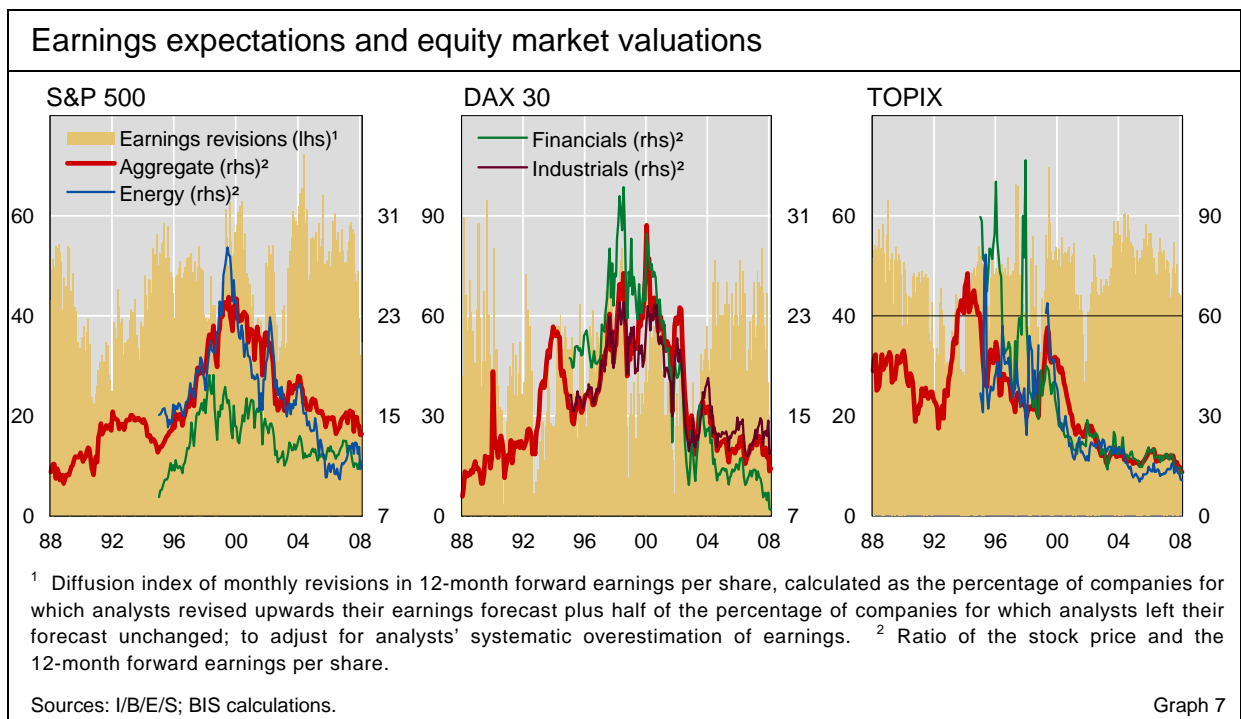


22 February, they had revised these expectations only slightly. Investors' tolerance for risk, measured by differences in the statistical distribution of actual equity returns and expected returns implied by option prices, deteriorated during the sell-off. Indeed, the mid-February readings for US and German markets sank to their lowest levels since the credit crisis began in August (Graph 6, right-hand panel).

Incoming data on fourth quarter 2007 US corporate earnings did little to soothe equity investors during the period. Cumulative earnings per share fell by 17% (year over year, share-weighted basis) in the fourth quarter, considerably more than the 2.5% decline in the previous quarter. Overall growth was dragged down by particularly poor results in the consumer durables industry (-167%) and the financial sector (-108%), the latter reflecting large writedowns by commercial banks during the quarter. Excluding financials, the growth in cumulative earnings per share was positive, at 18%. The string of announcements in mid-January detailing banks' earnings losses and related capital injections tended to exert downward pressure on financial sector equity prices, which were hit particularly hard during the period under review. By 22 February, indices for banks had declined by 12% in the United States, 21% in Europe and 19% in Japan, from their end-November levels (Graph 5, centre panel).

Forward-looking valuation measures have fallen along with global equity indices, despite analysts' increasingly pessimistic forecasts of future earnings growth. Diffusion indices of 12-month forward earnings per share turned down significantly in the current and previous quarter in both the United States and Europe, reaching levels not seen since 2002 (Graph 7, left-hand panel). Yet these downward revisions in earnings did not keep pace with the decline in equity prices, driving down forward-looking valuation measures in the three

Equity valuations fall to mid-1990s levels



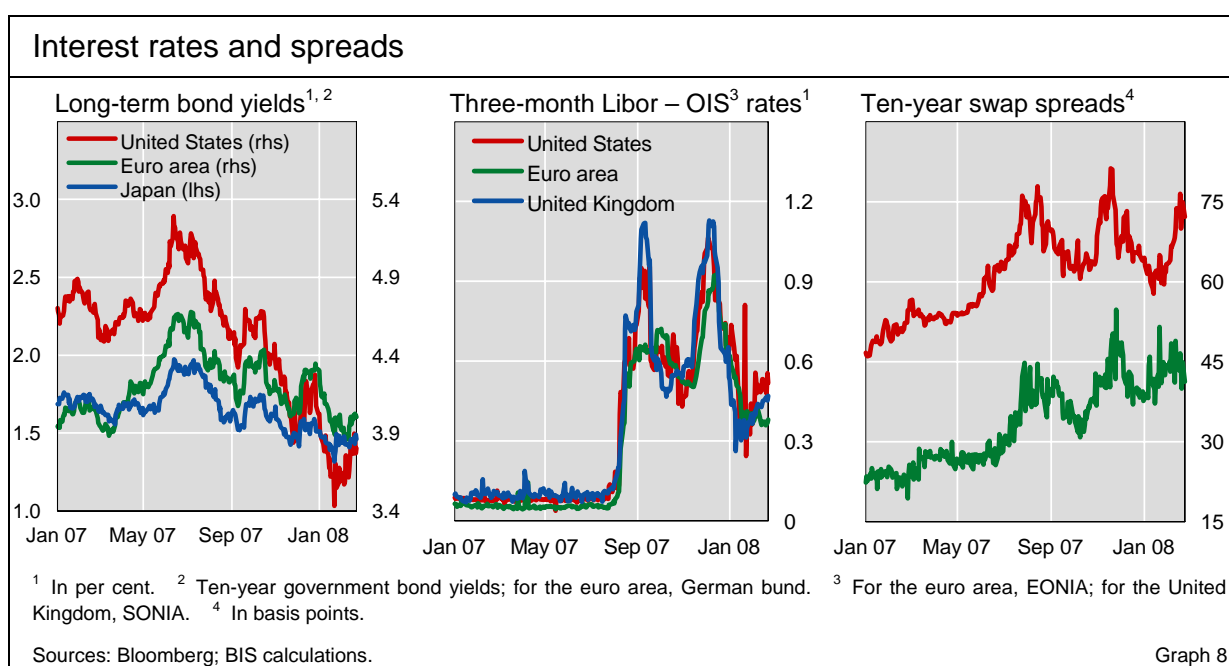
major markets. By end-January, the P/E ratio for the S&P 500 Index reached 13, its lowest level since 1995. This represents a significant fall from the levels over 20 reached during the dotcom boom, but is in line with its 1988–97 period average (Graph 7, left-hand panel).

Government bond yields follow equities lower

After rising moderately up to late December, long-term government bond yields plummeted in January amid the ongoing global reassessment of risky assets. The slowdown in US real economic activity and increasing safe haven flows from equity markets, against the backdrop of the FOMC rate cuts in early December and late January, drove down 10-year US Treasury nominal yields from a recent high of 4.28% on 26 December to 3.43% on 22 January (Graph 8, left-hand panel). Yields remained relatively unchanged for the next three weeks, despite the additional cut on 30 January, but then drifted higher to 3.80% on 22 February. Long-term yields in the euro area followed the trend of those in the United States, declining by 12 basis points from end-November to 4.0% on 22 February, while long-term rates in Japan declined by 2 basis points to 1.46%.

Tensions in money markets ease

The disruptions in money markets, which started in August 2007, seemed to worsen in December (see Upper and Michaud in this issue for discussion). News of losses by banks continued to dribble out to the market, putting upward pressure on spreads between Libor and overnight indexed swap (OIS) rates, a measure of some combination of counterparty credit and liquidity risks in money markets (Graph 8, centre panel). Central banks responded with a coordinated effort, announced on 12 December, to provide ample term liquidity to the financial markets (see Borio and Nelson in this issue for discussion); by mid-January, Libor-OIS spreads had come in from their December highs. Swap spreads, which had widened considerably during the early months of the crisis,

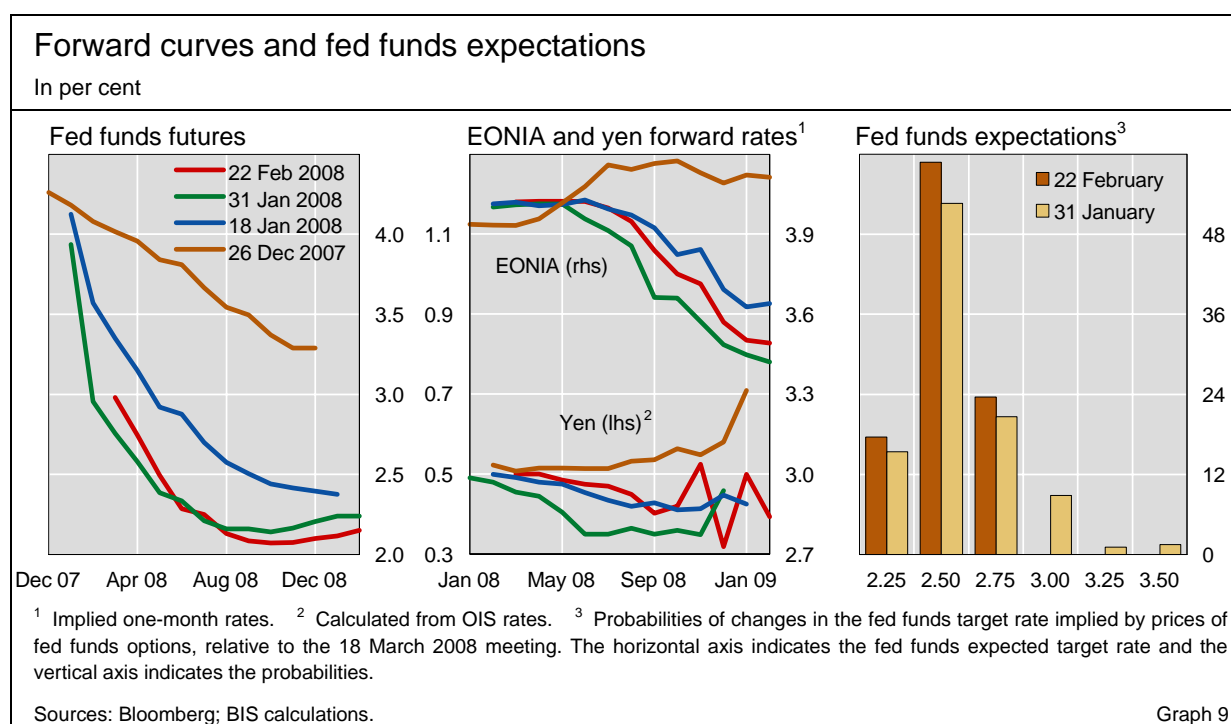


fell in the United States during much of the period, reaching lows on 15 January last seen in June (Graph 8, right-hand panel). While this was consistent with an easing of money market tensions, swap spreads again trended higher up to mid-February.

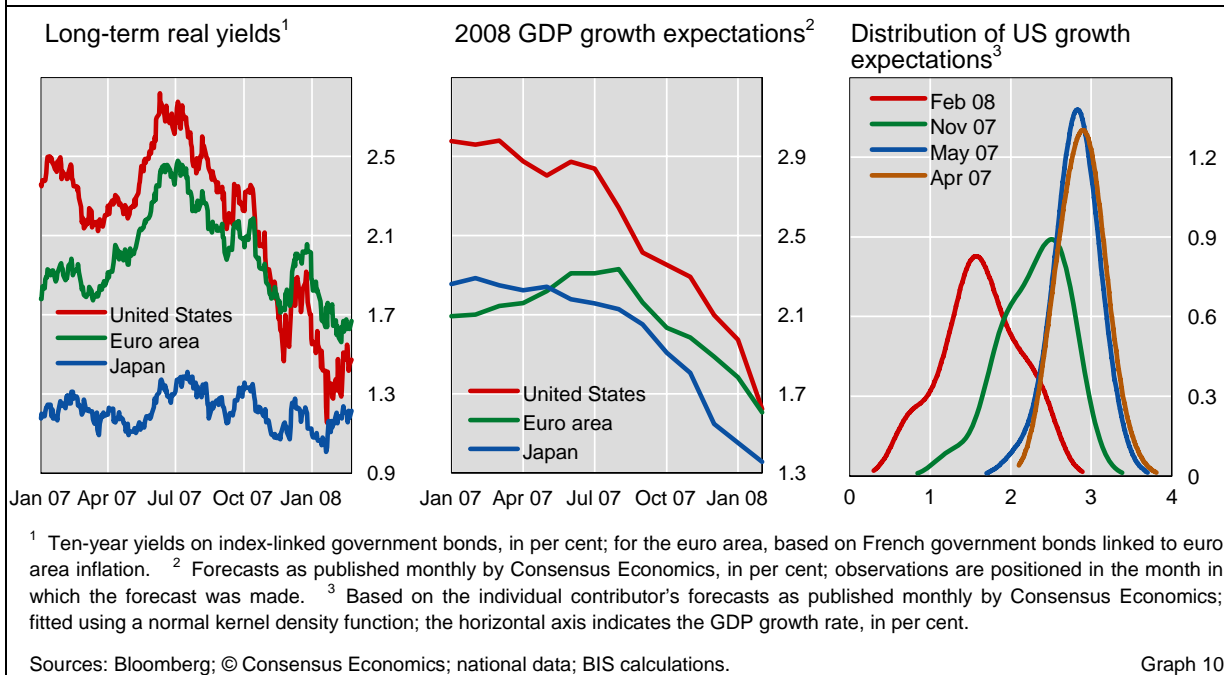
As equity markets skidded through early January, market participants began to expect greater monetary easing in the United States. These expectations were reinforced following a speech by the Chairman of the Federal Reserve on 10 January, indicating that the Fed was prepared to take “substantive additional action as needed” in the face of the deteriorating outlook for US growth. Fed funds options around that time implied that investors expected at least a 50 basis point cut, with a high probability of a 75 basis point cut, at the scheduled FOMC meeting on 30 January. Market participants seemed to interpret the unanticipated cut in short-term interest rates on 22 January as evidence that the FOMC regarded the downside risks to growth and financial stability as more severe than the risk of higher future inflation. Accordingly, the market reacted by pricing in even more monetary easing in 2008, particularly in the first half of the year (Graph 9, left-hand panel). Fed funds options in the days following the rate cut fully anticipated the further 50 basis point cut at the regularly scheduled FOMC meeting on 30 January. Moreover, fed funds futures on 31 January priced in further cuts, putting short rates at 2.75% by end-March, and possibly as low as 2% by the end of 2008. By 22 February, markets were pricing in a 59% chance of a 50 basis point cut at the 18 March FOMC meeting (to 2.5%), and end-of-year expected short rates had fallen further.

Aggressive monetary policy action reflects downside risks to growth

The mounting evidence of an economic slowdown in the United States contributed to relatively sharp declines in real yields on index-linked bonds in January (Graph 10, left-hand panel). Following a brief rise in December, real



Real yields and growth expectations

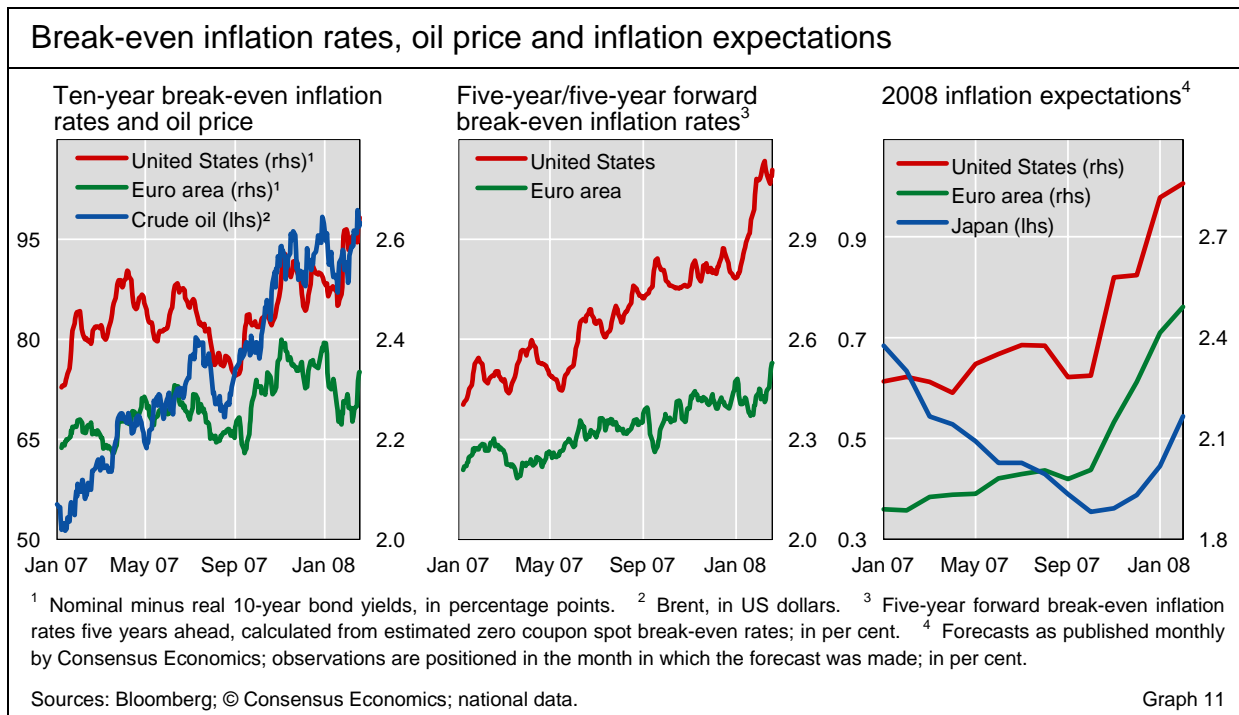


yields in the United States continued their downward trajectory which had been evident since July, falling to as low as 1.15% on 23 January. Similarly, real yields in the euro area fell to 1.64% on 23 January, from 1.83% at end-November. This was mirrored in analysts' expectations of 2008 GDP growth, which were further revised downwards in January and February, falling to as low as 1.62% in the United States and to 1.61% for the euro area (Graph 10, centre panel). In the United States at least, these forecasts have become more dispersed, suggesting greater uncertainty about future growth (Graph 10, right-hand panel).

Nominal yields rose more than real yields after late January, as investors increasingly focused on the possibility of higher future inflation, particularly in the United States. Even as analysts revised upwards their 2008 inflation forecasts (Graph 11, right-hand panel), 10-year break-even inflation rates in the United States changed little between end-November and mid-January, hovering near 2.5% (Graph 11, left-hand panel). However, boosted in part by rising oil prices, break-even inflation jumped in late January following the second cut in interest rates by the Federal Reserve, and trended upwards to 2.64% by 22 February. Longer-term expectations implied by five-year forward break-even inflation rates five years ahead, which are less likely to be influenced by transient shocks, rose even more sharply (Graph 11, centre panel).

Relative to the United States, expectations of future inflation in the euro area, as indicated by break-even inflation rates, remained relatively anchored for much of the period under review. Although up by roughly 25 basis points since May 2007, five-year forward break-even inflation five years ahead had remained near 2.4% between end-November and mid-February (Graph 11, centre panel). In the weeks prior to 22 January, incoming data releases

Euro area inflation expectations remain anchored



seemed to indicate that downside growth risks were becoming stronger in the euro area, leading investors to put a lower probability on rate increases by the ECB. Despite a higher than expected euro area inflation estimate of 3.2% on 31 January, the highest reading in 14 years, worse than expected growth in the euro area service sector in January seemed to convince investors that future rate cuts had become more likely. This view was reinforced following the ECB statement on 7 February which indicated that the downside risks to growth had indeed become more of a concern. Accordingly, market participants lowered their expectations of future rates (Graph 9, centre panel), while break-even inflation rates edged higher (Graph 11, centre panel).

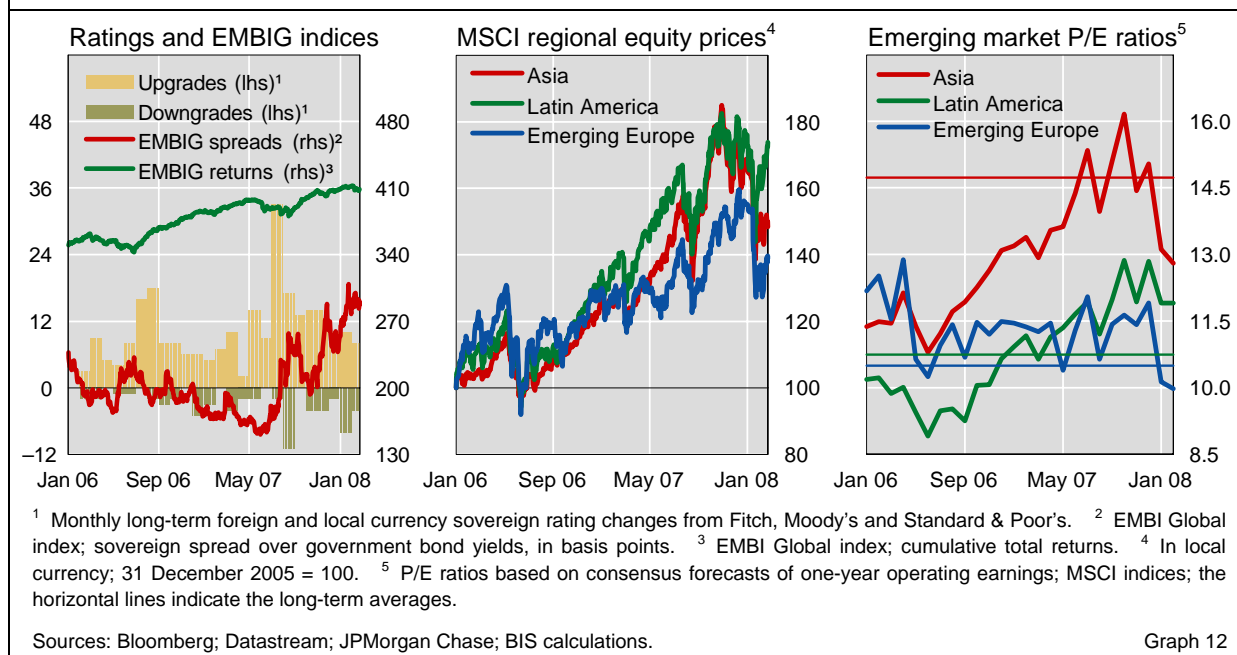
Investors question emerging market decoupling

While price reactions to credit market stress had previously been more pronounced among industrialised economies, concerns over a more widespread growth slowdown clearly began to weigh on many emerging financial markets over the period. Emerging market equity prices, in particular, fell across the board in January, suggesting that risk tolerance and earnings expectations were coming under pressure. This included countries and markets that had previously been among the most resilient.

Spreads on the EMBI Global emerging market bond index widened from lows around 240 basis points in late December to a high of 309 on 23 January, before falling back to near 287 basis points by 22 February. The index returned some 0.7% between end-November and late February and remained relatively stable in yield terms for much of the period, suggesting that part of the observed spread movement was offset by changes in US Treasury yields. Positive rating changes continued to outweigh negative ones, although the margin was declining, signalling that domestic macroeconomic fundamentals

Emerging market spreads widen ...

Emerging market assets



were providing relative support in an environment of increased uncertainty about global growth (Graph 12, left-hand panel).

... and equity markets weaken ...

Equity markets, including those that had shown previous resilience, saw more pronounced weakness. Between end-November and 22 January, the MSCI emerging market index lost some 15% in local currency terms and was still down about 7.5% by late February, despite markets recovering in the wake of the two US interest rate decisions. Asian equities and, to a lesser extent, those from emerging Europe were hit particularly hard (Graph 12, centre panel).

... as investors question market decoupling

Investors appeared to challenge previous assumptions regarding the remoteness of Asian and emerging European equity markets from problems facing the United States, suggesting a change in investor emphasis from direct to indirect sources of risk to growth and earnings. While Mexican exports had long been viewed as vulnerable to a US downturn and smaller Latin American economies were expected to suffer from slowing remittance flows, Asian markets were seen as more sensitive to global growth and commodity price trends. European emerging markets, in turn, were known to be exposed to the risk of slower growth in the major European economies. On this basis, the relative weakness of Asian and emerging European equity markets seemed consistent with expectations of a cyclical adjustment in earnings in the wake of slowing global growth. At the regional level, index valuations masked significant differentiation across individual countries (Graph 12, right-hand panel). Thus, having started the recent correction at elevated levels, price-earnings multiples for countries such as Brazil, China and India continued to be above their historical averages.