

VI. Financial markets

Highlights

Prices of risky assets continued to rise throughout most of 2006 and early 2007. Two sharp sell-offs during the period proved to be short-lived corrections to the rally rather than prolonged downturns. As a result, a number of equity markets reached historical highs, while various credit spreads touched new lows. This occurred despite indications that global growth might have peaked, and as the weaker economic outlook in the United States and the effects of past interest hikes started to weigh on investor sentiment.

In this environment, bond yields in the advanced industrial economies levelled off around mid-2006 and then began to edge downwards. The United States, in particular, saw long-term bond yields falling during the second half of the year, reflecting investor concerns about US growth prospects and expectations that monetary policy would be easing. The economic outlook for Japan remained more positive, lending some support to bond yields, while the outlook for the euro area brightened progressively, and eventually brought about rising euro bond yields.

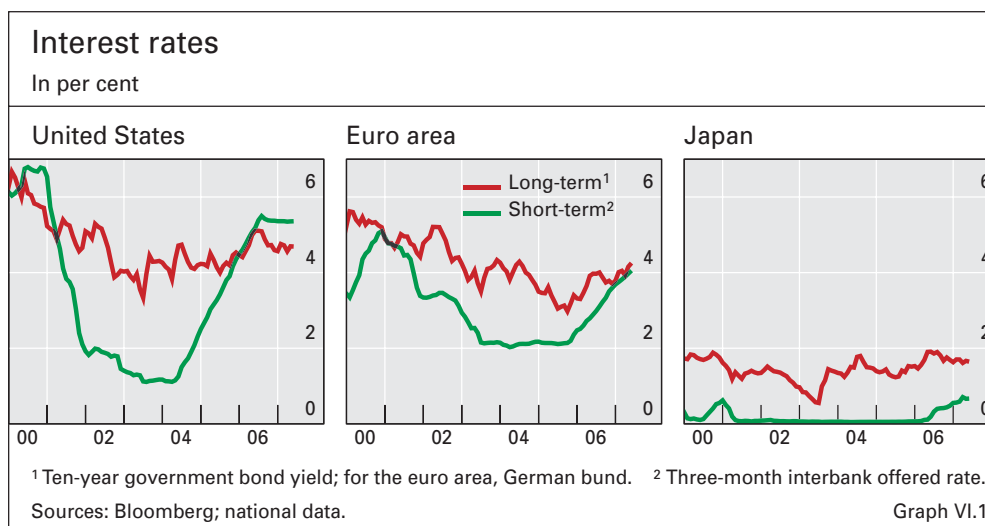
While declining bond yields may have supported equities at times during the period under review, a more important ingredient was continued strong earnings growth. Moreover, ongoing changes in capital structure boosted equity markets, as share buybacks rose further while merger and acquisition activity grew substantially. Adding to this, high and rising risk appetite among investors underpinned the rally in equities.

A combination of improving economic performance and a growing willingness among investors to take on risk also impacted favourably on corporate credit spreads in developed markets. Healthy corporate profits and low leverage pushed down the market's assessment of the likelihood of default to very low levels. Similarly, gains in emerging markets coincided with improved credit ratings and generally strong macroeconomic conditions. However, as in other markets, increasing risk appetite probably helped fuel the downward trend in spreads, both in developed corporate markets and in emerging markets.

Diverging growth prospects swayed yields

A gradual rise in long-term yields that had been under way in developed country government bond markets for some time came to an end in May 2006, when global financial markets suffered a sell-off. While prices of risky assets began recovering soon thereafter, bond yields did not regain their upward momentum. Instead, G3 long-term yields began to fall around mid-2006, as investors revised downwards their outlook for economic growth, particularly for the United States (Graph VI.1). Market expectations of policy rate cuts by the Federal Reserve, evident during much of the period, contributed to this

Long-term bond yields edged downwards after mid-2006



decline. While the growth outlook was somewhat more upbeat in Japan, this generated little upward pressure on Japanese bond yields, although it probably limited the declines. In the euro area, the positive economic momentum gathered pace progressively, eventually resulting in rising bond yields. Between early May 2006 – ie before the sell-off – and 18 May 2007, 10-year US government bond yields fell by around 35 basis points to 4.80%, while corresponding euro area yields rose by some 30 basis points to around 4.30% and those in Japan declined by close to 25 basis points to 1.65%.

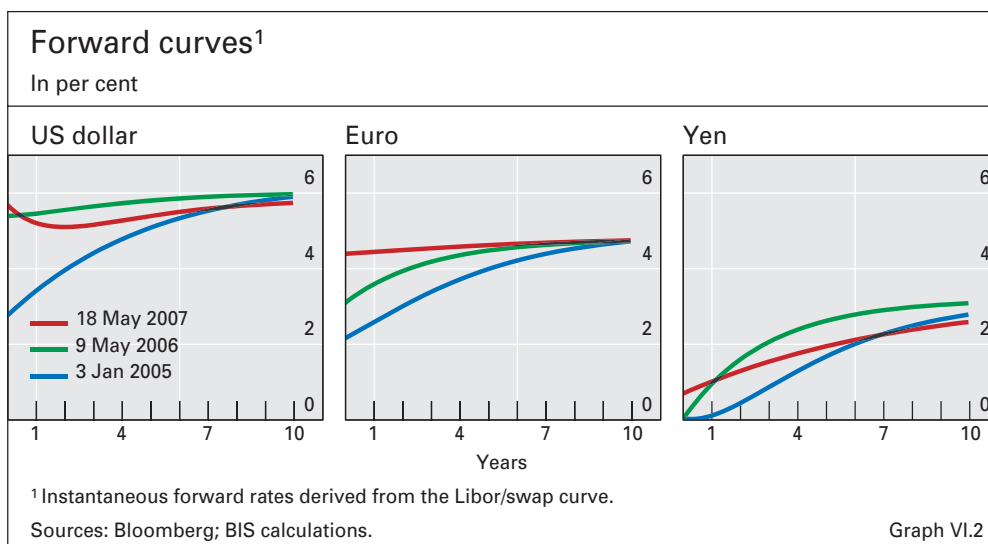
Yield curves flattened in Japan and the euro area

The US Federal Reserve's 17th consecutive rate hike on 29 June 2006 was followed by a prolonged wait-and-see period, during which shifts in investors' expectations of future policy moves contributed to declining yields at both long and short maturities. While at first investors expected further tightening, albeit at a slower pace, they gradually shifted towards the view that the Federal Reserve would remain on hold for an extended period of time, and eventually to anticipations of possible cuts in policy interest rates. At the time of the June 2006 rate hike, the difference between 10-year and two-year US yields stood at close to nil. By 18 May 2007, the slope of the two- to 10-year segment of the yield curve was little changed compared to the June 2006 levels, while the short end of the US implied forward interest rate curve had inverted considerably (Graph VI.2). This was in line with expectations of an easing of US monetary policy over the near to medium term.

While rates were kept unchanged in the United States, continued tightening of monetary policy in Japan and the euro area brought flattening yield curves in these economies (Graph VI.2). Japan saw the end of the zero interest rate environment and its first rate hike in six years in July 2006; this was followed by another rate increase in February 2007. The ECB raised key interest rates by 25 basis points five times between June 2006 and May 2007 (see Chapter IV). Meanwhile, long-term bond yields fell somewhat in Japan and rose only moderately in the euro area, resulting in reduced term structure slopes. Between early May 2006 and 18 May 2007, the difference between

Expectations grew of US policy rate cuts ...

... while rates rose in Japan and the euro area



10-year and two-year bond yields fell by around 55 basis points in the euro area, and by about 45 basis points in Japan.

Diverging growth prospects and moderating inflation expectations

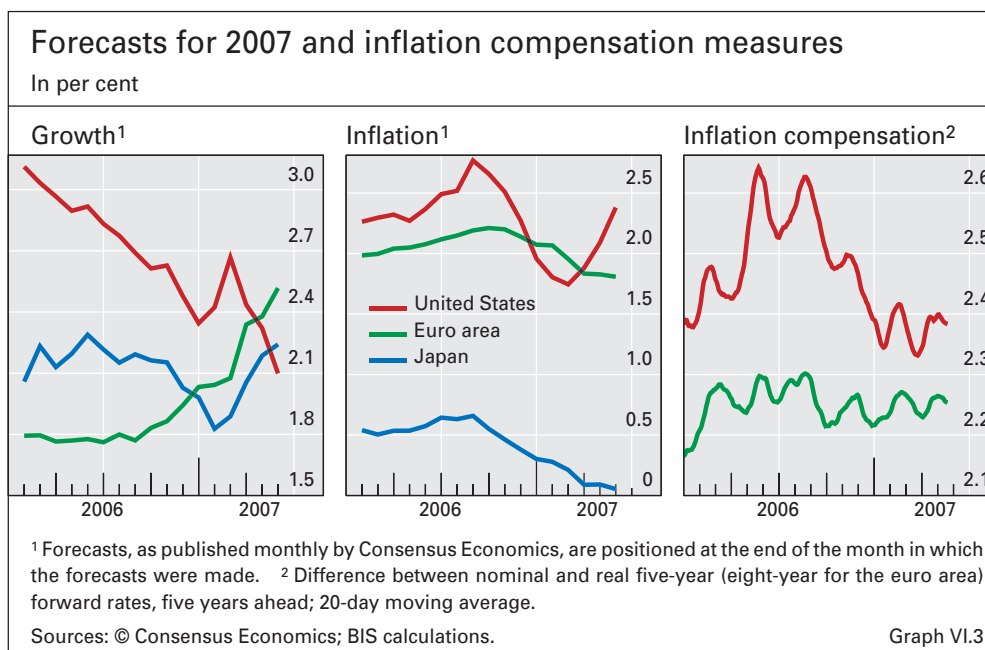
As always, decisions on policy rates reflected evolving assessments of macroeconomic conditions and the outlook for the future, which also largely shaped developments in long-term bond yields. Arguably, the most important factor driving market expectations and the pricing of government securities during the past year was the expected speed and magnitude of the slowdown in economic activity in the United States. Investors' perceptions about the likely trajectory of future US growth became gradually less optimistic during 2006, as worries about the fallout from the rapidly cooling housing market, a prolonged rise in oil prices and past interest rate hikes began to take their toll. Reflecting this, survey forecasts of US economic growth for 2007 were continuously revised downwards, with a brief interruption in the first few months of 2007 (Graph VI.3, left-hand panel).

An expected slowdown pushed US interest rates lower ...

While changes in the outlook for US economic activity also had an impact on bond yields outside the United States, expectations of economic growth in the euro area and Japan certainly played an important role in yield developments in these economies. The euro area, which saw accelerating growth figures and gradually more optimistic expectations of future economic activity, initially experienced smaller declines in bond yields than the United States, followed eventually by a gradual rise in yields. In Japan, bond yields fell less than in the United States during the period under review, as the view formed among investors that the economy was returning to normality and that growth was on track for a solid performance.

... while accelerating growth lifted euro area yields

In addition to the outlook for growth, investors' perceptions about future inflation developments contributed to bond yield movements during the past year. In the first half of 2006, inflationary pressures had been seen as gradually increasing, in particular in the United States, while in the second half they seemed to be easing, following past monetary policy tightening and a decline

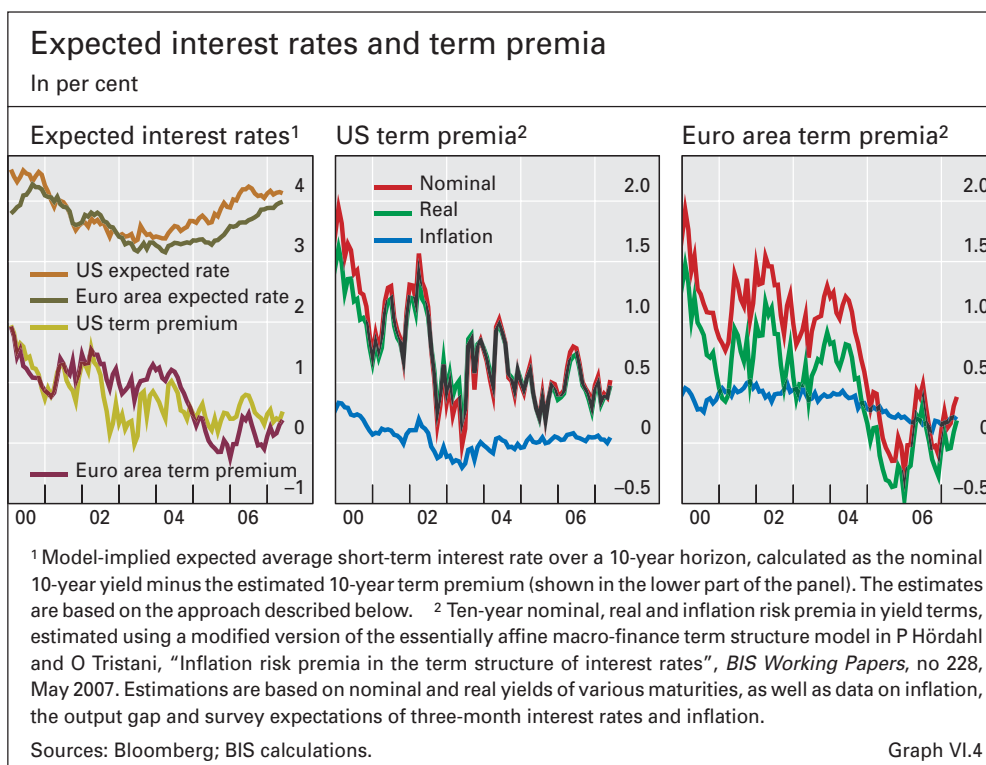


in oil prices that lasted until the end of the year. Consistent with this, survey forecasts for 2007 inflation began to moderate after a gradual rise in the first months of 2006 (Graph VI.3, centre panel). However, signs in the first half of 2007 that inflation was easing off at a slower rate than previously expected led to a partial reversal of these forecasts. Long-horizon US inflation expectations, as approximated by the difference between nominal and real forward bond yields, largely reflected these developments (Graph VI.3, right-hand panel). Meanwhile, corresponding inflation measures in the euro area were more stable, indicating a perception in markets that price pressures emanating from improving economic activity would be counterbalanced by gradually tighter monetary policy.

Lower term premia contributed to falling bond yields

While bond yield developments over the past year were partly shaped by expectations of the economic outlook, other factors also had an impact. In particular, the lack of significant upward momentum in euro area yields during most of 2006 seemed, to some extent, at odds with the strong economic performance of the region. Instead, declining term premia appeared to play an important role, and also added to the downward pressure on US Treasury yields.

Term premia embedded in the term structure of interest rates represent compensation to investors for bearing risks associated with uncertain future interest rate developments. Estimates of such premia for the United States and the euro area indicate that they remained low by historical standards (Graph VI.4, left-hand panel). Moreover, while term premia seem to have increased somewhat between late 2005 and mid-2006, they began to fall again afterwards. Estimates show that from mid-2006 to May 2007, the nominal 10-year term premium fell by around 25 basis points in the United States. This represented about three quarters of the total decline in the 10-year yield during



this period. The remaining 10 basis points were attributed to expectations of lower average interest rates going forward. In the euro area, the 10-year term premium fell by around 40 basis points in the second half of 2006, before recovering most of this decline in the first five months of 2007.

If the estimated term premium component is stripped out from 10-year bond yields, a picture emerges that seems to better reflect the contrasting economic developments over the past year in these two economies. The implied path of expected average nominal interest rates over the next 10 years continued to rise uninterrupted for the euro area, while it levelled off and edged downwards around mid-2006 for the United States (Graph VI.4, left-hand panel).

Some information about the underlying determinants of the estimated term premia may be gleaned from modern term structure models. Term premia in nominal bond yields can, loosely speaking, be decomposed into two elements, namely an inflation risk premium and a real risk premium. The first component reflects compensation required by investors for uncertainty surrounding inflation, and the second reflects compensation required to take on risk associated with changing real interest rates. By jointly modelling the dynamics of nominal and index-linked bond yields as well as key macro variables, one can obtain an indication of how these premia have evolved over time. Admittedly, such estimates involve a considerable margin of uncertainty. Moreover, the results can be affected by liquidity conditions in the various markets, as well as by institutional factors. For example, institutional demand factors and heavy purchases of government securities by foreign central banks and other state institutions may have exerted downward pressure on bond yields for some time (see Chapter VI in the *76th Annual Report*).

Decomposition of term premia ...

... shows that the decline was largely due to falling real premia

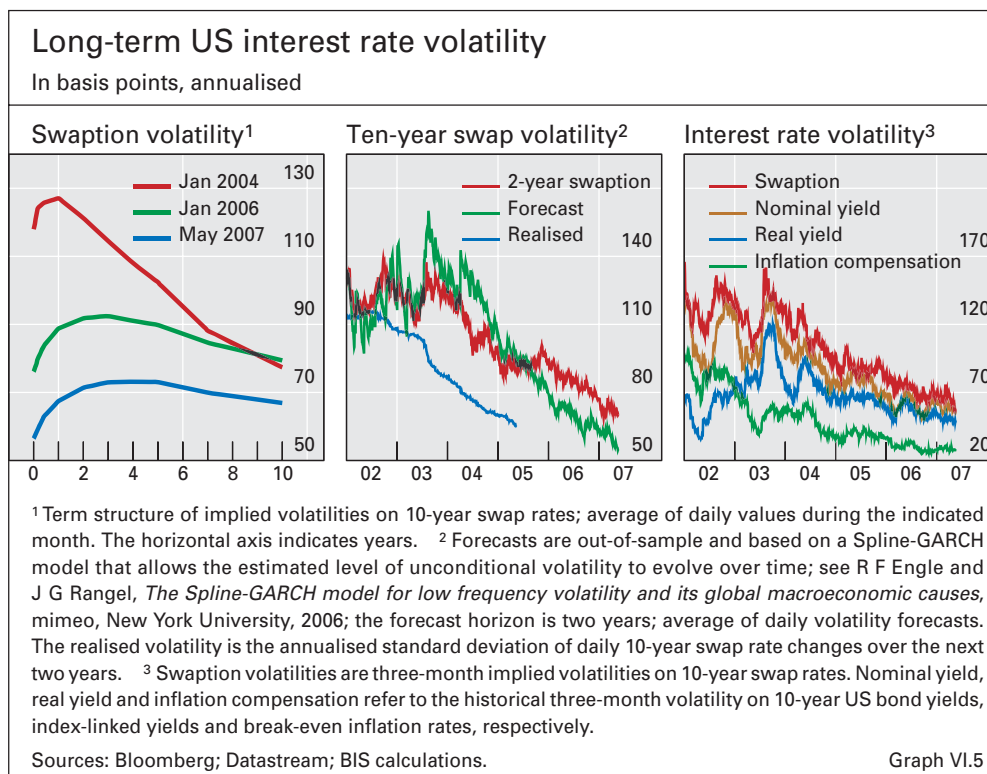
Even so, the evidence appears to suggest that high-frequency changes in nominal term premia were due largely to fluctuations in the real component of these premia in the euro area, and virtually entirely so in the United States (Graph VI.4, centre and right-hand panels). At the same time, estimates of the euro area inflation risk premium displayed a gradual decline throughout much of 2006, while for the United States they remained essentially flat.

Implied interest rate volatilities continued to fall

The decline in estimated term premia may, to some extent, have been due to perceptions among investors that uncertainty associated with future interest rate moves had fallen. Indeed, as proxied by implied volatilities on swaptions (options on interest rate swaps), there is some evidence that the perceived degree of interest rate uncertainty may have declined. For example, the term structure of implied swaption volatilities for 10-year US swap rates continued to shift downwards during 2006 and early 2007 (Graph VI.5, left-hand panel), and similar falls were seen for other swap rates. The sharp sell-offs in global financial markets that took place in May–June 2006 and late February–March 2007 had little impact on swaption volatilities in general, although near-term volatility on short-term rates displayed a brief surge during the second episode.

Implied swaption volatilities fell further

While changes in the required compensation for volatility risk – ie the volatility risk premium – may have influenced swaption volatilities as well, there are some indications that they may have played a smaller role. The volatility risk premium can be proxied by the gap between the implied volatility and the corresponding volatility expected by investors. One way of measuring volatility



expectations is by using forecasts obtained from time series models. Such estimates indicate that the fall in swaption volatilities, while quite sharp, was nonetheless mainly due to expectations among investors that future volatility would continue to drop. Specifically, the decline in implied volatility during the past few years was in large part mirrored by lower (out-of-sample) forecasts of volatility generated by a model that allows for changes in the perceived long-run level of volatility. Moreover, the observed fall in implied swaption volatilities coincided with a downward trend in realised long-term interest rate volatility (Graph VI.5, centre panel).

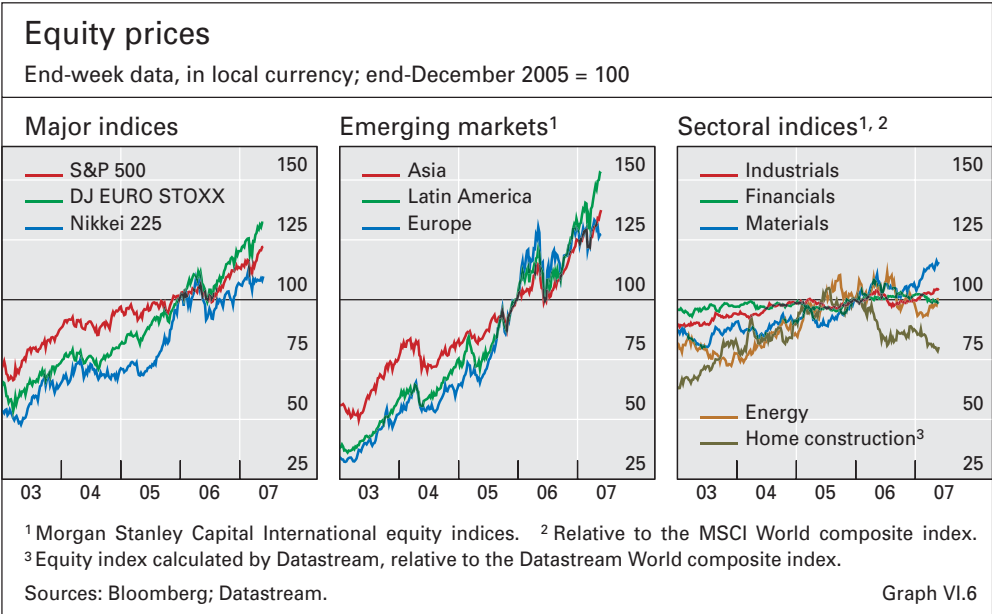
Given that the swap spread over US Treasuries has remained quite stable in the recent past, the steady decline in the volatility of swap rates since mid-2003 has been largely matched by falling volatility on 10-year US bond yields (Graph VI.5, right-hand panel). In turn, there is some evidence suggesting that this decline might have reflected greater perceived stability of macroeconomic fundamentals. In particular, the inflation compensation of nominal bond yields has become less volatile, which, together with steady inflation risk premia, is consistent with less volatile long-horizon expectations of inflation. This might reflect greater central bank credibility, or perceptions among investors that future inflationary shocks hitting the economy are likely to be smaller than in the past. A general reduction in the variability of the estimated term premium, mostly due to a less volatile real risk premium, may also have contributed to lower interest rate volatility.

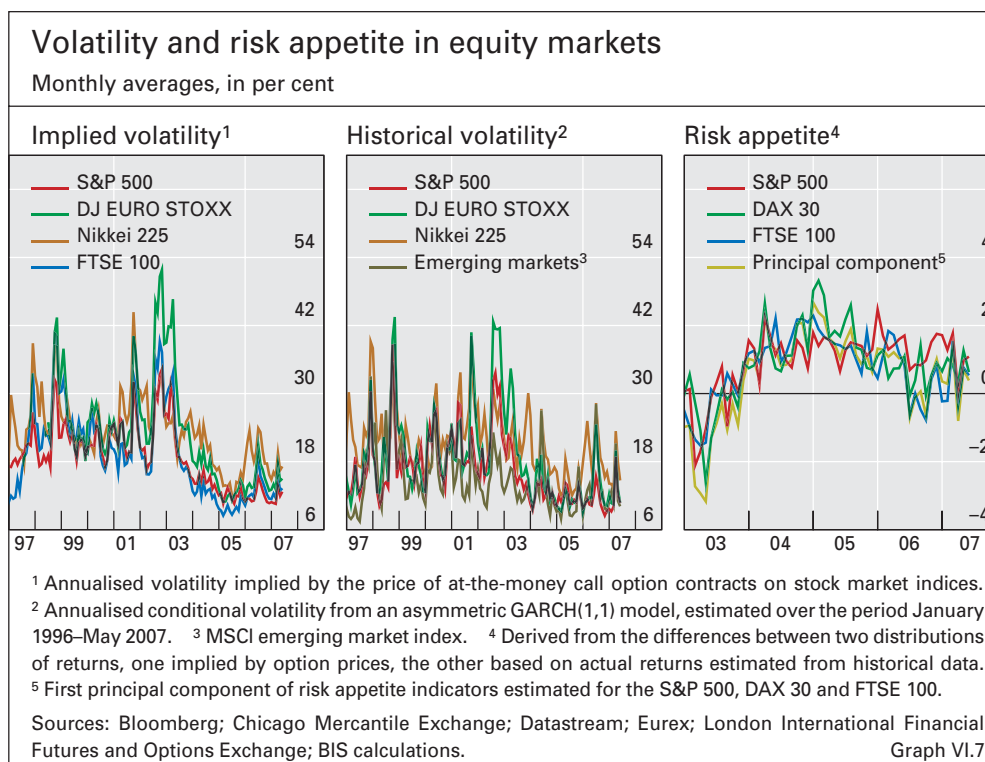
Lower volatility may be linked to perceived macro stability

Equity markets robust despite episodes of volatility

The rally in global equity markets that had begun in early 2003 continued for most of the period under review, despite two sharp sell-offs in May–June 2006 and late February–March 2007. For the third year in a row, stocks in advanced European economies outperformed those in other developed markets, with

Equity prices rallied ...





the index increasing by 19% between end-March 2006 and mid-May 2007, outpacing US and Japanese share price growth of 17% and 2%, respectively (Graph VI.6, left-hand panel). Shares were on the whole stronger throughout the emerging markets, with prices in Latin America, Asia and Europe rising by 37%, 28% and 10%, respectively (Graph VI.6, centre panel). Episodes of heightened volatility surrounding the sell-offs were also brief. As a result, share price volatilities were close to historical lows in late 2006 and were still well below global long-term averages in May 2007 (Graph VI.7, left-hand and centre panels).

Strong earnings buoyed markets

A key support for global equity prices was provided by strong earnings of listed firms in developed country markets. Even as GDP growth cooled in the United States in the third quarter of 2006, this initially had a minimal effect on corporate earnings, which showed signs of slowing only towards the end of the year. To be sure, stagnating house prices did affect the profitability and performance of sectors such as home construction in 2006 (Graph VI.6, right-hand panel). Earnings growth in Europe was also generally strong, with robust economic activity in the United Kingdom, Germany and France helping equity markets shrug off continued tightening by the Bank of England and the ECB. Japanese profit performance lagged after the acceleration in early 2006.

Gains in equity prices in emerging markets coincided with generally favourable macroeconomic conditions (see Chapter III) and a strong appetite for risk among global investors. Sharp appreciation in the materials sector (Graph VI.6, right-hand panel), which includes metals and mining, partly reflected high growth in industrialising emerging markets such as China. In

... supported by strong earnings

addition, contagion effects from political unrest in individual markets, such as those in Hungary, Thailand and Ecuador, were quite limited. Even so, shares in the energy sector stagnated after mid-2006, in line with lower oil prices, as did share prices in oil-exporting Russia, which suffered particularly severe declines at the start of 2007. In contrast to developed country markets, earnings growth in emerging markets did not keep up with equity prices, and earnings multiples rose sharply (Graph VI.9, centre panel), consistent with increasing risk appetite for emerging market assets.

Risk appetite fuelled emerging market returns ...

Global stock markets incurred heavy losses in May–June 2006 and late February–March 2007, with the global MSCI index falling from peak to trough by 13% and 7%, respectively. The mid-2006 sell-off appeared to be driven more by a weakening in investor appetite for risk than by a reassessment of fundamentals (Graph VI.7, right-hand panel); as a result, emerging market equity prices experienced the most significant retreat, falling by 26%. By contrast, the early 2007 sell-off coincided with concern over US macroeconomic weakness (particularly in the housing market). Although a sharp correction in the Chinese stock exchange occurred at the beginning of the sell-off, emerging markets did not underperform developed country shares as much as in mid-2006. Compared to mid-2006, the global sell-off was also brief, and the increases in volatility measures and decrease in risk appetite were mostly retraced within a month (Graph VI.7).

Merger and acquisition activity supported the market

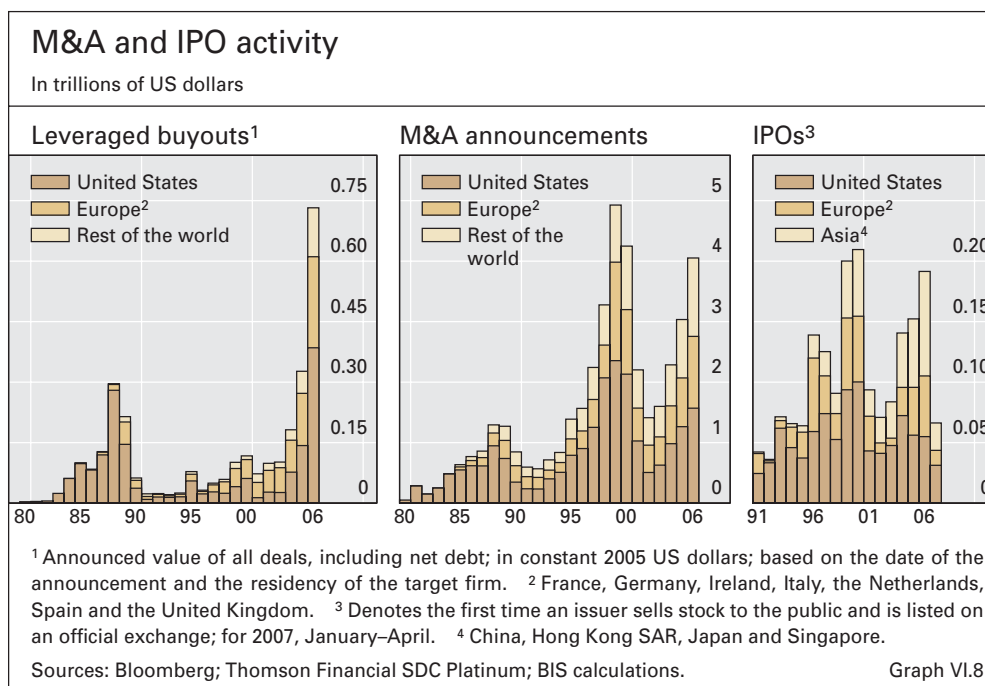
Current and prospective changes in capital structure also helped to support equity prices. Share buybacks continued to increase, as S&P 500 companies purchased more than \$430 billion worth of their own shares in 2006, well above the record levels scored just the previous year. In addition, the volume of leveraged buyouts (LBOs) surged to \$753 billion, with takeover bids by private equity investors in 2006 exceeding (in constant dollars) those achieved in the peak year of the LBO explosion in the late 1980s. One highly noticeable difference between the latest and earlier booms was that the targets were no longer overwhelmingly US corporations; in fact, European targets constituted 31% of the announced value of all deals, as opposed to less than 10% in 1988. Targets in emerging markets and other countries also accounted for a significant proportion (Graph VI.8, left-hand panel).

... and robust growth in mergers and acquisitions

The more general category of merger and acquisition (M&A) activity grew substantially from the elevated levels of 2005, with \$4.1 trillion in announced M&As in 2006, the highest level (in real terms) since 2000. M&A activity was particularly strong in Europe, growing by 52% in 2006. This expansion pushed the value of all deals to \$1.2 trillion, a level approaching that in the United States (Graph VI.8, centre panel). The unprecedented activity in the market for corporate control was probably one reason for the strength of the European equity market. In December 2006, buoyed to a significant extent by news of potential corporate takeovers, the main European share index posted positive returns on 10 consecutive days, the longest such rally since 1997.

The market for corporate control was especially strong in Europe

The volume of initial public offerings (IPOs) was higher than in any year since 2000. A particularly large number of deals originated in Asia, where the



value of IPOs reached a record \$86.4 billion, a 53% increase from the previous year (Graph VI.8, right-hand panel). Volume was exceptionally large on the Hong Kong and Shanghai stock exchanges. While European IPO volume grew by 27%, that in the United States remained stagnant, and the value of US offerings as a percentage of those in all major markets declined to less than 30%.

Valuations

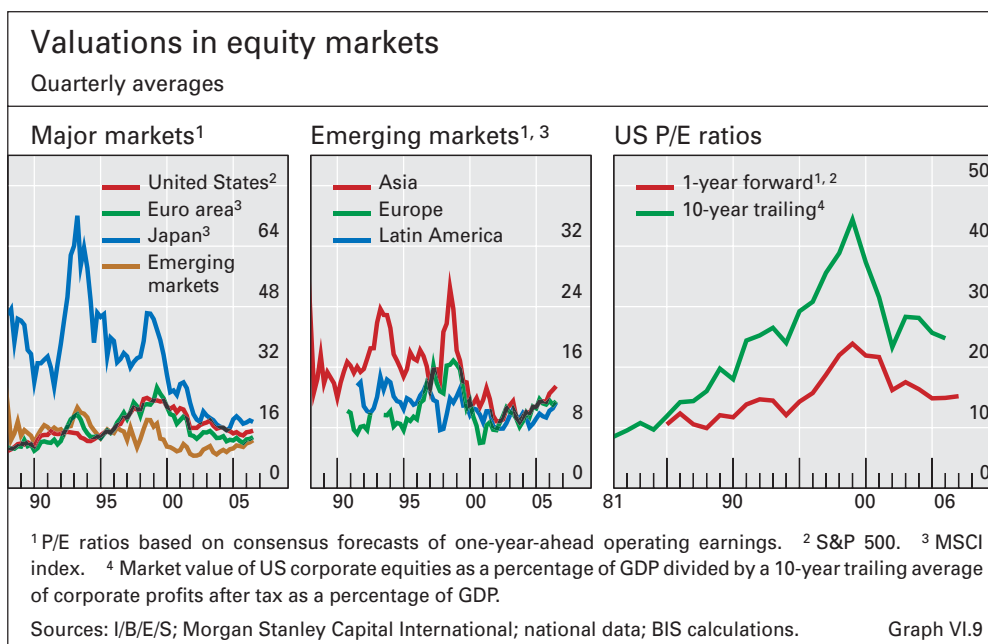
P/E ratios fell in the United States and the euro area ...

Against the backdrop of such robust earnings, resilient share prices did not lead to increasing valuations in developed country markets, at least on the basis of several popular measures. Rather, revisions to profit forecasts generally outpaced price increases. The S&P 500 remained around 15 times one-year-ahead forecast earnings in 2006, a multiple slightly above that for the euro area MSCI. Both levels were in fact slightly below their long-term average of 16 over 1988–2005. In Japan, although price/earnings (P/E) ratios had increased sharply in the second half of 2005 and early 2006, they remained substantially below the levels of the previous decades (Graph VI.9, left-hand panel).

... and rose in emerging markets

In contrast, emerging market valuations were quite buoyant, as they continued to rise sharply from 2005 (Graph VI.9, centre panel). This appreciation was most pronounced in Asia, although valuations in emerging Europe have grown more rapidly over the past five years. Despite the recent advances, valuations were still well below those of the late 1990s (before the equity downturn) in each of the major emerging market regions.

To be sure, valuations in developed countries looked more stretched when based on historical measures of profits rather than short-term forecasts. As discussed below, in the United States profits as a share of GDP were close to historical highs in 2006 (see Graph VI.15). The ratio of US real equity prices to a 10-year moving average of real earnings smooths cyclical variation, and



is a historically robust (inversely related) predictor of future returns. At the end of 2006, this P/E ratio was well above its historical average at around 25, compared to an average of just below 20 since the early 1980s (Graph VI.9, right-hand panel).

Credit spreads hovered near historical lows

Yield spreads on all types of debt tightened during the period under review, although spreads on riskier debt contracted the most. The rally in credit markets was twice interrupted by periods of market turbulence, which turned out to be relatively brief in duration. Sound corporate fundamentals, as well as strong investor demand for structured credit products and greater investor risk appetite, seemed to be important forces behind the rally.

High-yield debt outperformed

The rally in riskier credits took spreads to new lows in some markets (Graph VI.10). By late May 2007, an index of spreads on US high-yield corporate bonds, at just over 250 basis points, had fallen below its previous low reached prior to the sell-off in credit markets in the second quarter of 2005, and was within a few basis points of its low of 235 in October 1997. Similarly, spreads on European high-yield bonds fell below 190 basis points, more than 40 basis points less than the previous low reached in March 2005. Spreads on US and European investment grade corporate bonds remained within a relatively tight band and, in late May 2007, were only a few basis points wider than in March 2006.

The first temporary repricing of credit risk took place from mid-May 2006. From 288 basis points on 12 May 2006, US high-yield corporate bond spreads widened by 47 basis points by the end of June. The high-yield credit default swap (CDS) index would have widened significantly more in June and July

A downward trend in high-yield spreads ...

... weathered market turbulence in May–June 2006 ...

were it not for the automobile sector: CDS spreads on General Motors and Ford narrowed by more than 300 basis points between end-June and end-August. Spreads on risky assets remained elevated through August, but resumed their downward trajectory in late September. In May and June, flows from high-yield credits into safer assets left spreads on more highly rated borrowers less affected. For example, spreads on A-rated corporate bonds in both the United States and Europe widened by less than 10 basis points during this episode.

... and late February–March 2007

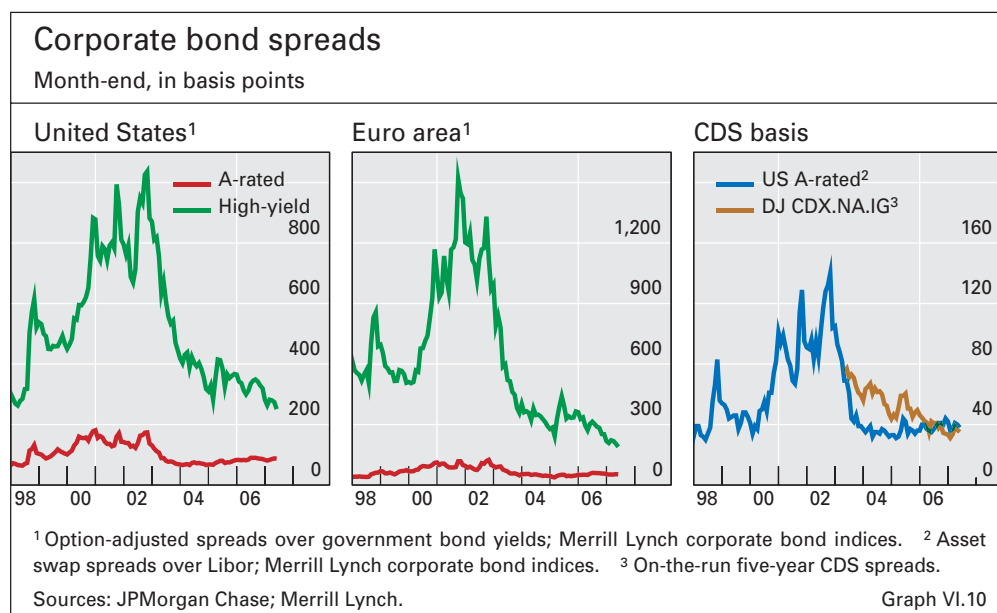
A second bout of turbulence in credit markets occurred in late February and March 2007, although this turned out to have a smaller overall impact. On 27 February, amidst a global sell-off in equity markets, spreads on US high-yield bonds jumped by more than 20 basis points, and continued to rise for around four days thereafter. While equity markets had, for the most part, recouped their losses within three weeks of the sell-off, credit markets were somewhat slower to recover. US high-yield bond spreads did not approach their late February low until the second half of May.

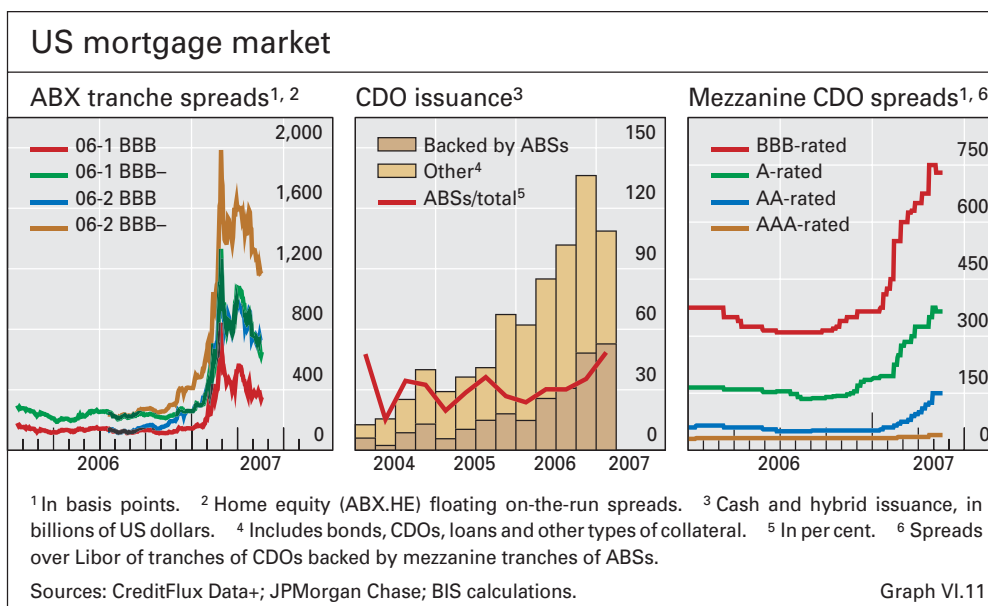
Growing concern over the US mortgage market ...

Contributing to market uncertainty was growing concern over the US subprime housing market. Delinquency rates on subprime loans, which had hovered near 10% for much of 2004 and 2005, reached 13% by end-2006, with much of the increase occurring in the fourth quarter (see Chapter VII). This led to a series of bankruptcies of subprime lenders, and to a significant widening from November 2006 of spreads on non-investment grade tranches of home equity loans (Graph VI.11, left-hand panel). Following HSBC's announcement on 8 February 2007 that more funds would have to be set aside to cover bad debts in its subprime lending portfolio, and New Century Financial's downward revision of its 2007 loan volume forecast, spreads in this market segment widened by no less than 200 basis points in the space of two days.

... and effects on CDO markets

Whether and how the problems in the US subprime mortgage market may spill over into other markets remains unclear. In part, the risks are limited



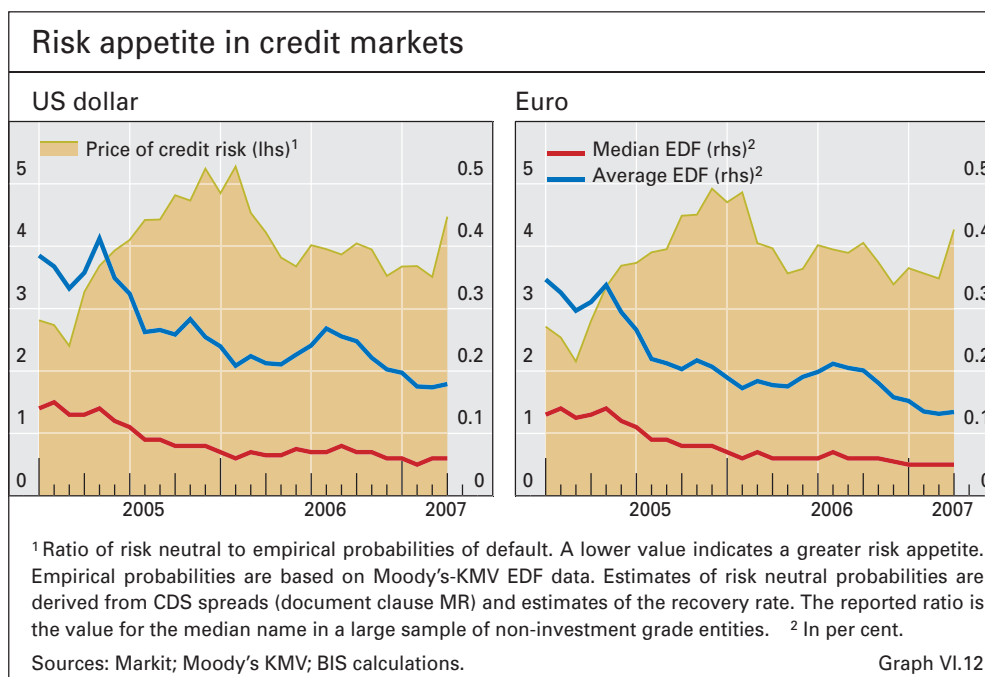


because of the relatively small size of the subprime market. Loans to these borrowers constituted only 21% of total US mortgage lending in 2006, and 14% of the total mortgage loans outstanding at the end of the year. That said, investors have become increasingly concerned about the effect that a continued deterioration might have on valuations of collateralised debt obligations (CDOs) backed by asset-backed securities (ABSs). Exactly where in the CDO market the risks posed by subprime and Alt-A mortgages (which also do not have prime borrower status) are concentrated is difficult to measure. Estimates based on individual CDO deals indicate that ABSs account for approximately one third of the total collateral backing cash CDOs (Graph VI.11, centre panel). Industry estimates suggest that a substantial share is backed by subprime and Alt-A mortgages. Spreads on tranches of CDOs backed by mezzanine tranches of ABSs began to widen in late January 2007, signalling that investors assigned a higher probability to a significant deterioration in the underlying collateral pool (Graph VI.11, right-hand panel).

Greater investor risk appetite

While generally healthy corporate balance sheets (see below) buoyed valuations in credit markets, there is also evidence that changes in investors' risk appetite contributed to the downward trend in spreads on risky assets. A simple estimate of the price of a "unit" of risk in a particular credit market segment is obtained from the ratio of default probabilities derived from credit spreads to those derived from underlying balance sheet information, in this case Moody's-KMV estimated default frequencies (EDFs). The higher this ratio, the higher the compensation demanded by creditors for bearing a given level of default risk. To be sure, EDFs may themselves contain some element of market sentiment because they in part reflect equity prices and volatilities. That said, they are a reasonable approximation of market participants' view of fundamental default risk.

Changes in investor risk appetite ...



... contributed to tighter high-yield spreads

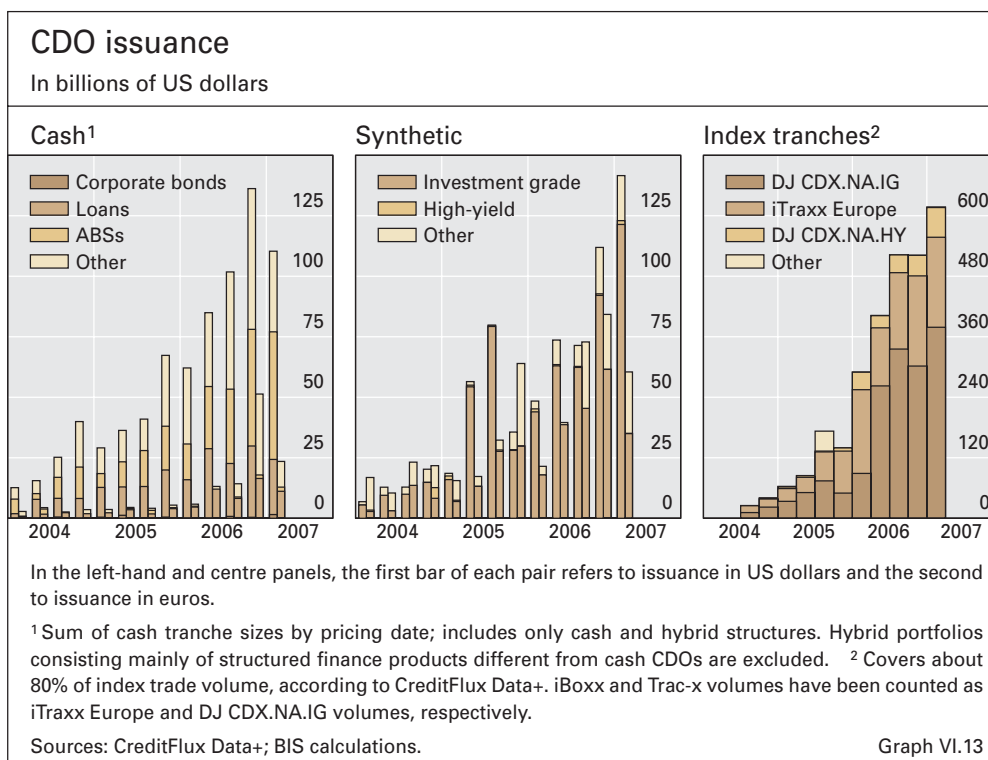
Broadly speaking, these indicators suggest that investors' risk appetite increased through much of 2006. Clearly, strong corporate performance contributed to the low level of both EDFs and CDS premia during the period under review. However, CDS premia have declined relatively more, suggesting that changes in investor risk appetite, above and beyond changes in fundamentals, were a significant factor behind the movement in high-yield credit spreads (Graph VI.12). The estimated price of credit risk, which peaked in late 2005, declined during much of 2006 and early 2007, only briefly interrupted by the May–June 2006 sell-off. The most recent available data indicate that the increase in high-yield spreads in late February and March 2007 was largely due to increases in the price of risk.

Soaring issuance of structured credit products

Record CDO issuance ...

The downward trend in high-yield credit spreads coincided with a period of robust issuance of structured credit products, causing some observers to raise the possibility that the growth in the CDO market since 2004 has contributed to spread compression. Global issuance of US dollar- and euro-denominated cash CDOs in 2006, at \$470 billion, was the highest on record, with particularly strong activity in the fourth quarter (Graph VI.13). Similarly, issuance of synthetic CDOs (or CDOs of CDSs) was also much higher in 2006, at \$524 billion, as was trading in CDS index tranches (\$1,736 billion).

There are at least two channels through which the issuance of structured products may exert downward pressure on credit spreads. At a general level, issuance of cash CDOs enlarges the investor base – and hence demand – for corporate debt securities. Investors targeting highly rated securities can indirectly obtain exposure to non-investment grade corporate debt by purchasing the senior tranches of CDOs. In addition, issuers of synthetic CDOs and other structured credit products generate returns by selling default



protection in the CDS market, which can improve liquidity in both the derivatives and cash markets. Indeed, the supply of protection generated by structured issuance could be even larger than that suggested by the notional values of the CDOs. For example, the hedging of single-tranche CDOs, where only a particular interval of the default distribution is sold off to investors, requires that arrangers sell protection amounting to a multiple of the notional value in order to offset the high price sensitivity of these tranches. The multiples of more complex products, such as constant proportion portfolio insurance (CPPI) and constant proportion debt obligations (CPDOs) can be even higher.

While structured issuance can, in principle, exert downward pressure on spreads through either channel, the available evidence suggests that it may not have been a decisive factor in 2006, at least in the high-yield markets. Less than 1% of the total issuance of cash CDOs had bonds as the underlying collateral, and a large proportion of these were rated investment grade. Similarly, issuance of synthetic CDOs, index tranches and CPDOs related mainly to investment grade entities. While aggregate CDO issuance coincides with tighter high-yield CDS premia, simple regression analysis suggests that this relationship is weak and only marginally statistically significant at a monthly frequency.

That said, there does appear to be some evidence that the growth in synthetic CDO issuance may have contributed to the decoupling of spreads on investment grade bonds and their corresponding CDS premia (Graph VI.10, right-hand panel). From the end of the sell-off in credit markets in March 2005 to late February 2007, US dollar and euro investment grade CDS spreads tightened continuously, at a time of particularly high structured issuance. By contrast, investment grade asset swap spreads changed little overall.

... had little traceable impact on high-yield markets ...

... but visible effects in investment grade segments

A turn of the credit cycle?

With spreads near historical lows, credit markets were arguably vulnerable to a repricing. The episodes of market turbulence during the period under review may have reflected market participants' latent nervousness that the balance of risks tends to be skewed towards the downside when times are good.

Little concern about imminent turn of the credit cycle

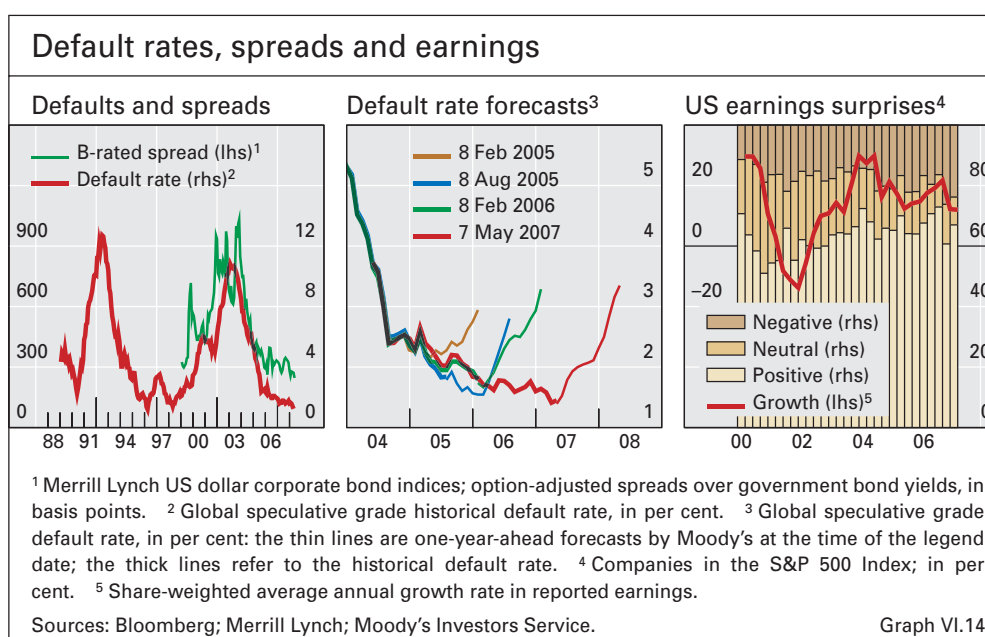
In the near term, however, few market participants appear to be overly concerned about a sudden and widespread deterioration in credit quality. Speculative grade corporate default rates fell below 2% in 2005, and have remained near that level since, consistently coming in below rating agencies' forecasts (Graph VI.14). Even so, the fact that spreads on short- and medium-term instruments have narrowed more than those on longer-maturity debt does suggest that market participants generally expect default rates to rise.

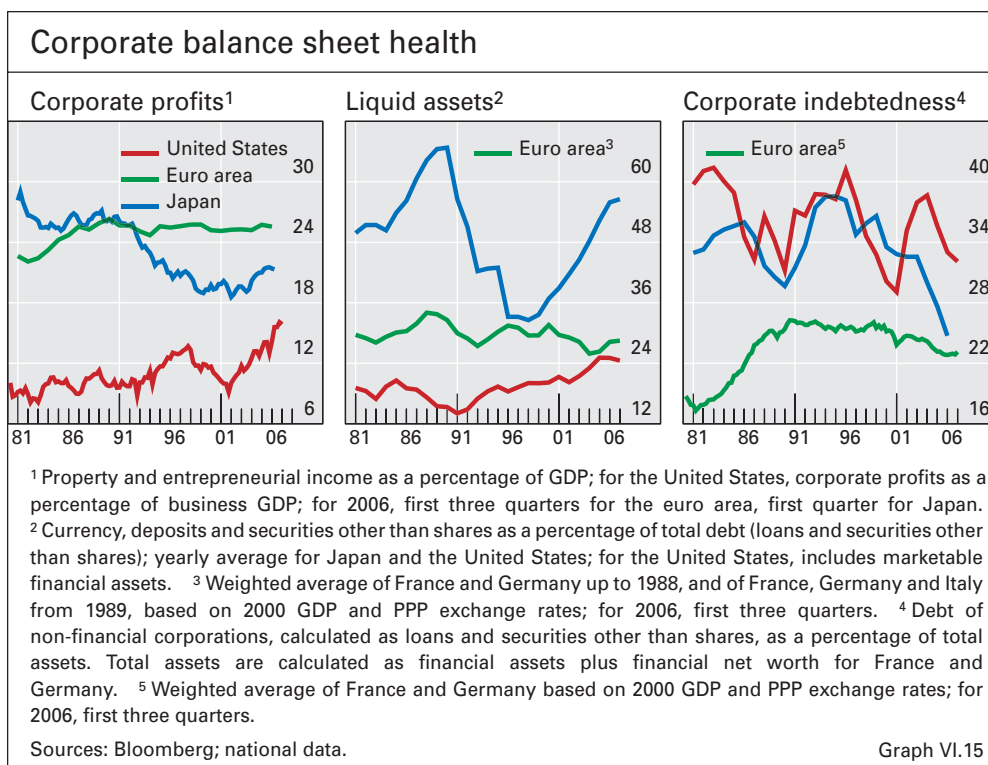
The trigger could be a slowdown in corporate profitability

A slowdown in corporate profitability could be one factor leading to a reassessment of credit risk. Although overall corporate profitability in the United States in 2006 was the strongest on record (see above), profit growth slowed markedly in late 2006 and early 2007. While positive surprises on earnings announcements again outnumbered negative ones in the fourth quarter, they did so by a much smaller margin than in previous quarters. Positive surprises rebounded somewhat in the first quarter of 2007, although this largely reflected lower expectations rather than a higher rate of profit growth.

Healthy corporate balance sheets could mitigate the effect

The impact of slowing corporate earnings on the overall default rate may, for a time, be mitigated by the healthy state of corporate balance sheets. Indeed, broad measures of corporate health suggest little cause for concern (Graph VI.15). In the aggregate, corporate leverage levels in the United States and Japan stayed well below those seen at the height of the dotcom boom, and have been falling in the euro area. Similarly, the ratio of liquid assets to total debt remained just below its recent peak in the United States, and continued its upward trend in Japan and the euro area. Finally, corporate profits as a





percentage of GDP were high in 2006. At least in the United States, the current situation appears quite different from that prior to the turning of the credit cycle in the late 1980s and late 1990s, when corporate profits were lower and leverage was somewhat higher than today.

At first sight, the downward trend in corporate leverage appears to be at odds with the increasing volumes of M&A activity and other shareholder-friendly actions documented above (Graph VI.8). However, shareholder-friendly activity is still not particularly large relative to the corporate sector on a national accounts basis. Even in the United States, the total value of LBOs amounted to approximately 3% of the total market value of equity in 2006, and it was relatively widely spread across sectors.

That said, LBO activity can lead to a substantial rise in the indebtedness of individual firms, increasing the risks of large firm default and sectoral distress. The majority of recent M&A deals have been paid for in cash, often raised in debt markets. Equity-financed deals accounted for only 12% of the total announced deal value in 2006, down from 19% in 2004 and 26% in 2002. Cash-financed acquisitions tend to result in greater indebtedness than equity-financed deals. Figures from a major rating agency indicate that the average debt/cash flow ratio for companies acquired by private equity firms reached a record high of 5.4 in 2006 (see also Chapter VII). Losses to existing debt holders upon unanticipated changes in the capital structure have been high; according to some calculations, the five largest LBOs of public companies in 2006 resulted in mark to market losses of around \$2 billion for the owners of the target companies' outstanding bonds.

Sooner or later the credit cycle will turn, and default rates will begin to rise. Strategies that earn handsome profits when spreads are low could

Greater M&A and LBO event risk at individual firms

suddenly turn out to be riskier than anticipated. In particular, it is not clear whether the current level of spreads is high enough to compensate for a return to even modestly higher default rates. Calculations by an investment bank suggest that the current low level of credit spreads in the US dollar high-yield market would not have compensated investors for the actual defaults experienced since the mid-1970s by any cohort of five-year corporate bonds.

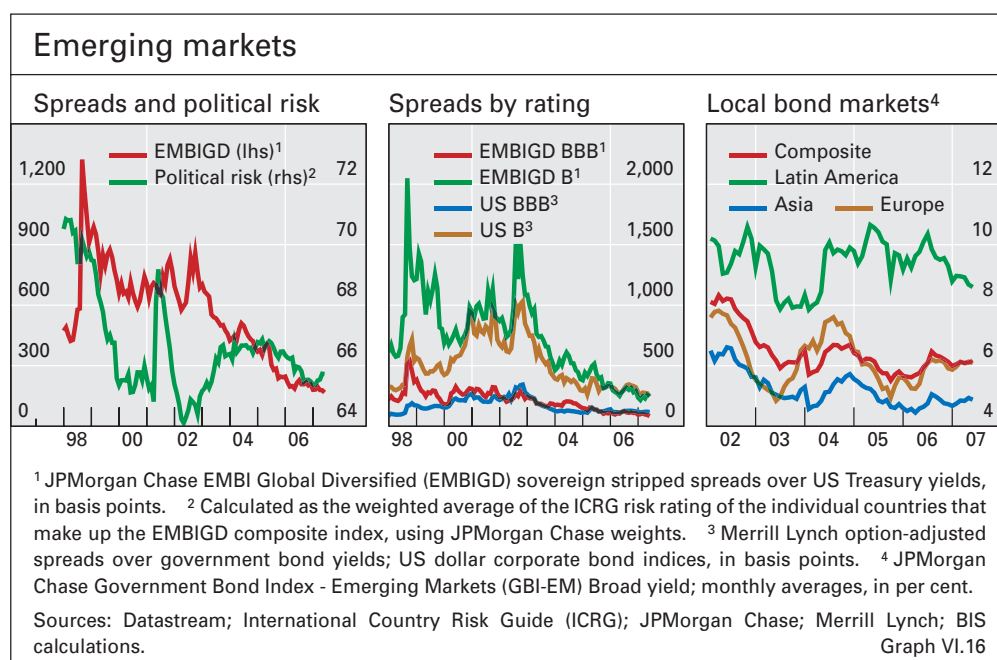
Strong demand for emerging market assets

A rally in emerging markets ...

Asset prices in emerging markets followed a similar pattern to that in mature markets. Emerging equity markets, in particular, continued their unusually strong performance of previous years (see above). Spreads on emerging market external sovereign debt continued to narrow, albeit at a slower pace than in 2005, with the EMBI Global falling to new lows (Graph VI.16). Spreads on this debt fell below those on US corporate debt with the same rating. As in developed country credit markets, spreads widened only temporarily during the two sell-offs that occurred during the period under review. Yields on local currency debt rose sharply in the first half of 2006, but declined thereafter.

... was based on strong fundamentals ...

The strong performance of emerging market assets was underpinned by yet another year of vibrant economic performance. Emerging market economies continued to experience rapid growth, and many countries further improved their fiscal and balance of payments positions, contributing to limited issuance of external debt (see Chapter III). In addition, some countries continued their policy of replacing foreign currency debt with local currency bonds. At \$6 billion, net issuance of international bonds by emerging market governments was higher than in the previous year (\$5 billion), but remained far below the levels recorded in the late 1990s (close to \$50 billion per year). Non-government debtors took advantage of the favourable financing conditions in



2006, with \$130 billion in new issuance, almost four fifths of which was by financial institutions. Equity issuance also reached new highs, with several very large IPOs from the financial sector, primarily in China and Russia.

While isolated political and economic events also contributed to volatility, they had little lasting effect overall. For example, spreads on Ecuador's external debt soared from less than 500 basis points in the summer of 2006 to more than 1,000 basis points in January 2007, over concern about an Argentine-style debt restructuring, although they later retraced much of this. A military coup in Thailand and riots in Hungary led to a general widening of spreads in September 2006, but this reversed within days. In December 2006, the imposition of capital controls in Thailand to stem the appreciation of the baht led to a 15% drop in the Bangkok stock exchange on the day of the announcement, and a depreciation of the baht by 4% over the following days, but had little impact elsewhere. However, stock prices in Thailand recovered most of their losses over the next few months after the authorities exempted many transactions from the controls. A widespread nationalisation programme introduced by the Venezuelan government in early 2007 drove up credit spreads and led stocks to plummet, but had little effect on other markets. Similarly, a political crisis in Turkey around the same time had little impact on emerging markets as a whole. Despite these events, average political risk across 22 emerging markets, based on a widely used measure, declined noticeably in the first half of 2006 and remained stable thereafter, as increasing risks in some countries were offset by declining risks in others (Graph VI.16, left-hand panel).

... and largely unaffected by political events

Are emerging market assets going mainstream?

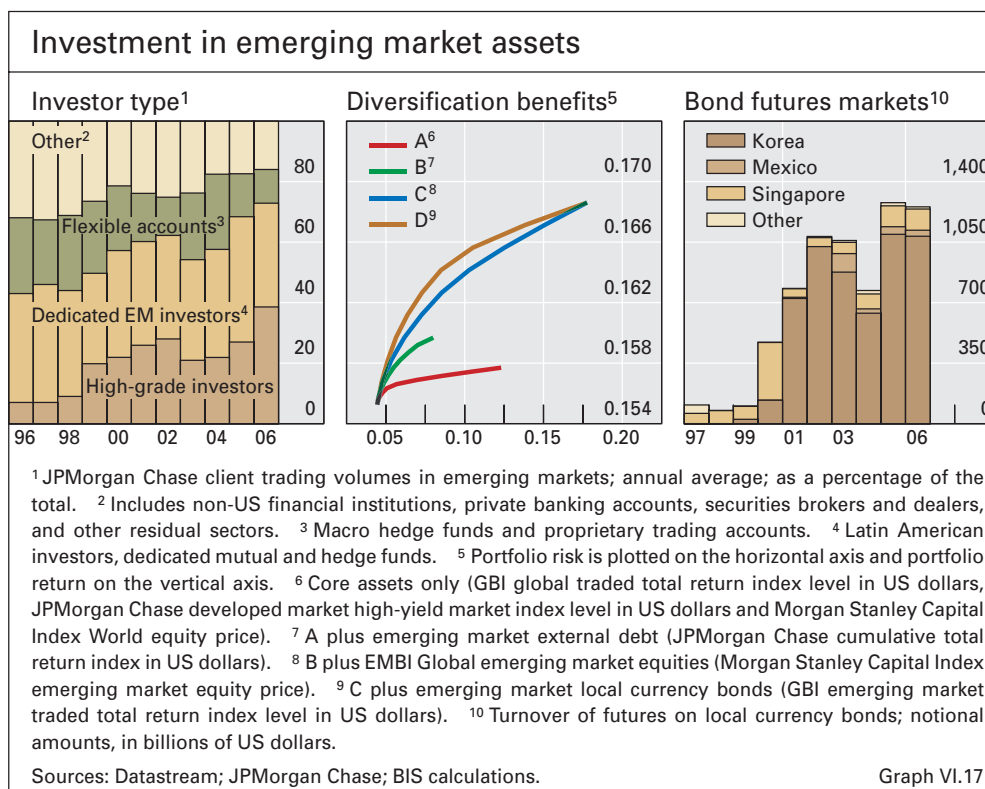
Investing in emerging market assets used to be the domain of specialised investors. This is no longer the case. According to one limited set of data, the participation of "high-grade" investors, or investors whose primary mandate is investments in highly rated assets, increased to just under 40% of client turnover in 2006, from 7% 10 years ago (Graph VI.17, left-hand panel). Specialist emerging market investors, such as dedicated mutual funds or specialised hedge funds, remain significant, although their strategy appears to have shifted from investing primarily in external sovereign debt to local currency assets.

High-grade investors ...

High returns, and the perceived benefits of portfolio diversification, have led non-specialist investors to channel funds into emerging market assets. According to a standard portfolio model estimated over the period January 2002–March 2006 (admittedly a period of high returns), investing in US dollar-denominated sovereign emerging market bonds would have considerably improved the risk/return characteristics of a portfolio relative to a benchmark containing no emerging market investments (Graph VI.17, centre panel). On an ex post basis, adding emerging market equities and local currency debt would have shifted out the portfolio frontier even further.

... have been attracted by the benefits of diversification

While exposures to emerging markets could in principle increase the risk of sharp losses at times of stress, this was not the case during the two relatively mild sell-offs during the period under review. For example, a portfolio



with a large proportion of emerging market assets would have performed worse than a similar portfolio of developed economy assets only during the sell-off in May–June 2006, in particular if it contained local currency bonds. However, the difference in performance between these portfolios would have disappeared within weeks of this episode as markets recovered. In February 2007, a higher share of emerging market investment would even have had a stabilising effect on the value of a portfolio.

While emerging market assets have clearly become more popular among institutional investors, it would be premature to consider them a truly “mainstream” asset class. One obstacle to greater participation by foreign investors is the presence of capital controls in many emerging market economies. Such restrictions might explain the much lower rates of participation by foreign investors in Asian local currency bond markets compared to those in central and eastern Europe or Latin America, where capital controls are less common. That said, foreign investors can to some extent obtain exposure even to restricted markets, indirectly through non-deliverable forwards (see Chapter III). These instruments are traded offshore and settled in foreign currency. Thus, they replicate the payoffs of local instruments without involving any transaction in the currency of the target market.

A second obstacle to more foreign investment, in particular in local currency bond markets, is the limited availability of instruments to hedge exchange rate and interest rate risk. While hedging currency movements over a few months is generally feasible, it is much more difficult to obtain protection against fluctuations in exchange rates over longer periods of time. The problem

is even more acute when it comes to trading interest rate risk. Only a few countries, namely Korea, Singapore and, to a lesser extent, Mexico, have a liquid market for bond futures (Graph VI.17, right-hand panel), although derivatives on short-term interest rates are more widely available. The absence of a liquid futures market could also detract from the development of a market for interest rate swaps, as swap dealers often use futures to hedge their positions. While far from comprehensive, the available BIS data show sizeable interest rate swap positions only in the Hong Kong dollar, although local sources of data indicate activity in several other currencies.

A third obstacle could be that the resilience of emerging market assets remains unproven under less benign global conditions. Since the default by Argentina in late 2001, there has been no major disruption in emerging markets. This is in sharp contrast with the experience of the 1980s and 1990s, when investors at times incurred heavy losses on their investments in these markets.