

# Inflation Report

November 2007



BANK OF ENGLAND







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# Inflation Report

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In order to maintain price stability, the Government has set the Bank's Monetary Policy Committee (MPC) a target for the annual inflation rate of the Consumer Prices Index of 2%. Subject to that, the MPC is also required to support the Government's objective of maintaining high and stable growth and employment.

The *Inflation Report* is produced quarterly by Bank staff under the guidance of the members of the Monetary Policy Committee. It serves two purposes. First, its preparation provides a comprehensive and forward-looking framework for discussion among MPC members as an aid to our decision making. Second, its publication allows us to share our thinking and explain the reasons for our decisions to those whom they affect.

Although not every member will agree with every assumption on which our projections are based, the fan charts represent the MPC's best collective judgement about the most likely paths for inflation and output, and the uncertainties surrounding those central projections.

This *Report* has been prepared and published by the Bank of England in accordance with section 18 of the Bank of England Act 1998.

## **The Monetary Policy Committee:**

Mervyn King, Governor

Rachel Lomax, Deputy Governor responsible for monetary policy

John Gieve, Deputy Governor responsible for financial stability

Kate Barker

Charles Bean

Tim Besley

David Blanchflower

Andrew Sentance

Paul Tucker

The Overview of this *Inflation Report* is available on the Bank's website at [www.bankofengland.co.uk/publications/inflationreport/infrep.htm](http://www.bankofengland.co.uk/publications/inflationreport/infrep.htm).

The entire *Report* is available in PDF at [www.bankofengland.co.uk/publications/inflationreport/2007.htm](http://www.bankofengland.co.uk/publications/inflationreport/2007.htm).

PowerPoint™ versions of the charts in this *Report* and the data underlying most of the charts are provided at [www.bankofengland.co.uk/publications/inflationreport/2007.htm](http://www.bankofengland.co.uk/publications/inflationreport/2007.htm).



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# Overview

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The past three months have witnessed considerable turmoil in international financial markets. In the United Kingdom, output rose briskly in the third quarter. Consumer spending appears to have stayed firm. And businesses' investment intentions remained relatively upbeat. Surveys suggest that GDP growth may have begun to slow in the fourth quarter. Economic prospects deteriorated in the United States and other advanced economies but remain buoyant in the emerging economies. Under the assumption that Bank Rate follows a declining path implied by market yields, the Committee's central projection is for output growth to slow, reflecting past increases in Bank Rate and the effects of recent financial market developments. Growth then recovers, as some of those effects wear off and the impact of declining interest rates and a lower exchange rate is felt.

The margin of spare capacity within companies remained limited but showed signs of easing. Pay pressures appeared subdued. And CPI inflation fell back to around the 2% target. But oil prices reached a new peak and futures prices for wholesale gas rose. In the central projection, higher energy and import prices push inflation above the target in the near term. Inflation then falls back to settle around the target in the medium term. The risks to growth are on the downside, while those to inflation are balanced.

## Financial markets

The period since the *August Report* has been one of turmoil in developed country financial markets. Growing losses on US sub-prime mortgage portfolios prompted a general loss of confidence in asset-backed securities and structured credit instruments. The consequent funding difficulties of some banks and their associated off balance sheet vehicles prompted the hoarding of liquidity and a sharp rise in term interbank interest rates. Although conditions in some markets have since improved, the global financial system remains vulnerable to further shocks. Some tightening in the terms and availability of credit to UK households and businesses appears to be in train, particularly for riskier borrowers. The possible impact on spending of recent and prospective developments in financial markets represents a key uncertainty surrounding the outlook and is a theme running through this *Report*.

Reflecting these developments, the US Federal Reserve has reduced its policy rate since the *August Report*, and expectations of official interest rates have fallen in the euro area and the United Kingdom, as well as in the United States. Partly as a result of that, equity prices for non-financial companies have so far remained buoyant, if somewhat volatile. Despite reaching its highest level against the dollar

for 26 years, sterling was some 2½% lower in trade-weighted terms than in August.

### Domestic demand

At the time of the *August Report*, the Committee judged that some slowing in the pace of output growth was necessary to meet the 2% inflation target in the medium term. Indicators suggest that real consumer spending has remained resilient in recent months, despite subdued income growth and the past increases in Bank Rate. That may reflect households' confidence in their income prospects, the delayed pass-through of Bank Rate increases into retail interest rates and, more recently, deep price discounting by retailers. But housing market activity has cooled and house price inflation has eased. Looking ahead, past increases in Bank Rate, tighter credit conditions, lower house price inflation and heightened uncertainty are expected to dampen spending growth, partly offset by a prospective recovery in the growth of real post-tax income.

Although business investment growth faltered in the first half of 2007, investment intentions have remained relatively upbeat, buoyed by the strength of corporate finances. But heightened uncertainty may encourage companies to put capital expenditure plans on hold. Tighter credit conditions may also weigh on spending, especially in smaller firms and for investment in residential and commercial property.

Government spending continued to make a moderate contribution to overall demand growth. Looking ahead, the spending plans set out in *October's Pre-Budget Report and Comprehensive Spending Review* were broadly in line with those contained in the 2007 Budget. They imply that the public sector's contribution to nominal demand growth is set to decline over the forecast period.

### Overseas trade

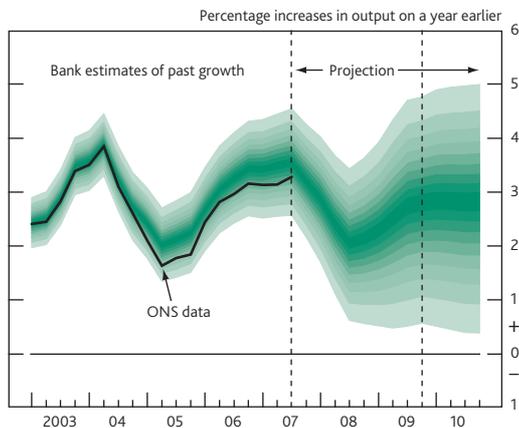
The composition of global output growth appears to be shifting away from the advanced economies towards the emerging economies. The US housing market deteriorated further, though household and business spending have so far remained firm. And in the euro area, weaker business surveys pointed to a moderation in the underlying pace of expansion. By contrast, GDP growth has remained rapid in non-Japan Asia and other emerging markets. So far, the emerging economies appear to have been relatively insulated from the international financial market turbulence. Together with the assumption of more accommodative monetary policies in the major economies, that has led the Committee to expect only a modest slowdown in UK-weighted world output growth. But continued financial market turbulence and a more pronounced reduction in the availability of credit would pose a threat to that outlook.

The moderation in the pace of global growth is likely to weigh on the demand for UK exports, but this is likely to be offset by the boost from sterling's recent depreciation. Net trade, which is reported to have added to GDP growth in the second quarter, is expected to make a broadly neutral contribution over the forecast period.

## The outlook for GDP growth

According to the ONS's preliminary estimate, GDP rose by 0.8% in 2007 Q3. The past pattern of revisions, together with readings from business surveys, suggest that the official estimates of growth over the recent past are rather more likely to be revised upwards than downwards. That is reflected in **Chart 1**, which shows the Committee's best collective judgement of the most likely path over the past for the mature data for four-quarter GDP growth, together with its assessment of the associated uncertainty.<sup>(1)</sup> Business surveys and reports from the Bank's regional Agents point to a deceleration in activity in the fourth quarter.

**Chart 1** GDP projection based on market interest rate expectations



The fan chart depicts the probability of various outcomes for GDP growth. To the left of the first vertical dashed line, the distribution reflects the likelihood of revisions to the data over the past; to the right, it reflects uncertainty over the evolution of GDP growth in the future. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that the mature estimate of GDP would lie within the darkest central band on only 10 of those occasions. The fan chart is constructed so that outcomes are also expected to lie within each pair of the lighter green areas on ten occasions. Consequently, GDP growth is expected to lie somewhere within the entire fan on 90 out of 100 occasions. The bands widen as the time horizon is extended, indicating the increasing uncertainty about outcomes. See the box on page 39 for a fuller description of the fan chart and what it represents. The second dashed line is drawn at the two-year point of the projection.

**Chart 1** also shows the Committee's best collective judgement of the outlook for GDP growth, assuming that Bank Rate follows a declining path implied by market yields. The central projection is for growth to slow to below its long-term average as consumer spending and business investment decelerate, reflecting the impact of past increases in Bank Rate, tighter conditions in credit markets and heightened uncertainty. Growth then recovers as the effect of lower official interest rates and the lower value of sterling work through and uncertainty dissipates. The slowing in the first year of the projection is a little sharper than in the *August Report* and the subsequent pickup correspondingly stronger.

## Costs and prices

CPI inflation reached 1.8% in September, 1.3 percentage points below its March peak. Much of that fall was accounted for by lower domestic energy price inflation, though movements in food and household goods prices also played a part. CPI inflation is likely to pick up again over the next year, mainly reflecting recent increases in energy prices.

Since the *August Report*, oil prices have reached a new peak near \$100 a barrel and wholesale gas futures prices have risen. Other commodity prices have remained strong and sterling has depreciated. Those factors should push up input and import price inflation in the near term.

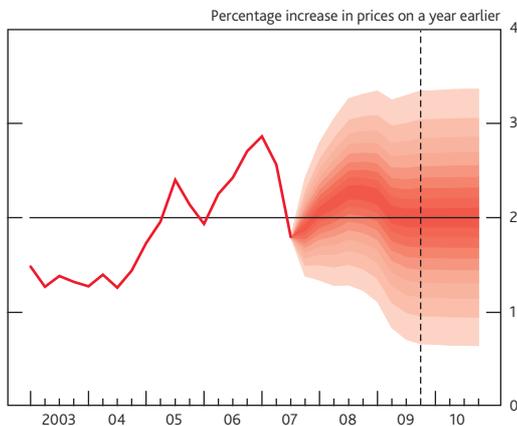
Recent evidence on labour cost pressures has been mixed. Pay growth appears subdued according to the average earnings index, although the experimental average weekly earnings measure suggests rather higher growth. Private sector employment growth has picked up after its weakness earlier in

(1) See the box on page 39.

the year and unemployment has edged down, while the number of vacancies has increased. But other indicators — such as rising inactivity — remain consistent with a degree of slack in the labour market.

The margin of spare capacity within businesses appears to have been limited over the past year or so. Recent business surveys and reports from the Bank's regional Agents provide tentative signs of easing in this pressure on capacity. Survey measures of businesses' pricing intentions nevertheless remain somewhat elevated. That may reflect the passing on of higher costs against a backdrop of strong demand. It is also possible that the period of above-target CPI inflation earlier this year may have raised inflation expectations. Businesses' inflation expectations are not directly observed, but survey measures of households' inflation expectations have not yet fallen back, despite the decline in inflation.

**Chart 2** CPI inflation projection based on market interest rate expectations



The fan chart depicts the probability of various outcomes for CPI inflation in the future. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that inflation over the subsequent three years would lie within the darkest central band on only 10 of those occasions. The fan chart is constructed so that outcomes of inflation are also expected to lie within each pair of the lighter red areas on 10 occasions. Consequently, inflation is expected to lie somewhere within the entire fan chart on 90 out of 100 occasions. The bands widen as the time horizon is extended, indicating the increasing uncertainty about outcomes. See the box on pages 48–49 of the May 2002 *Inflation Report* for a fuller description of the fan chart and what it represents. The dashed line is drawn at the two-year point.

## The outlook for inflation

Chart 2 shows the Committee's best collective judgement of the outlook for CPI inflation, also assuming that Bank Rate follows market yields. In the central projection, inflation rises above the 2% target next year, reflecting the impact of higher energy price inflation and the depreciation of sterling. It then eases back as pressures on capacity moderate, settling at the target in the medium term. The profile is somewhat higher next year than in the *August Report*.

As usual, there are substantial uncertainties surrounding these projections. These include: the implications of financial market developments for credit conditions, asset prices and spending; the prospects for world growth and prices; and the evolution of wages and inflation expectations. Overall, the risks to growth are on the downside, while those to inflation are balanced. The uncertainties surrounding the medium-term outlook are judged to be higher than in August. There is a range of views among the Committee on both the central projection and the balance of risks.

## The policy decision

At its November meeting, the Committee noted that the central projection, under the assumption that Bank Rate followed a declining path implied by market yields, was for GDP growth to slow and then recover and for CPI inflation to rise above the 2% target in the short term and then ease back to settle around it. The Committee also noted that there were considerable uncertainties relating both to the impact of recent developments in financial markets and to the consequences of the recent rise in energy prices. Bearing in mind these risks, the Committee judged at its November meeting that it was appropriate to leave Bank Rate unchanged in order to meet the target for CPI inflation over the medium term.

# 1 Money and asset prices

The MPC has left Bank Rate unchanged since the *August Report*. The past three months have been characterised by financial market disruption and a contraction of liquidity in international money markets. Reflecting these developments, three-month sterling interbank rates rose, credit spreads widened and market expectations of policy rates fell. Equity prices increased and the sterling effective exchange rate depreciated. House price inflation eased in Q3. The growth rates of money and credit remained rapid, although these data may have been affected by recent financial market disruption. Credit conditions tightened, especially for those companies more reliant on bank lending and for higher-risk households. In recent weeks, conditions in some financial markets have improved, but the global financial system remains vulnerable to further shocks.

Since the *August Report*, there has been significant disruption in many financial markets. Growing arrears and losses on US sub-prime mortgage portfolios undermined confidence in the valuation of asset-backed securities and other credit instruments, triggering a widespread reappraisal of risk by investors across many countries.<sup>(1)</sup> These events led to a contraction of liquidity in international money markets.

Section 1.1 discusses these events and the associated developments in asset prices across a range of financial markets. Assessing their possible implications for activity and inflation is a central issue for the Committee, and the box on pages 14–15 presents a framework, used throughout this *Report*, outlining the key transmission channels. Section 1.2 discusses how financial market developments have affected banks' behaviour and the latest monetary aggregates. Section 1.3 assesses how the credit conditions facing the corporate and household sectors have changed.

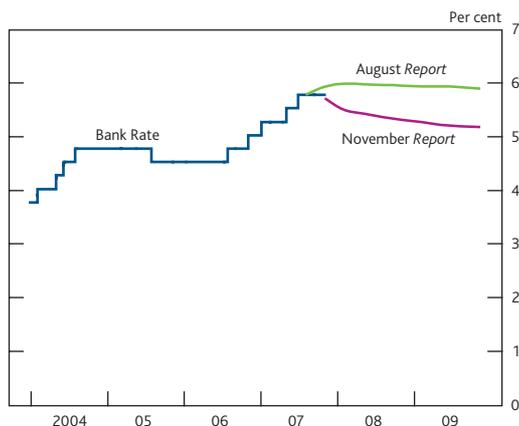
## 1.1 Financial markets and asset prices

### Interest rates

Since the *August Report*, the MPC has kept Bank Rate unchanged at 5.75% (**Chart 1.1**). The box on page 10 summarises the reasons for the Committee's policy decisions in September and October. In the United States, the Federal Reserve cut the target federal funds rate by 0.75 percentage points, to 4.5%. In the euro area and Japan, official rates were left unchanged.

Over the past three months, heightened uncertainty about the valuation of asset-backed securities triggered a sharp fall in

**Chart 1.1** Bank Rate and market interest rate expectations<sup>(a)</sup>



Sources: Bank of England and Bloomberg.

(a) The method used to estimate market expectations of future policy rates in November has been adjusted in light of recent movements in London interbank offered rates (Libor) (see the box on page 12). The August curve is based on the average of one-day forward rates in the five working days to 1 August. Those rates were derived from instruments that settle on Libor, adjusted for credit risk.

(1) For a fuller discussion of the source of the volatility, see the October 2007 *Financial Stability Report*.

## Monetary policy since the August Report

The MPC's central projection in the *August Report*, under the assumption that Bank Rate followed a path implied by market yields, was for four-quarter GDP growth to slow to a rate close to its long-run average, driven by a slowdown in consumption and investment growth. CPI inflation was projected to fall back, settling around the 2% target.

In the month leading up to the Committee's meeting on 5–6 September, there had been considerable disruption in credit and money markets. The Committee noted that these events would eventually lead to a re-evaluation of risk and the price of credit. But the overall impact of this dislocation on activity and inflation would depend on how long it persisted and how widespread it turned out to be. That was still very unclear.

In the United States, growth had remained resilient in Q2, despite further evidence of housing market weakness. Surveys for Q3 had been consistent with somewhat slower growth, as expected at the time of the *August Report*. Euro-area growth had been weak in Q2, but that might have reflected erratic factors: surveys pointed to firm growth in the third quarter. Economies such as China and India continued to make a strong contribution to world activity.

In the United Kingdom, growth had been unrevised in Q2, and survey indicators pointed to robust growth in Q3, with some indications of a possible moderation in consumption. The margin of spare capacity in the economy appeared limited, and indicators of pricing pressure remained somewhat elevated. Despite a recovery in employment growth, pay growth had remained muted. One possible explanation was that migrant labour might be pushing down on the level of wages. A second was that higher non-wage costs required further downwards adjustments in real wages.

CPI inflation had fallen sharply, to just below the 2% target. This fall was slightly bigger than expected in the *August Report*. The Committee noted that the fall should help to contain inflation expectations going forward.

Overall, the news from the real economy had not materially changed the outlook. But alongside developments in financial markets, the Committee judged that the upside balance of risks to inflation incorporated into the August projections had probably receded. The Committee voted unanimously to maintain Bank Rate at 5.75%.

By the time of the MPC meeting on 3–4 October, there had been some signs that conditions in credit and money markets were starting to improve, although they remained fragile. Interest rate expectations had fallen internationally, but

sterling, euro and dollar three-month Libor rates were still high relative to the corresponding expected policy rates.

Overall, the story of the past few months had been one of downside news for the major economies and upside news for the emerging market economies. Although some of the data for the United States had been reasonably positive, the continuing fall-out from the financial market turmoil could bear down on household and corporate spending. In the euro area there had been falls in surveys of activity and confidence, possibly pointing to weaker growth ahead. In Japan, Q2 growth had been revised down, but the outlook for the rest of Asia remained robust.

In the United Kingdom, there had been only limited signs of slowing in the economy. Surveys of business activity had, if anything, pointed to stronger growth in Q3 than had been expected at the time of the *August Report*. But there had been signs that growth would ease further ahead. Some surveys had indicated that consumer spending was moderating and indicators of housing market activity were so far consistent with a gradual slowdown in house price inflation. There was some evidence that credit conditions had begun to tighten in the corporate sector. But the extent and duration of any tightening, and its impact on the rest of the economy, was still uncertain.

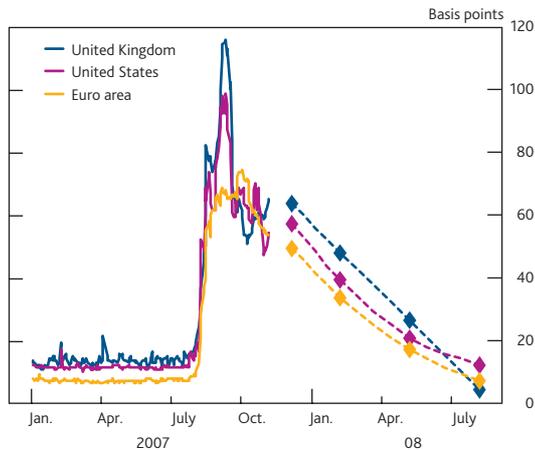
The recovery in employment had continued, which helped to resolve the earlier puzzle posed by the juxtaposition of weak employment growth and elevated capacity pressures. Most members thought that the evidence pointed to a gentle tightening of conditions in the labour market. But, for one member, the labour market data were consistent with an easing.

The Committee noted that a precautionary reduction in Bank Rate could forestall a sharper slowdown in output growth. But it was important not to prevent the slowdown in demand envisaged at the time of the *August Report*. There was a danger that an unexpected reduction in Bank Rate would be misinterpreted as a signal that the outlook for growth and inflation had moved decisively to the downside. A cut in rates could also be misinterpreted as a signal that monetary policy was focused on supporting the financial system and not on meeting the inflation target.

Starting from a position of strength in the economy, there was time to consider how changes in credit conditions would affect the outlook for inflation. Eight members of the Committee voted to maintain Bank Rate at 5.75%. One member voted for a 25 basis point reduction in Bank Rate.

At its meeting on 7–8 November, the Committee voted to maintain Bank Rate at 5.75%.

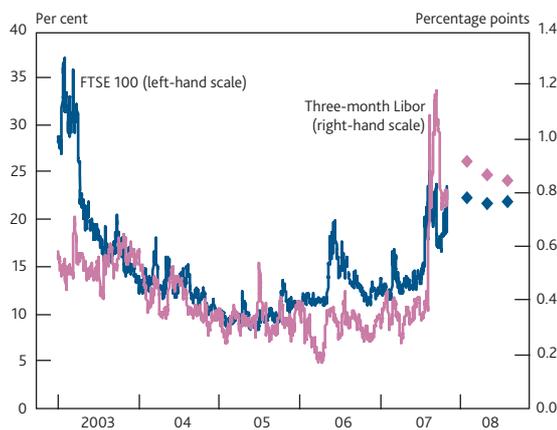
**Chart 1.2** Three-month interbank rates relative to future expected policy rates<sup>(a)</sup>



Sources: Bloomberg and Bank calculations.

(a) Three-month Libor spread over overnight interest rate swaps. Dotted lines show forward spreads derived from forward rate agreements.

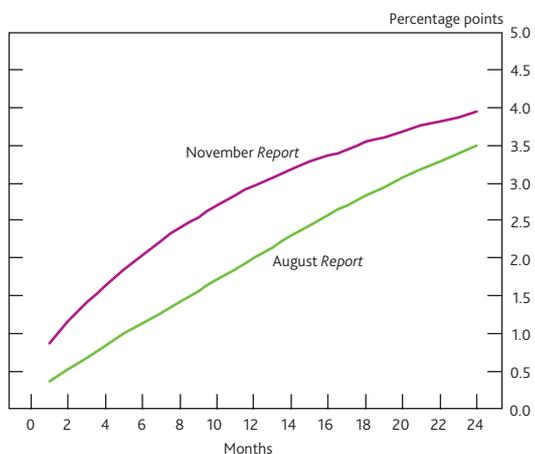
**Chart 1.3** Market implied volatility<sup>(a)</sup>



Sources: Bank of England and Euronext.liffe.

(a) Three-month implied volatilities are derived from the prices of options traded on Euronext.liffe for the FTSE 100 and three-month Libor. The solid lines represent the evolution of uncertainty over the next three months. The diamonds represent uncertainty over a three-month period beginning in three, six and nine months' time respectively.

**Chart 1.4** Uncertainty about three-month sterling market interest rates<sup>(a)</sup>



Sources: Bank of England and Euronext.liffe.

(a) The chart shows the width of the central 90% of the estimated probability distribution of the path of future interest rates, based on the assumption that investors are risk-neutral. The distributions are derived using prices of options on three-month Libor contracts traded on Euronext.liffe.

investor demand. As a result, issuers experienced difficulty in selling asset-backed securities and asset-backed commercial paper. Faced with a reduced ability to raise funds by securitising assets, as well as the increased likelihood that committed credit lines to off balance sheet vehicles would be activated, banks responded by hoarding liquid assets and by reducing lending to each other.

These factors led to unusual movements in term interbank rates. Since the *August Report*, the spread between three-month interbank rates and the expected path of official rates — which is usually relatively small and stable — has risen significantly across countries (**Chart 1.2**). That spread has fallen back since its peak in September, but remains elevated relative to recent years. Overall, global financial markets remain vulnerable to further shocks.

The unusual movements in interbank rates have led the MPC to adjust the method it uses to estimate market expectations of Bank Rate (see the box on page 12). This estimate suggests that, in the run-up to the November MPC meeting, the expected levels of future Bank Rate were around 50–75 basis points lower than in August (**Chart 1.1**). Interest rate expectations have also been revised down in the United States and the euro area. Movements in market-based measures of inflation expectations are discussed in Section 4.

There is significant uncertainty surrounding the future path of expected sterling interest rates. **Chart 1.3** shows that one measure of interest rate uncertainty — three-month Libor implied volatility — has increased significantly since the *August Report*, and is expected to remain elevated. Uncertainty about the future path of sterling interest rates is not confined to the near term: **Chart 1.4** shows that market participants are more uncertain than in August about the path of future rates at both short and long horizons. But it is difficult to disentangle how much of this reflects heightened uncertainty about the spread between interbank rates and future Bank Rate, and how much reflects uncertainty about Bank Rate itself.

Since the *August Report*, investors appear to have undertaken a widespread re-evaluation of risk. A general flight to quality contributed to a fall in interest rates on government bonds, and a marked increase in the compensation that investors demanded for holding riskier and more illiquid assets. For some lower-risk assets, this was offset by a fall in risk-free rates — yields on investment-grade bonds, which account for around 90% of global corporate bond issuance,<sup>(1)</sup> have changed little since August (**Chart 1.5**). But yields on higher-risk bonds rose, though they remained below their average over the past decade.

(1) See the box on pages 20–21 of the October 2007 *Financial Stability Report*.

## Estimating market interest rate expectations

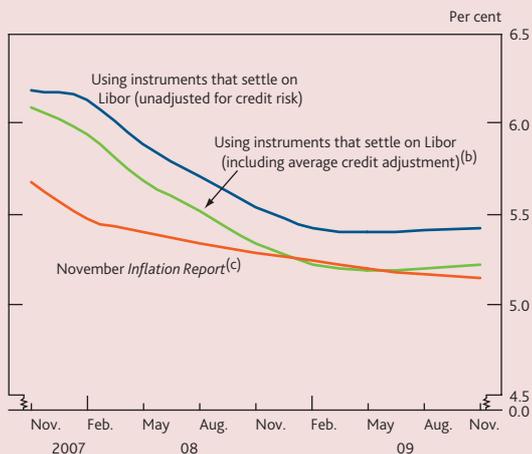
Under its usual convention, the MPC conditions its projections for GDP growth and CPI inflation on an expected path for Bank Rate estimated from financial market instruments.<sup>(1)</sup>

There are a variety of ways of estimating market participants' expectations of the path of Bank Rate. One approach is to use instruments that settle on the London interbank offered rate (Libor). Bank Rate expectations cannot be read off directly from Libor rates because these interbank loans are unsecured, and consequently include a credit risk premium associated with the probability of bank default. But because these premia have generally been modest and have changed only slowly over recent years, a simple adjustment can normally be made to account for credit risk. Curves adjusted in this way have been used to condition the MPC's projections since November 2004.

However, both the level and the implied volatility of term sterling Libor rates have risen sharply since the beginning of August. These movements mean that the usual adjustment for credit risk is not currently appropriate. The MPC has therefore changed the way it estimates market beliefs about the future path of Bank Rate for this Report (Chart A). At short maturities, the curve embodied in the latest projection is derived from gilt repo rates. Gilt repo transactions involve the temporary exchange of cash for government bonds: essentially secured lending backed by a default-free security. Repo rates are closely linked to the expected future path of

Bank Rate, and are less affected than Libor rates by the dislocation in interbank markets.<sup>(2)</sup> At longer maturities, the curves derived from instruments that settle on Libor are likely to be less affected by the recent market turbulence. As a result, those curves are used to estimate expectations of Bank Rate at longer horizons.

Chart A Market interest rate expectations<sup>(a)</sup>

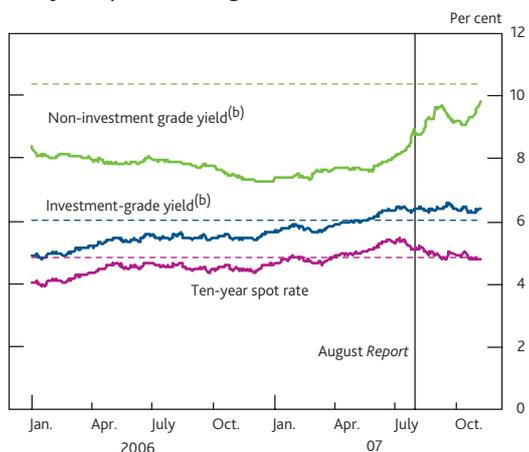


Sources: Bank of England and Bloomberg.

- (a) All curves are based on fifteen working day averages to 7 November.
- (b) Average adjustment over the previous four *Inflation Reports*.
- (c) Based on a combination of a curve estimated from general collateral (GC) gilt repo rates at maturities up to a year and a curve derived from instruments that settle on Libor at maturities over 18 months, adjusted for credit risk. The intervening period has been interpolated, and the whole curve subsequently smoothed.

- (1) For more information, see the box, 'The interest rate assumptions in the projections', on pages 42–43 of the August 2004 *Inflation Report*.
- (2) The general collateral (GC) repo curve can only be estimated out to a year, so the Committee's three-year projections cannot be conditioned on this curve alone.

Chart 1.5 Sterling corporate bond yields and the ten-year spot rate on government bonds<sup>(a)</sup>



Sources: Bank of England, Bloomberg and Merrill Lynch.

- (a) Dotted lines show averages since 1998.
- (b) Investment-grade yields are calculated using an index of bonds with a composite rating of BBB3 or higher. Non-investment grade yields are calculated using an index of bonds with a composite rating lower than BBB3.

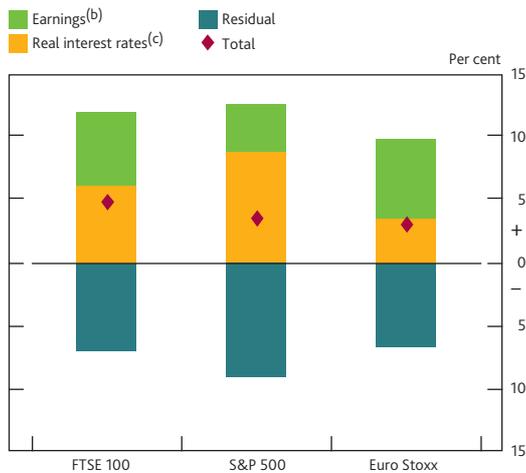
Over the past four years, sterling non-investment grade bonds yields had fallen to historically low levels, driven by a compression in spreads. Some of that decline is likely to have reflected a mispricing of risk, which has begun to unwind. Section 5 discusses the implications of changes in spreads for activity and inflation.

## Equity prices

Equity prices have been volatile since the August Report. However, despite marked falls in financial sector share prices, the FTSE All-Share index was 4.2% higher in the run-up to the November Report than it was three months earlier. Equity price indices in the United States and the euro area also ended the period higher, while share prices in emerging economies rose rapidly, by more than 20% since the August Report.

The strength of international equity price indices may appear surprising in the light of recent market events and the downward revisions to GDP growth forecasts for the advanced economies (Section 2). Equity prices should equal the value investors place today on the future expected flow of dividend payments. That in turn will depend on real interest rates,

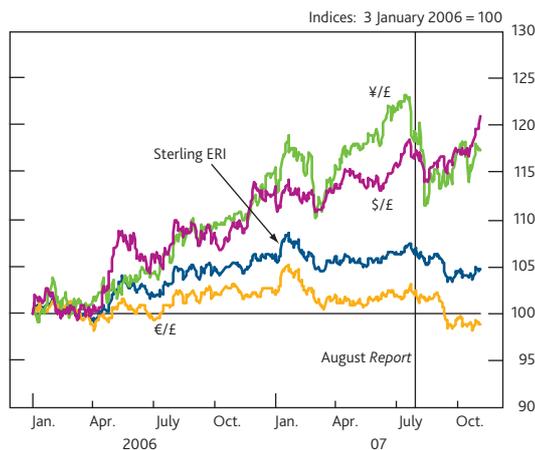
**Chart 1.6** Decomposition of the changes in equity prices since the August Report<sup>(a)</sup>



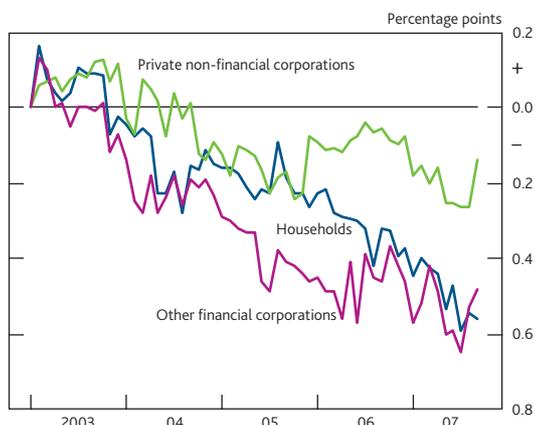
Sources: Bank of England, Bloomberg and Thomson Datastream.

- (a) Decomposition uses a dividend discount model. See footnote (1) on this page for reference.  
 (b) Based on current dividends and analysts' expectations of long-term earnings growth.  
 (c) Ten-year real spot rate derived from government bonds, except for the United States where a nine-year rate is used.

**Chart 1.7** Cumulative changes in sterling exchange rates since 3 January 2006



**Chart 1.8** Changes in effective interest rate spreads on loans since January 2003<sup>(a)</sup>



Sources: Bank of England and Bloomberg.

- (a) Effective retail interest rates on the stock of outstanding loans relative to an appropriate funding rate. For floating-rate products, that is assumed to be Bank Rate. For fixed-rate products, Libor and swap rates of similar maturities are used (averaged over the relevant horizon and lagged one month). Prior to 2004, the shares of each product within the total borrowing of each sector are held constant due to lack of data.

expected earnings and the risk premium associated with holding equities. Movements in equity prices can be decomposed into changes in these components using a simple accounting approach (Chart 1.6).<sup>(1)</sup> According to this model, part of the recent rise in international equity prices can be accounted for by lower long-term interest rates (which increase the value today of future dividends), and part by continued robust forecasts of long-term earnings growth. However, market participants remain uncertain about the outlook for equity prices: implied volatility has picked up sharply since August, and is expected to remain elevated (Chart 1.3).

### Exchange rates

The sterling ERI averaged 102.6 in the fifteen working days to 7 November, 2.4% below the starting point in the August Report (Chart 1.7). Within the ERI, there were material movements in bilateral exchange rates. Sterling reached its highest level against the dollar for 26 years, but this was more than offset in trade-weighted terms by movements in other exchange rates, in particular a decline of more than 3% in the value of sterling against the euro. Movements in exchange rates should reflect changes in expected risk-free rates denominated in different currencies. Overall, only part of the fall in sterling since August can be accounted for by movements in relative interest rates. Financial market participants ascribed some of the decline in sterling to weaker UK growth prospects.

### Property prices

Over the past few years, house prices have been supported, in part, by a loosening in credit conditions. As discussed in the August Report, spreads on household lending (the difference between retail loan rates and wholesale funding costs) narrowed by a little over half a percentage point between January 2003 and September 2007 (Chart 1.8). In part, that reflected the growth of the securitisation market which had provided lenders with a relatively cheap source of funding. One implication of the recent disruption in financial markets is that some of the earlier compression in spreads is likely to unwind. Other things being equal, that will increase home loan rates and so reduce demand for secured borrowing.

In Q3, house price inflation continued to slow, although the data in October were mixed — Nationwide reported that prices had risen by 1.1% on the month, while Halifax reported a 0.5% fall. Indicators of future activity also moderated further: according to the Home Builders Federation, the number of site visits fell to its lowest level since 1992; and new buyer enquiries and net reservations fell (Table 1.A).

(1) For more analysis see Panigirtzoglou, N and Scammell, R (2002), 'Analysts' earnings forecasts and equity valuations', *Bank of England Quarterly Bulletin*, Spring, pages 59–66.

## The transmission of recent developments in financial markets to activity and inflation

The period since the *August Report* has been characterised by significant movements in financial market prices. A central judgement for the MPC is how these movements are likely to affect activity and inflation. This box sets out the key transmission channels (**Chart A**), while the main text of the *Report* assesses the impact of each channel.

### Bank and non-bank finance

Developments in financial markets can affect both banks' ability and willingness to lend and companies' ability to raise funds in the capital markets. That in turn will affect the consumption and investment decisions of households and businesses.

### Price and availability of bank funding

Banks can fund their lending activities either by accepting customer deposits or by raising funds in the capital markets. The latter can include borrowing from other banks in the interbank market and packaging assets as securities that are subsequently purchased by other investors. In the face of higher funding costs, driven for example by weaker demand for asset-backed securities or a general reappraisal of risk, banks are likely to increase the rates charged on their loans. In addition, they may decide to ration the quantity of credit they are willing to extend at any given price.

### Bank capital channel

The ratio of banks' capital to their assets is known as the capital ratio. This ratio will be affected by changes in both the value of their capital and the quantity of loans they extend.

Following the recent developments in financial markets, some banks have experienced an unanticipated expansion of their assets, as loans that they would normally have sold on have remained on their balance sheets, and as committed credit lines to their off balance sheet investment vehicles have been activated. Other things being equal, this will cause their capital ratios to fall.

Different lenders are likely to respond in different ways to changes in their capital ratios. Banks are required by the Financial Services Authority to maintain a minimum capital ratio. But banks usually aim to maintain a ratio in excess of that requirement, to ensure both that they can withstand unexpected changes in their balance sheets, and that they can secure a high credit rating, which improves the terms on which they can access capital markets. As a result, movements in capital ratios relative to their desired levels can affect banks' ability and willingness to lend.

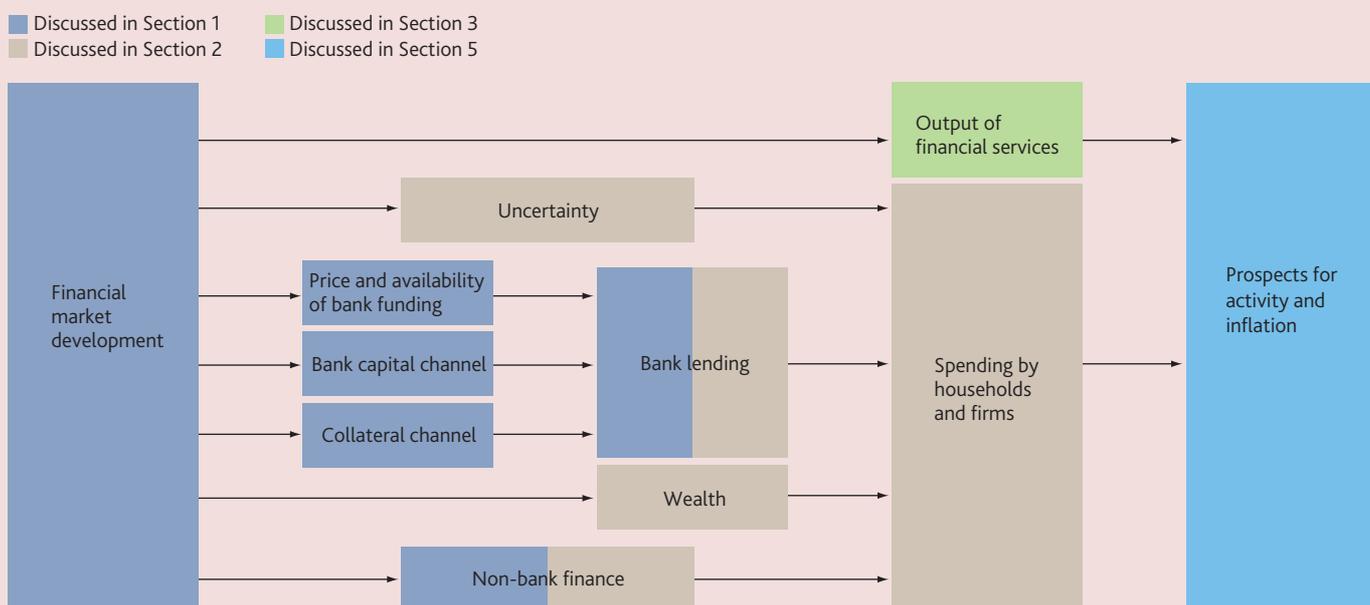
### Collateral channel

The prices that banks charge on their loans will depend in part on borrowers' financial positions. Loans to borrowers with weaker balance sheets are more risky, and so will command a higher premium. Changes in asset prices (such as equity prices and house prices) will affect the premium banks charge on these loans by changing the value of borrowers' collateral. That could exacerbate the impact of changing credit conditions. This mechanism is known as the 'financial accelerator'.

### Non-bank finance

Instead of borrowing from banks, some businesses will be able to raise funds in the capital markets themselves, by issuing new bonds or equity. Developments in financial markets can

**Chart A** Transmission channels



affect the cost of issuing different forms of capital, which in turn will affect companies' cost of finance.

### Other channels

There are a number of other channels through which the recent episode of financial market turbulence might influence spending decisions. First, if developments in financial markets affect household wealth via changes in asset prices, they could have a direct impact on spending growth. Second, changes in perceptions of risk may lead households to reduce consumption and increase savings as a precaution against any future deterioration in income, wealth or their ability to obtain credit (Section 2.1). Similarly, companies may postpone

investment projects in the face of greater uncertainty about the cost of finance and about future demand conditions (Section 2.2). And third, the turbulence will affect the output of the UK financial services industry and associated sectors (Section 3.1).

There are more channels that have, for simplicity, not been shown in **Chart A**. For example, movements in financial markets can exert a direct influence on inflation via their impact on exchange rates. And given the global nature of the turbulence, the outlook for global prices and demand for UK exports will also be affected.

**Table 1.A** Housing market indicators<sup>(a)</sup>

	Averages since 2000	2006	2007			
		Q4	Q1	Q2	Q3	Oct.
<b>Activity</b>						
Mortgage approvals (000s) <sup>(b)</sup>	108	123	117	112	108	n.a.
RICS sales to stocks ratio <sup>(c)</sup>	0.43	0.42	0.46	0.41	0.38	n.a.
RICS new buyer enquiries <sup>(d)</sup>	-3	6	-10	-11	-39	n.a.
HBF net reservations <sup>(e)(f)</sup>	1	31	-8	-7	-26	n.a.
HBF site visits <sup>(e)(f)</sup>	-8	7	-27	-22	-34	n.a.
<b>Prices</b>						
Average of lenders' indices <sup>(g)</sup>	2.9	3.3	2.6	2.4	1.4	1.1
HBF current balance <sup>(d)(f)</sup>	24	28	17	5	0	n.a.
RICS current balance <sup>(h)</sup>	18	42	27	20	-2	n.a.
RICS expectations balance <sup>(h)</sup>	14	34	19	4	-14	n.a.

Sources: Bank of England, Halifax, Home Builders Federation (HBF), Nationwide and Royal Institution of Chartered Surveyors (RICS).

(a) Averages of monthly data. All series are net percentage balances unless otherwise stated.

(b) Loan approvals for house purchase.

(c) Ratio of sales recorded over the past three months relative to the level of stocks on estate agents' books at the end of the month.

(d) Compared with the previous month.

(e) Compared with a year ago.

(f) Seasonally adjusted by Bank staff.

(g) Three-month on previous three-month percentage changes, based on Halifax and Nationwide indices.

The published Halifax index has been adjusted in 2002 by the Bank of England to account for a change in the method of calculation.

(h) Changes during the past three months or expected over the next three months.

Commercial property prices may also have been supported by a loosening in credit conditions in the past — spreads on lending to private non-financial corporations (PNFCs) narrowed by around ¼ of a percentage point between 2003 and mid-2007. But data from the Investment Property Databank suggest that commercial property price inflation, which had been robust in recent years, has been declining since the middle of 2006 and that prices have been falling since July.<sup>(1)</sup>

## 1.2 Bank behaviour and monetary aggregates

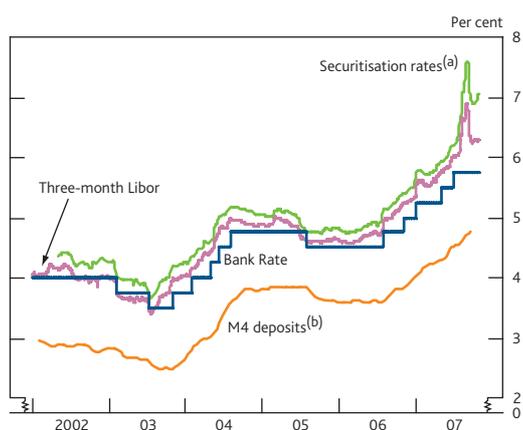
Commercial banks play a key role in the transmission mechanism by intermediating funds between borrowers and savers. Recent financial market turbulence may affect banks' ability and willingness to lend (see the box on pages 14–15).

Bank funding costs have risen since the *August Report* (**Chart 1.9**). Other things being equal, this would prompt lenders to raise the price or reduce the quantity of new lending. And although banks' capital ratios were well in excess of the regulatory minimum prior to the financial market turbulence,<sup>(2)</sup> recent developments are likely to put downwards pressure on those ratios. If banks wish to relieve some of this pressure, and are unable or unwilling to issue new capital, then they may cut back on new lending.

Though some reduction in lending growth seems likely in the medium term, the growth of banks' balance sheets has so far remained robust. Broad money and M4 lending (excluding the effect of securitisations) grew at 12.8% and 15.1% respectively in the year to September. However, the recent developments in financial markets mean that this aggregate picture may be misleading. For example, the recent strong flows of lending to

(1) For a further discussion of recent trends in commercial property prices, see pages 27–28 of the October 2007 *Financial Stability Report*.

(2) Table 1 in the box on pages 32–33 of the October 2007 *Financial Stability Report* shows how banks' capital ratios would remain well above the regulatory minimum in the face of an unanticipated balance sheet expansion.

**Chart 1.9** Lenders' funding costs

Sources: Bank of England, Bloomberg, Lehman Brothers and Bank calculations.

(a) Calculated using three-month Libor rates and spreads on a range of asset-backed securities, weighted together by annual issuance.

(b) M4 deposits line shows the weighted average of effective deposit rates for households, private non-financial corporations and other financial corporations, weighted by their shares in M4. Data for effective rates are only available to September.

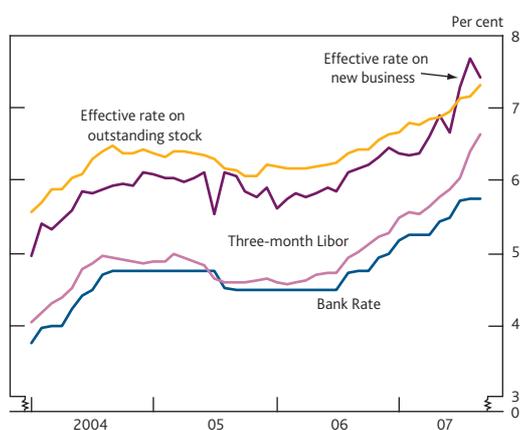
**Table 1.B** Monetary aggregates<sup>(a)</sup>

Flows, £ billions

	2007				
	Q1	Q2	July	Aug.	Sep.
M4	14.9	17.0	18.1	20.4	16.6
<i>of which:</i>					
Households	6.1	6.0	7.7	4.0	6.2
Private non-financial corporations	1.9	3.1	0.6	0.6	2.4
Other financial corporations	6.5	8.2	11.2	17.2	4.1
M4 lending <sup>(b)</sup>	25.1	24.5	30.5	34.3	29.5
<i>of which:</i>					
Households	8.4	8.4	9.5	7.6	8.7
Private non-financial corporations	5.8	5.4	7.8	6.2	2.3
Other financial corporations	10.9	10.7	13.2	20.5	18.6

(a) 2007 Q1 and Q2 data are averages of monthly flows. Sectoral flows may not sum to aggregate flows due to seasonal residuals.

(b) M4 lending data exclude the effects of securitisations and loan transfers.

**Chart 1.10** Private non-financial corporations' effective interest rates<sup>(a)</sup>

Sources: Bank of England and Bloomberg.

(a) Monthly averages. Effective interest rates are derived from data on interest rate flows and loan amounts. They measure average rates paid by all new or existing borrowers.

other financial corporations (OFCs) (Table 1.B) will have been swollen by the support provided by banks to their off balance sheet investment vehicles over the past three months. Such issues make the aggregate money and credit data difficult to interpret at the moment. The next section analyses how credit conditions facing corporates and households have changed since August, with reference to the sectoral lending data.

### 1.3 Changes in credit conditions

#### Corporate conditions

Banks have tightened lending conditions for companies since the *August Report*, though the impact of this will vary across businesses. Corporate bank lending rates are heavily influenced by interbank rates, such as three-month Libor. And, as around 60% of the stock of corporate lending is on variable rates, increases in three-month Libor usually feed through fairly quickly into the rates facing companies (Chart 1.10).

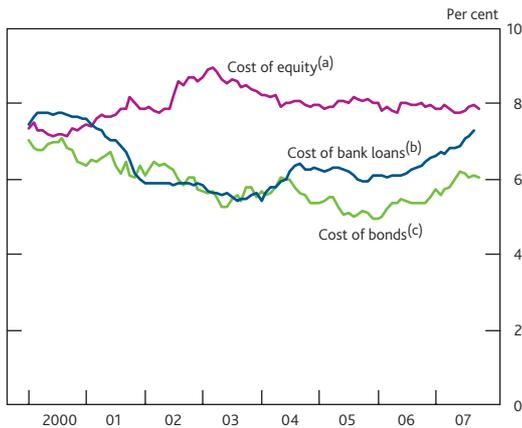
The most recent data show that the effective rate on the stock of corporate lending rose by around 35 basis points over the three months to September. And results from the Bank's Credit Conditions Survey, conducted between 20 August and 13 September, suggested that lenders expected to tighten non-price lending terms, such as collateral requirements and loan covenants significantly in the fourth quarter of the year. Subsequent discussions suggested that lenders had tightened conditions materially since the survey was taken, and expected conditions to tighten further over the remainder of 2007. In September, the measured flow of bank lending to PNFCs was weak (Table 1.B), such that annual growth eased in Q3.

Bank lending is not the only source of finance for companies. As the corporate sector has been running a financial surplus for several years, some companies will be able to insulate themselves from higher bank lending rates by funding more of their activities through retained earnings. And some businesses may choose to raise a larger proportion of their funds in the capital markets. Given the movements in equity and bond markets (Section 1.1), the cost of capital market finance for the corporate sector in aggregate has changed little since August (Chart 1.11).

Overall, the recent tightening in credit conditions is likely to affect some companies more than others. The outlook for business investment will depend on the share of investment accounted for by those companies who are most affected, as discussed in Section 2.

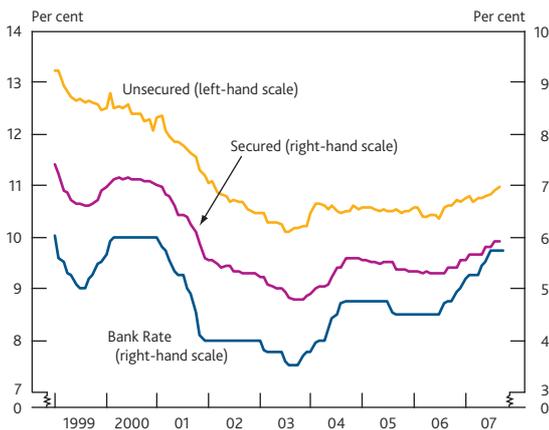
#### Household conditions

In aggregate, there has been a modest tightening in household lending conditions since the *August Report*. The effective rates on both secured and unsecured loans continued to rise gradually in the three months to September (Chart 1.12). Despite this, the effective rates on both secured and unsecured

**Chart 1.11 Corporate cost of finance**

Sources: Bank of England, Bloomberg and Merrill Lynch.

- (a) The cost of equity is estimated using equity prices of UK non-financial firms and by assuming that nominal dividends grow at 5% per annum.  
 (b) The cost of loans is based on the effective rate on outstanding lending to private non-financial corporations.  
 (c) The cost of bonds is based on yields to maturity on UK non-financial investment-grade corporate bonds.

**Chart 1.12 Household effective interest rates<sup>(a)</sup>**

- (a) Monthly averages. Effective interest rates are derived from data on interest rate flows and outstanding loan stocks. They measure average rates paid by all borrowers.

**Table 1.C Mortgage spreads<sup>(a)</sup>**

Basis points

	Average 2005–06	2007				
		July	Aug.	Sep.	Oct.	Nov.
Standard variable rate (SVR)	190	195	197	193	193	n.a.
Tracker	66	71	61	51	64	n.a.
Two-year fixed	6	-14	-15	-11	20	n.a.
Five-year fixed	31	19	7	16	58	n.a.
Light 'adverse credit' <sup>(b)</sup>	n.a.	-21	23	26	78	101
Extra heavy 'adverse credit' <sup>(c)</sup>	n.a.	43	69	73	193	221

Sources: Bank of England, Bloomberg and MoneyFacts.

- (a) SVR and Tracker spreads use previous month's average Bank Rate. Two-year and five-year fixed spreads use the previous month's equivalent maturity swap rate. Light and extra heavy 'adverse credit' spreads use three-year fixed mortgage rates over the previous three month's three-year swap rate.  
 (b) Loans to individuals with up to two County Court Judgements (CCJs) totalling a maximum of £3,000. Data collected on the first day of each month.  
 (c) Loans to individuals with unlimited CCJs over £10,000 in value. Data collected on the first day of each month.

loans have risen by only around 60 basis points since July 2006, just under half the increase in Bank Rate over the same period. In part, that reflects the prevalence of fixed-rate loans, which mean that effective rates tend to be slow to respond to changes in Bank Rate and in credit conditions more generally.

The results of the Q3 Credit Conditions Survey suggested that lenders expected overall household credit availability to remain largely unchanged in Q4. But since then, further discussions with lenders indicate that there has been some reduction in secured credit availability, and some increases in spreads on secured loans. That is consistent with the most recent retail rates data: although the price of fixed-rate mortgages has changed little since August, falls in swap rates (typically used to fund fixed-rate loans) mean that lenders' spreads increased (Table 1.C). There is also anecdotal evidence of increases in fees in recent months, in particular for some unsecured products.

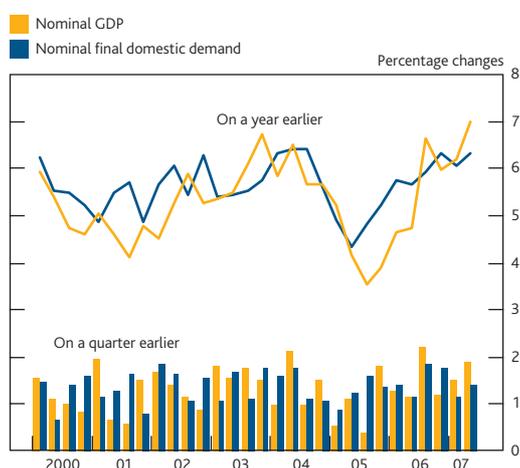
Conditions appear to have tightened most for households with adverse credit histories. Spreads on new loans to less creditworthy borrowers have risen markedly (Table 1.C). Anecdotal evidence suggests that some lenders have markedly reduced, or even suspended, new lending to those borrowers. However, the 'adverse credit' market<sup>(1)</sup> accounts for only 5%–6% of gross mortgage advances, so the impact on aggregate lending may be limited. Secured lending growth was little changed in September. And despite a small pickup over the past three months, annual unsecured lending growth remained well below the exceptionally high rates seen at the start of the decade. Section 2 discusses the potential impact of tightening household lending conditions for spending.

(1) Borrowers who have previously been in significant arrears on mortgage or unsecured debts, and/or have had County Court Judgements, Bankruptcy Orders or IVAs.

## 2 Demand

Real consumer spending appeared to have remained firm in the third quarter, despite past increases in Bank Rate and subdued income growth. Annual business investment growth declined during the first half of 2007, but investment intentions remained relatively buoyant. Recent financial market events are likely to bear down on demand growth, although it is too early to assess the full impact. The outlook for the advanced economies weakened, but the emerging economies continued to grow at a rapid pace.

**Chart 2.1** Nominal demand<sup>(a)</sup>



(a) At current market prices.

**Table 2.A** Expenditure components of demand<sup>(a)</sup>

Percentage changes on a quarter earlier

	Averages			2007	
	2004	2005	2006	Q1	Q2
Household consumption <sup>(b)</sup>	0.8	0.3	0.7	0.7	0.8
Government consumption	0.5	0.6	0.5	0.5	0.3
Investment	0.8	1.0	2.5	1.1	-0.9
<i>of which, business investment</i>	0.1	0.7	3.1	-0.5	0.4
<b>Final domestic demand</b>	<b>0.8</b>	<b>0.5</b>	<b>1.0</b>	<b>0.7</b>	<b>0.5</b>
Change in inventories <sup>(c)(d)</sup>	0.0	-0.1	-0.1	0.6	-0.4
Alignment adjustment <sup>(d)</sup>	0.0	-0.1	0.0	-0.2	0.6
<b>Domestic demand</b>	<b>0.8</b>	<b>0.2</b>	<b>0.9</b>	<b>1.0</b>	<b>0.6</b>
'Economic' exports <sup>(e)</sup>	1.4	2.0	0.6	0.5	0.3
'Economic' imports <sup>(e)</sup>	1.7	1.2	1.0	1.4	-0.3
Net trade <sup>(d)</sup>	-0.1	0.2	-0.1	-0.3	0.2
<b>Real GDP at market prices</b>	<b>0.6</b>	<b>0.5</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>

(a) Chained-volume measures.

(b) Includes non-profit institutions serving households.

(c) Excludes the alignment adjustment.

(d) Percentage point contributions to quarterly growth of real GDP.

(e) Goods and services, excluding the estimated impact of missing trader intra-community (MTIC) fraud.

In the *August Report*, the Committee projected GDP growth to slow as past increases in Bank Rate fed through to consumption and investment. But aggregate demand has so far remained robust. This section examines the reasons for that resilience. Since August, there has also been significant disruption in international financial markets, leading to a tightening of credit conditions. This section assesses the ways in which that disruption may affect demand, drawing on the framework outlined in the box on pages 14–15.

Movements in Bank Rate and developments in financial markets feed through to inflation mainly via their impact on nominal demand. Four-quarter nominal GDP growth rose to 7% in 2007 Q2, though the growth of nominal final domestic demand — which excludes net trade and changes in inventories — was less rapid (**Chart 2.1**). Trends in nominal demand reflect developments in both prices and real activity. Prices are discussed in Section 4; the rest of this section examines developments in real demand.

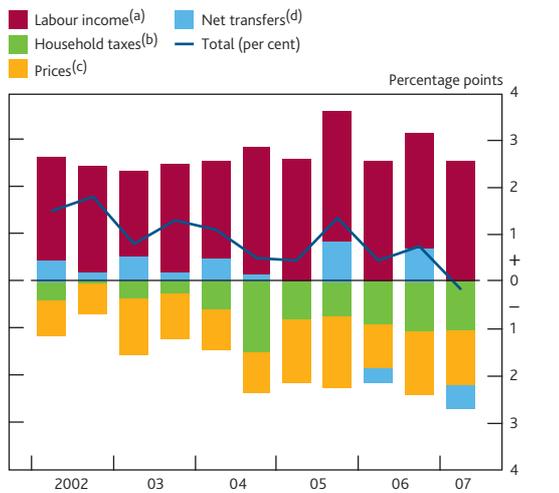
The latest official estimates suggest that real GDP increased by 0.8% in both 2007 Q2 (**Table 2.A**) and Q3, a little above its ten-year average. Economic activity has been supported in particular by the continued growth in consumer spending.

### 2.1 Household consumption

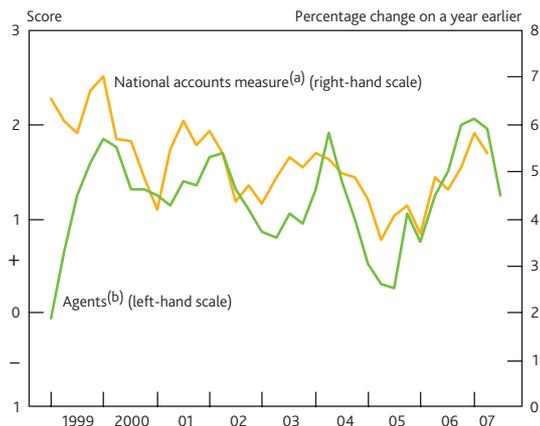
#### Recent trends

Consumer spending growth has been firm over the past year. Household consumption grew by 0.8% in Q2. And the volume of retail sales — an important constituent of consumer spending — grew by 1.7% in the third quarter, well above its ten-year average. Consumer spending has maintained momentum despite the increases in Bank Rate since August 2006 and subdued income growth (**Chart 2.2**).

In principle, household consumption decisions should be based on the current value of expected lifetime income. So one

**Chart 2.2** Half-yearly growth in real post-tax labour income

(a) Wages and salaries plus mixed income.  
 (b) Taxes include income and Council Tax.  
 (c) Consumption expenditure deflator (including non-profit institutions serving households).  
 (d) General government benefits minus employees' National Insurance contributions.

**Chart 2.3** Nominal consumer spending

(a) At current market prices. Includes non-profit institutions serving households.  
 (b) Weighted average of Agents' scores for retail sales values and consumer services turnover, using the respective shares of goods and services in nominal consumption.

**Table 2.B** Forward-looking consumer confidence indicators

Net balances	Averages <sup>(a)</sup>	2006		2007		
	1993–2005	H1	H2	H1	Q3	October
<b>General economic outlook</b>						
GfK NOP <sup>(b)</sup>	-7	-17	-19	-17	-16	-17
MORI <sup>(b)</sup>	-14	-28	-32	-28	-27	-35
Nationwide <sup>(c)</sup>	-12	-13	-15	-17	-14	-17
<b>Personal situation</b>						
GfK NOP <sup>(b)</sup>	6	11	11	11	12	13
MORI <sup>(b)(d)</sup>	15	5	3	3	5	4
Nationwide <sup>(c)(e)</sup>	19	17	15	18	17	18

Sources: MORI, Nationwide and research carried out by GfK NOP on behalf of the European Commission.

(a) Due to data availability, the average for Nationwide is between May 2004 and December 2005.  
 (b) Over the next twelve months.  
 (c) Over the next six months. Non seasonally adjusted.  
 (d) Personal economic optimism.  
 (e) Household income expectations.

potential explanation for the resilience of consumption in the face of weak income growth is that households have been content to fund spending by running down savings or increasing borrowing in the expectation that income growth will recover in the future. As Section 5 discusses, some of the downward influences on income in the recent past, such as a rising effective tax rate and the impact of the steep rise in energy prices in 2004–06 on real take-home pay, are likely to diminish over the forecast period. In addition, spending is also likely to have been underpinned by past increases in real household wealth.

An alternative explanation for the resilience of consumer spending is that consumer behaviour may have been somewhat less affected by the recent increases in Bank Rate than in past periods of rising rates. That may partly reflect the delayed pass-through to retail interest rates discussed in Section 1.3. And consumers may also have expected part of the latest increases in interest rates to be short-lived, moderating the impact on spending.

Real consumer spending may also have been supported by a greater use of price discounting in the most recent period. Official data on retail sales values have grown less strongly than volumes in recent months. And the Bank of England's Agents' scores for the value of consumer spending have fallen back (Chart 2.3). However, reports from the Agents suggested that the scale of price discounting was expected to reduce in the coming months.

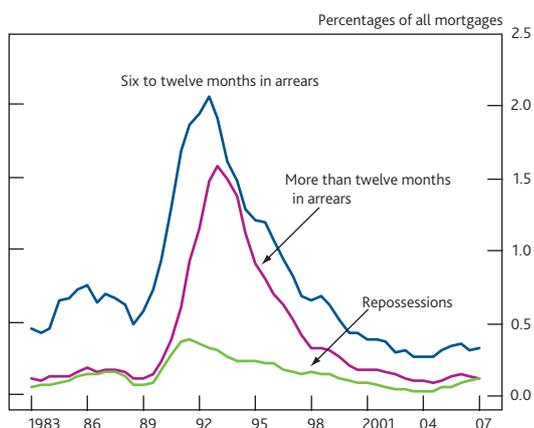
### Near-term outlook

The financial market turbulence is likely to bear down on consumer spending growth. As discussed in Section 1, lenders have raised loan rates or reduced the availability of new lending for certain groups of borrowers. That will restrict their ability to smooth spending through any temporary weakness in income.

Recent developments in financial markets may also cause households more generally to reassess their income prospects. And increased uncertainty about those prospects may lead them to increase their precautionary saving so as to be better able to respond to fluctuations in income. While it is difficult to measure household income expectations accurately, one approach is to look at surveys of consumer confidence. So far, there has been little change in households' expectations of their own personal situation (Table 2.B).

Another channel through which financial market turbulence could affect consumer spending is asset prices, and hence household wealth. Despite the disruption in credit markets, UK equity prices have risen over the past three months. However, there have been signs of a softening in house prices (Section 1.1). As discussed in previous Reports, the link between the housing market and consumption is more

**Chart 2.4 Mortgage arrears and repossessions**



Source: Council of Mortgage Lenders.

complex than for other assets and is likely to vary over time. Both consumption and house prices are subject to common influences, such as expectations of future income. But there are also channels through which house prices can affect consumer spending directly. For example, higher house prices will tend to increase households' collateral, making it easier and cheaper to access credit. Given the substantial increases in house prices, many households have built a significant cushion of housing equity that they can continue to use as collateral for additional borrowing. Consequently, aggregate consumer spending may not be particularly sensitive to modest falls in house prices.

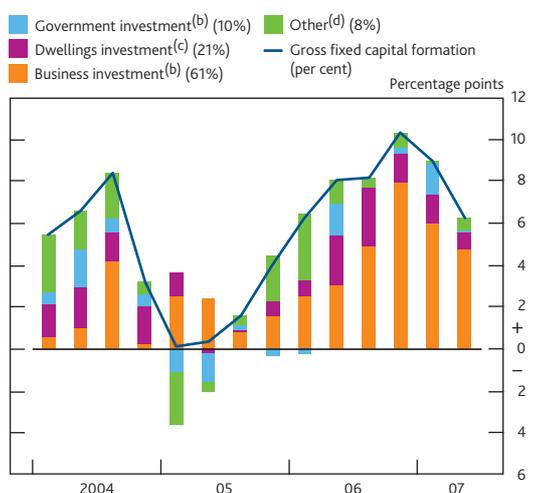
The financial situation of certain groups of households makes them more vulnerable to tighter credit conditions. Though data on aggregate arrears and repossessions remain below their levels in the early 1990s (Chart 2.4), a minority of households nevertheless face high debt repayments relative to income (see the box on page 21). These households may be particularly sensitive to future changes in incomes or the value of their houses.

Section 5 provides an assessment of the risks posed by financial market developments to activity and inflation in the medium term.

## 2.2 Investment

Annual business investment growth declined during the first half of 2007 (Chart 2.5). But these data are uncertain and subject to potentially significant revisions. In the past, low initial estimates have tended to be revised upwards, so the recent weakness may be revised away in the future.

**Chart 2.5 Annual growth in gross fixed capital formation<sup>(a)</sup>**



(a) Chained-volume measures. The figures in parentheses show shares in the level of total gross fixed capital formation in 2006.  
 (b) Adjusted for the transfer of nuclear reactors from the public corporation sector to central government in 2005 Q2.  
 (c) Includes new dwellings and improvements to dwellings by both the private sector and public corporations.  
 (d) Includes costs associated with the transfer of ownership of buildings, dwellings and non-produced assets.

Recent developments in financial markets may influence companies' investment plans by raising the cost of borrowing. But different companies are likely to be affected in different ways. As discussed in the box on page 22, smaller companies tend to rely more on bank lending and so are more likely to be affected by a tightening in credit conditions. In contrast, larger companies — which account for the bulk of corporate investment — are likely to have easier access to alternative sources of finance.

Information from the Bank's regional Agents and business survey data are particularly useful in judging the impact of tighter credit conditions on the investment outlook. According to the October quarterly *CBI Industrial Trends Survey*, companies reported that a lack of external finance was no more likely to constrain investment than at the time of the previous survey. And according to information received by the Bank's Agents, the majority of their contacts had secured long-term finance prior to the recent bout of turbulence or had committed, but as yet undrawn, credit lines, while others had hedged their interest rate exposure. Overall, while some of

## The distribution of debt and repayment difficulties

Household sector debt has increased rapidly in recent years. Despite this, there have been few signs yet of a substantial increase in household financial distress at the aggregate level. As aggregate data can mask variation between households, this box examines the distribution of debt and repayment difficulties across households, using the latest in a series of annual surveys carried out for the Bank by NMG Research. The survey was carried out between 21 and 27 September, after the recent financial market turbulence had begun.

### The distribution of household debt

Unsecured debt accounts for around a fifth of UK households' total debt. However, for individuals — and especially non-homeowners — large holdings of unsecured debt can be a sign of financial fragility. The 2007 NMG survey showed that around half of those households surveyed had some unsecured debts. Of those with unsecured debts, around a tenth of renters and a fifth of mortgagors held unsecured debts of more than £10,000 — up a little on the previous survey (Table 1).

**Table 1** Distribution of unsecured debt<sup>(a)</sup>

		Amount owed (£)				
		Up to 999	1,000–4,999	5,000–9,999	10,000–19,999	20,000–100,000
Renters	2005	39	28	20	9	5
	2006	38	37	17	5	3
	2007	45	32	11	9	4
Mortgagors	2005	28	35	18	10	8
	2006	25	36	21	9	8
	2007	22	33	23	14	8

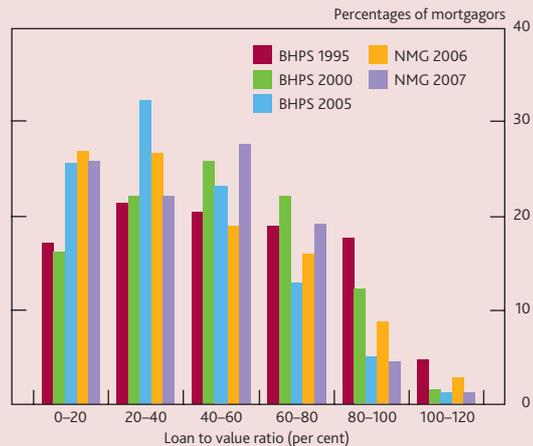
Sources: NMG Research and Bank calculations.

(a) Rows may not sum to 100 due to rounding.

Around 80% of household debt is secured on property. In the 2007 survey, around two fifths of mortgagors reported secured debts of over £90,000, up from one fifth in 2004. In part that will be because rising house prices mean that those taking out new mortgages will tend to take on more debt than previous entrants to the housing market.

Despite the increase in the proportion of households with large secured debts, the proportion of homeowners with very large mortgages relative to the value of their property has fallen (Chart A). This is likely to be because higher house prices increase the value of housing equity held by existing homeowners. The survey suggested that many households have a sizable cushion of equity to draw on if they have a negative shock to their incomes. However, if house prices fell materially that would push more homeowners into the upper end of the distribution.

**Chart A** Distribution of loan to value ratios

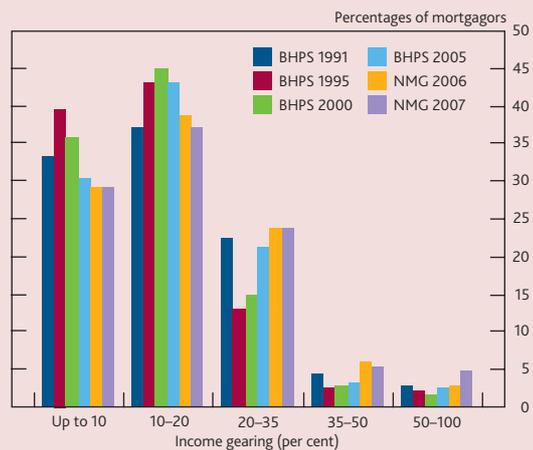


Sources: British Household Panel Survey, NMG Research and Bank calculations.

### Households' repayment difficulties

If households have difficulties servicing their debt, they may cut back spending on other goods and services. Of those with unsecured debts, 12% said they found them a heavy burden — up slightly from the 2006 survey. Those reporting that debts were a heavy burden were more likely to be renters than homeowners, as in previous surveys. There was little change in the proportion of mortgagors reporting problems paying for their accommodation. However, 34% of mortgagors reported that they devote more than a fifth of their pre-tax income to mortgage payments (Chart B). This proportion has risen substantially since the beginning of this decade.

**Chart B** Distribution of mortgage income gearing



Sources: British Household Panel Survey, NMG Research and Bank calculations.

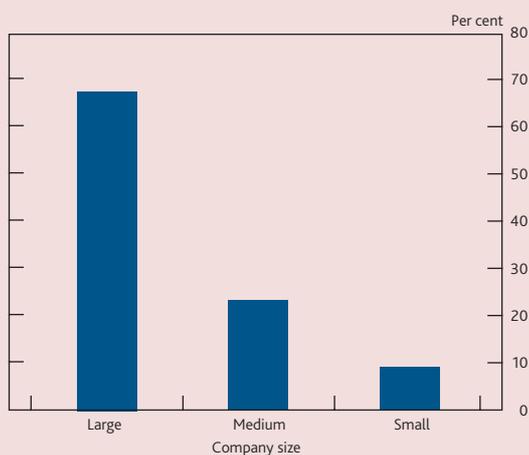
Overall, there has been a rise in the proportion of households with high debts since the beginning of this decade. But so far, relatively few households report difficulties servicing those debts. Some households may nevertheless be particularly sensitive to future changes in income or the value of their houses.

## Tighter credit conditions and business investment

The recent tightening in credit conditions will affect different companies in different ways. The cost of new bank borrowing has increased. But UK equity prices have risen over the past three months and sterling investment-grade corporate bond yields are little changed. The impact on an individual company's investment plans is therefore likely to depend upon the extent to which they rely on bank borrowing.

According to company accounts data, the largest companies account for around two thirds of corporate investment in the United Kingdom (Chart A). If recent developments inhibit the ability of these companies to raise finance, then there may be a significant impact on aggregate investment.

Chart A Shares of total corporate investment<sup>(a)</sup>



Sources: Bankscope published by Bureau van Dijk and Bank calculations.

(a) Based on 2005 company accounts data for non-financial companies with at least ten employees. Company size consistent with the 2006 Companies Act: large companies have turnover greater than £22.8 million while medium companies have turnover above £5.6 million.

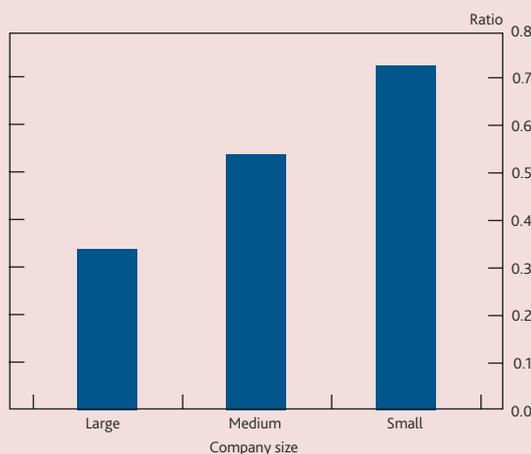
The UK corporate sector as a whole has increased its bank borrowing markedly in recent years (Section 1). However, larger companies are likely to have easier access to alternative sources of finance. They should be better placed than smaller companies to switch from bank finance into equity or bond finance. Larger companies may also be better able to fund investment from retained earnings. In aggregate, the corporate sector has been running a financial surplus for several years. And, for larger companies, retained earnings tend to be slightly higher relative to turnover than for smaller companies.

A subgroup of larger companies — such as those with high levels of gearing — may find it harder to access the capital markets and face a greater tightening in banks' lending conditions. According to reports from the Bank's regional Agents, conditions have tightened more for highly leveraged companies and for those seeking syndicated finance. However,

some of this may have reflected tighter conditions for merger and acquisition activity (such as leveraged buyouts) rather than for fixed investments. The tightening in credit conditions is also likely to differ across sectors. Respondents to the Bank's 2007 Q3 Credit Conditions Survey expected a further deterioration in the availability of credit provided to the commercial real estate sector.

Although larger companies account for much of aggregate investment, small companies still account for almost 10%. While some small companies might be able to access the capital markets, that is likely to be on less favourable terms, in part reflecting their higher average gearing levels (Chart B). Indeed, according to a report prepared by the Institute for Employment Studies, over half of small companies seeking finance in 2005 said they had sought a bank loan, while a quarter had sought a bank overdraft. In contrast, only 6% had considered equity finance.

Chart B Debt to asset ratios<sup>(a)</sup>

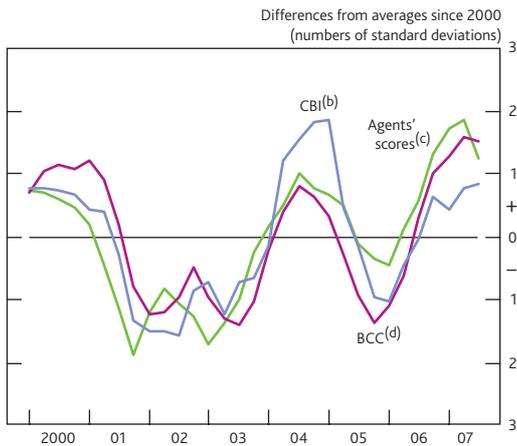


Sources: Bankscope published by Bureau van Dijk and Bank calculations.

(a) See footnote to Chart A.

It is therefore likely that smaller companies will be more affected by recent financial market events due to their reliance on bank borrowing. In addition, smaller companies also rely more on variable-rate borrowing. According to the British Bankers' Association, around 90% of term lending to smaller companies was at floating rates, above the figure for the corporate sector as a whole. For those smaller companies whose borrowing is linked to interbank rates, the recent increase in these rates will squeeze their retained earnings, further limiting their ability to finance new investment.

The implications for aggregate investment of tightening bank lending conditions depend on the interaction between the effect on individual companies' investment plans and their share of aggregate investment. The MPC will therefore continue to draw on information from the Bank's Agents and disaggregated survey data when judging the implications of tighter credit conditions for aggregate investment.

Chart 2.6 Investment intentions<sup>(a)</sup>

Sources: Bank of England, BCC, CBI, CBI/Grant Thornton, CBI/PwC and ONS.

- (a) Measures weight together sectoral surveys using shares in real business investment. Disaggregated data on financial services investment are provided by the ONS but are not subject to the scrutiny applied to officially released National Statistics.
- (b) Net percentage balances of companies who plan to increase investment in plant and machinery over the next twelve months. Four-quarter moving average.
- (c) Companies' intended changes in investment over the next twelve months.
- (d) Net percentage balances of companies who say they have revised up their planned investment in plant and machinery over the past three months. Non seasonally adjusted. Four-quarter moving average.

their contacts reported tighter credit conditions were affecting their operations, the majority noted few direct effects so far. Indeed, survey data on investment intentions point to relatively healthy growth over the next year (Chart 2.6).

Investment plans may also change if recent financial market events weaken the demand outlook. If companies revise down their expectations for demand growth, then they are likely to pare back investment. And increased uncertainty may lead companies to postpone investment until they are more certain about economic prospects. Indeed, the Bank's regional Agents have reported greater concerns among companies about the impact of tighter credit conditions on demand than on the cost of capital.

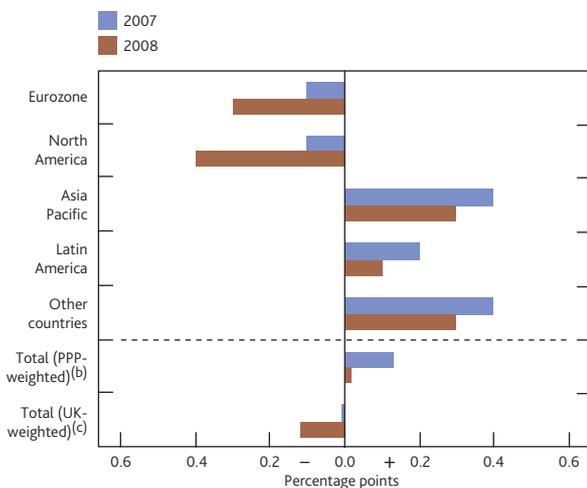
Property investment is an important component of gross fixed capital formation. Around one third of business investment spending is on buildings, and this has been supported in recent years by strong growth in commercial property prices. And dwellings investment — which accounts for a fifth of gross fixed capital formation in the United Kingdom — tends to be influenced by developments in the residential housing market. As discussed in Section 1, commercial property price inflation has fallen back since mid-2006 and there are signs of a slowdown in the residential housing market. These developments are likely to bear down on investment growth.

## 2.3 Government spending

In 2007 Q2, annual growth in nominal government consumption and investment rose to 6.2% and 11.6% respectively. On 9 October, the Government released its latest *Pre-Budget Report and Comprehensive Spending Review*. While the effect on the public finances of the financial market disruption is uncertain, forecasts for tax receipts were revised down slightly. Spending plans for both government consumption and investment over the next three years were little changed relative to the 2007 Budget. The Committee has updated its projections to reflect the latest announcements.

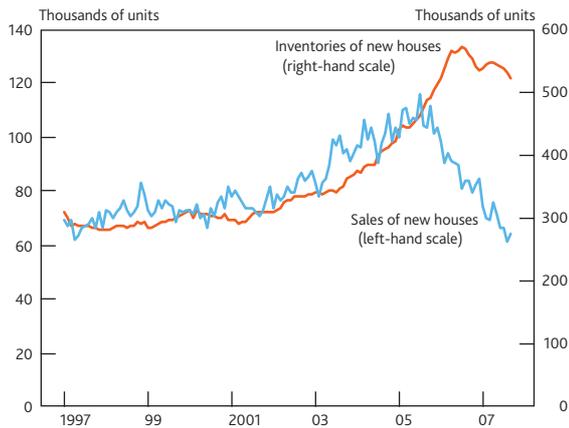
## 2.4 External demand and net trade

The composition of world growth appears to be shifting away from the advanced economies towards the emerging economies (Chart 2.7). Since the *August Report*, tighter credit conditions have led to a weaker outlook in many advanced economies, particularly the United States. However, demand in non-Japan Asia has continued to expand rapidly while rising oil prices have supported growth in the Middle East. Two important issues for the global economic outlook are the magnitude of the US slowdown and its implications for the rest of the world.

Chart 2.7 Revisions to Consensus forecasts for world growth between July and October 2007<sup>(a)</sup>

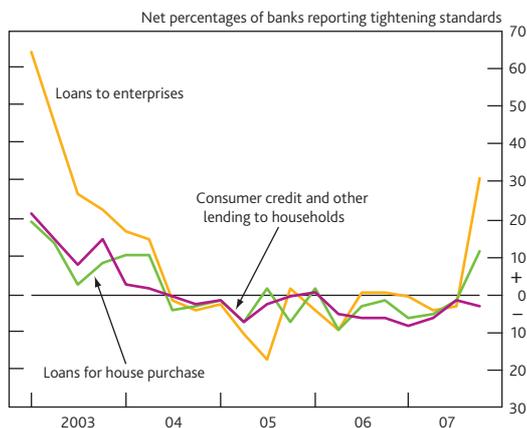
Sources: Consensus Economics, IMF, ONS and Bank calculations. For further information on the forecasts, see [www.consensuseconomics.co.uk](http://www.consensuseconomics.co.uk).

- (a) Groupings are based on those published by Consensus Economics.
- (b) Weighted using purchasing power parity exchange rates in 2004.
- (c) Weighted by nominal shares of UK exports in 2006.

**Chart 2.8 US housing market activity<sup>(a)</sup>**

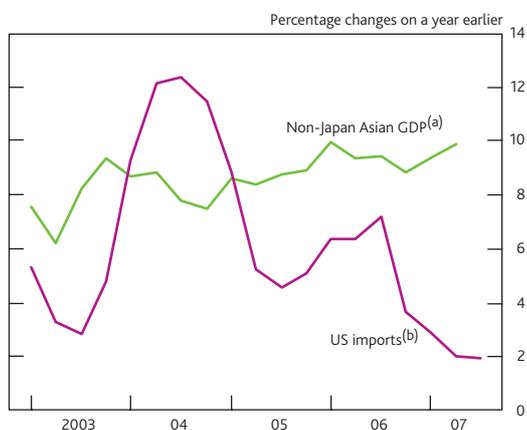
Source: US Census Bureau.

(a) New one-family houses.

**Chart 2.9 Euro-area bank credit standards<sup>(a)</sup>**

Source: ECB.

(a) Survey of around 90 banks in the euro area. Survey results are weighted according to national shares in the total amount outstanding of euro-area lending to euro-area residents. The most recent survey took place during September, with a data cut-off of 27 September. Data are non seasonally adjusted.

**Chart 2.10 US imports and GDP in non-Japan Asia**

Sources: Bureau of Economic Analysis, IMF, Thomson Datastream and Bank calculations.

(a) Weighted volume measure for China, Hong Kong, India, Malaysia, Philippines, Singapore, South Korea, Taiwan and Thailand using purchasing power parity exchange rates in 2004.  
(b) Chained-volume measure.

## The United States

US GDP grew by 1% in 2007 Q3, above its 20-year average. But the prospects for growth have weakened. According to the October *Senior Loan Officer Opinion Survey*, lending standards have tightened for both households and companies. And conditions in the housing market have deteriorated: sales of new houses have fallen to around their lowest levels since the mid-1990s and housing inventories are close to record levels (**Chart 2.8**). Consequently, the outlook for residential investment — which accounts for nearly 5% of US GDP — has worsened since the *August Report*.

The weakness in the housing market contrasts with the continued resilience of US consumer and non-residential investment spending. Personal consumption grew by 0.7% in Q3 and non-residential investment grew by 1.9%. Consumer spending has been supported by employment growth, which, despite slowing a little over the past year, has remained firm.

## The euro area

Euro-area growth prospects have also moderated since the *August Report*. The euro-area recovery faltered in the second quarter, with GDP growing by 0.3%. But that appears to have partly reflected erratic factors. Business surveys were robust in the early part of Q3 but subsequently fell back in the autumn, probably reflecting the impact of tightening credit conditions for both companies and households (**Chart 2.9**).

## Asia

Japanese GDP fell by 0.3% in 2007 Q2 and recent indicators suggest growth is likely to remain sluggish for the rest of the year. But, so far, growth in non-Japan Asia appears to have been relatively insulated from the weakening outlook in advanced economies. That reflects the strength of exports to the euro area, growing trade within the region, and strong domestic demand. It is possible that some of that domestic demand may be sensitive to overseas developments, for example investment in export-intensive industries. However, the region has already weathered a sharp slowdown in US import growth (**Chart 2.10**).

## Net trade

Net trade made a positive contribution to UK GDP growth in 2007 Q2. Trade flows have been distorted in recent years by the impact of missing trader intra-community (MTIC) fraud. Estimated MTIC fraud has fallen back recently but there remains considerable uncertainty about whether fraud is fully accounted for in official data. Survey indicators have continued to point to strong goods export growth over the past year (**Table 2.C**). That contrasts with official data, which suggested a sharp slowing in the first half of the year.

Changes in the pattern of world growth may weigh on the demand for UK exports, as around two thirds of the United Kingdom's exports go to the euro area and the

**Table 2.C** Goods exports

	Averages		2007		
	1998–2005	2006	Q1	Q2	Q3
Annual growth in 'economic' goods exports <sup>(a)</sup>	2.8	8.7	-4.1	-8.2	n.a.
Agents' scores <sup>(b)</sup>	0.3	2.6	2.7	2.9	2.9
BCC net balance <sup>(c)</sup>	3	24	21	30	29
CBI net balance <sup>(c)</sup>	-15	4	0	-3	7

Sources: Bank of England, BCC, CBI and ONS.

- (a) Excludes the estimated impact of missing trader intra-community (MTIC) fraud.  
 (b) Manufacturing companies' reported annual growth in production for sales to overseas customers over the past three months. End-quarter observations.  
 (c) Net percentage balance of manufacturing companies saying that export sales/deliveries increased on the quarter.

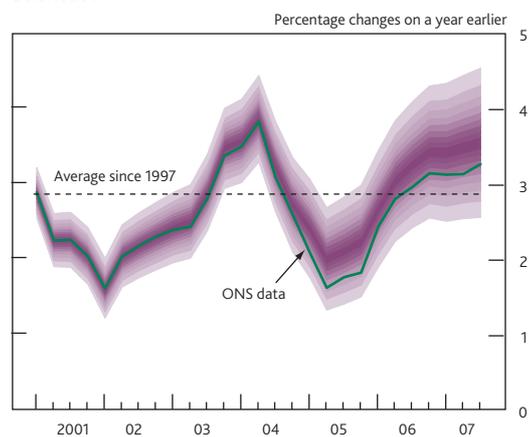
United States. Indeed, forecasts for UK-weighted world growth have been revised down relative to forecasts for aggregate world growth (**Chart 2.7**). But the fall in the sterling ERI since the *August Report* should help to support UK export growth (Section 1).

## 3 Output and supply

Output continued to grow briskly in 2007 Q3, but surveys suggested that growth may have slowed in the fourth quarter. The margin of spare capacity within companies remained limited, but capacity pressures showed tentative signs of easing in Q3. Official data suggested that companies had not responded to past pressures on capacity by materially increasing their hiring. The unemployment rate was 5.4% in the three months to August.

A central influence on inflationary pressures is the balance between demand and potential supply. With output growth having been relatively robust in the recent past, the August *Report* highlighted the limited margin of spare capacity within businesses as a key risk to the outlook for inflation. Sections 3.1 and 3.2 assess developments in output and capacity pressures, while the box on page 28 considers the potential direct impact on output of recent financial market turbulence. Given past pressures on capacity, employment growth might have been expected to be stronger in late 2006 and early 2007. Section 3.3 updates analysis presented in the August *Report* which suggested that supply-side factors may have restrained employment growth.

**Chart 3.1** GDP at market prices: official data and backcast<sup>(a)</sup>



Sources: ONS and Bank calculations.

(a) Chained-volume measures. The fan chart depicts an estimated probability distribution for GDP growth over the past. It can be interpreted in the same way as the fan charts in Section 5 and forms the first part of the MPC's GDP fan chart shown in Chart 5.1 on page 38. A description of the model used to calculate the fan chart is provided in the Annex to Cunningham and Jeffery (2007). The backcast is informed by business surveys and the past pattern of revisions to ONS data in all previous periods. The post-1997 average shown in the chart is calculated using the latest ONS data.

### 3.1 Output

Output continued to grow briskly in 2007 Q3. GDP is provisionally estimated by the ONS to have expanded by 0.8% on the quarter, and the sectoral breakdown suggests that market sector output — the output of sectors for which there is a market-determined price — grew at a slightly faster rate.

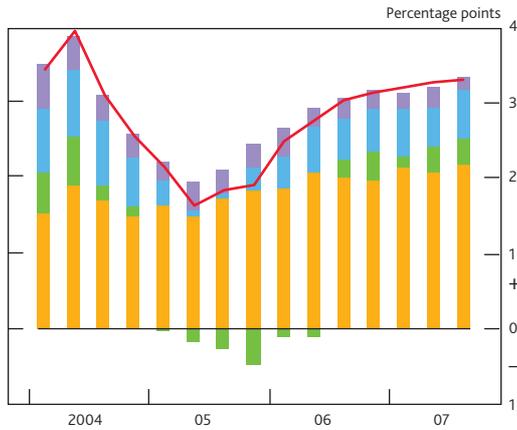
When judging the pace of output growth in the past, the MPC places weight both on current ONS estimates and on evidence from other sources, such as the past pattern of revisions and business surveys. A box in the August *Report* discussed uncertainty around recent estimates of GDP growth,<sup>(1)</sup> and a subsequent *Quarterly Bulletin* article outlined further developments in the Bank's methods for dealing with data uncertainty.<sup>(2)</sup> Chart 3.1 applies that new methodology and incorporates the latest ONS and survey data to derive a 'backcast' for GDP growth. The Committee's best collective judgement of the most likely path for GDP growth is given by the centre of the darkest band of the fan chart. The degree of uncertainty around this path is considerable, as indicated by

(1) See pages 24–25 of the August 2007 *Inflation Report*.

(2) Cunningham, A and Jeffery, C (2007), 'Extracting a better signal from uncertain data', *Bank of England Quarterly Bulletin*, Vol. 47, No. 3, pages 364–75.

**Chart 3.2 Contributions to annual GDP growth<sup>(a)</sup>**

■ Government services (18%)<sup>(b)</sup>
■ Non-services sector (26%)  
■ Distribution, hotels and catering (15%)
 ■ Private non-distribution services (41%)  
— GDP (per cent)



(a) Chained-volume measures. Figures in parentheses are shares in GDP in 2003. The bars in the chart do not sum precisely to total GDP growth because of rounding errors. The 2007 Q3 bars are based on the preliminary GDP release.

(b) Health, education, and public administration and defence sectors.

the fan around the central case. But upward revisions to growth in the recent past are nevertheless judged to be more likely than downward revisions. A box on page 39 provides more details on how to interpret this fan chart.

The composition of GDP growth can provide useful information about past and future trends. The private non-distribution services sector has been growing robustly for some time — on average, it has accounted for around two thirds of annual GDP growth since 2004 (Chart 3.2). In turn, that largely reflects strong growth in business services and finance.

The box on page 28 discusses the potential impact of the recent financial market turbulence on the output of the financial sector. The direct impact on overall GDP growth from a slowdown in the financial sector is likely to be relatively muted. But indirect effects from spillovers to closely related sectors could amplify any first-round impact. There is little hard evidence on spillovers as yet. However, the Bank's regional Agents have been reporting reduced activity by financial service providers and commercial property developers and, in turn, reduced demand for accountants and corporate lawyers. If activity slows in these sectors, then that could pull down on GDP growth: the ONS estimates that both legal services and commercial property construction have grown at above-average rates over recent quarters.

Past increases in Bank Rate should put downward pressure on demand and therefore output growth. That effect could be compounded by a tightening in credit conditions facing households or companies (Section 1). There were few signs of a slowing in output growth in the data up to Q3, though industrial production fell in September. But forward-looking survey balances taken in the late summer and early autumn suggested a modest slowing in Q4 (Table 3.A). And the October CIPS/NTC output and new orders indices for both the manufacturing and service sectors turned down sharply. The prospects for GDP growth are discussed in Section 5.

**Table 3.A Indicators of near-term output growth<sup>(a)</sup>**

	Averages since 1997	2007			
		Q1	Q2	Q3	Oct.
<b>Manufacturing</b>					
BCC orders <sup>(b)</sup>	9	23	29	26	n.a.
CBI expected output <sup>(c)</sup>	5	18	10	10	n.a.
CIPS/NTC orders <sup>(d)</sup>	52.4	56.2	55.7	56.4	53.6
<b>Services</b>					
BCC orders <sup>(b)</sup>	21	28	24	23	n.a.
CBI/Grant Thornton consumer and business services expected volume of business <sup>(c)</sup>	18	31	24	21	n.a.
CBI/PwC financial services expected volume of business <sup>(c)</sup>	20	33	3	-11	n.a.
CBI Distributive Trades expected sales <sup>(e)</sup>	13	19	24	20	25
CIPS/NTC new business <sup>(d)</sup>	55.9	57.1	58.1	57.7	54.2

Sources: BCC, CBI, CBI/Grant Thornton, CBI/PwC and CIPS/NTC.

(a) Dates refer to the period in which the survey was conducted. Expected output balances used when available, otherwise reported orders balances are used as a proxy for future output.

(b) Percentage balances of respondents reporting domestic orders to be 'up' relative to 'down' over the past three months.

(c) Percentage balances of respondents expecting volume of output/business to be 'up' relative to 'down' over the next three months. The CBI/Grant Thornton survey average is since 1998 Q4.

(d) A reading above 50 indicates increasing orders/new business this month relative to the situation one month ago. Quarterly data are averages of monthly indices.

(e) Expected sales over next month compared with same period a year ago. Quarterly data are averages of monthly balances.

### 3.2 Capacity pressures within companies

In response to an increase in the demand for their products, companies initially usually adjust the intensity with which they work their existing employees and capital. That is because it takes time and resources to hire and train new employees and to invest in new equipment. The intensity with which companies are working their capital and labour is captured by measures of capacity utilisation. Rising capacity utilisation is often accompanied by increased costs and a greater tendency to raise prices. In the *August Report*, the MPC noted that relatively tight capacity pressures represented an upside risk to the inflation outlook.

## Financial sector output and UK GDP

The financial sector plays an important role in the UK economy. In 2006, it employed 4% of the workforce, and accounted for 14% of corporate profits. But estimating how much the financial sector contributes to overall GDP growth is not straightforward. This box assesses how a slowdown in financial services might impact on measured GDP growth.

### Trends in fee-generating activity

Around half of financial sector output is fee-generating activity: intermediation activities earning fees or commissions; auxiliary activities such as trading in stock markets; and the insurance and pension fund sector. ONS experimental data suggest that both auxiliary activities and fees and commissions grew at above-average rates in 2007 H1 (Table 1).

**Table 1** Financial sector output

	Weights in GDP (per cent)	Growth rates <sup>(a)</sup>			Memo: Contribution to GDP growth 2007 H1 <sup>(e)</sup>
		Averages		2007 H1	
		1997–2005	2006		
Lending and deposits <sup>(b)(c)</sup>	3.8	8.2	12.8	18.6	0.9
Adjustment for financial services <sup>(d)</sup>	-4.6	8.6	14.1	22.1	-1.3
Insurance and pension funds <sup>(b)</sup>	1.7	-1.4	0.4	0.2	0.0
Fees and commissions <sup>(b)(e)</sup>	1.4	7.8	4.9	19.2	0.3
Auxiliary activities <sup>(b)</sup>	1.1	3.2	8.0	22.7	0.2
<b>Total<sup>(d)</sup></b>	<b>3.3</b>	<b>1.5</b>	<b>1.4</b>	<b>1.2</b>	<b>0.0</b>
Memo: GDP <sup>(d)</sup>	n.a.	2.8	3.1	3.3	n.a.

(a) Average annualised quarterly measures.

(b) These data have been provided by the ONS and are not subject to the scrutiny applied to officially released National Statistics. Although these data are taken from the Index of Services data set, they may not be fully consistent with the latest aggregate series.

(c) Lending and deposits weights together bank and building societies' indirectly measured output, financial leasing, other credit granting and other financial intermediation not elsewhere classified using 2003 weights.

(d) These data are taken from the latest *Quarterly National Accounts* release.

(e) Fees and commissions is the ONS sector banks and building societies' directly measured output.

Recent financial market turbulence may reduce growth in these activities: respondents to the September 2007 *CBI/PwC Financial Services Survey* expected their fees and commissions income to decline over the following three months (Table 2). The optimism balance also fell below its long-run average.

**Table 2** Financial services sector: survey balances

	Averages since 1997	1998			2007	
		Q2	Q3	Q4	Q2	Q3
Optimism <sup>(a)</sup>	5	-1	-54	-27	12	-31
Fees and commissions income <sup>(b)</sup>	15	21	-4	2	-14	-13

Source: CBI/PwC.

(a) Net percentage balance of companies who are more optimistic about the overall business situation.

(b) Net percentage balance of companies expecting income to increase over the next three months.

Past experience may provide some guide to the possible impact of the recent market disruptions. Following the collapse of the LTCM hedge fund in 1998, for example, there were sharp falls in the survey balances (Table 2). That was subsequently reflected in the official data: output of auxiliary activities was subdued over the following four quarters and

fees and commissions fell sharply in 1998 Q4. But the impact on GDP was modest: together, these two sectors subtracted a total of 0.1 percentage points from annual GDP growth between 1998 Q3 and 1999 Q3.

### Measuring non fee based activity

The remainder of financial sector output is accounted for by 'core' banking activities — largely lending and deposit taking. Banks do not typically charge fees for these activities but can instead earn income by charging borrowers a higher interest rate than they pay depositors. It is not straightforward for the ONS to assess the value added implicit in these activities and hence estimate their contribution to GDP.

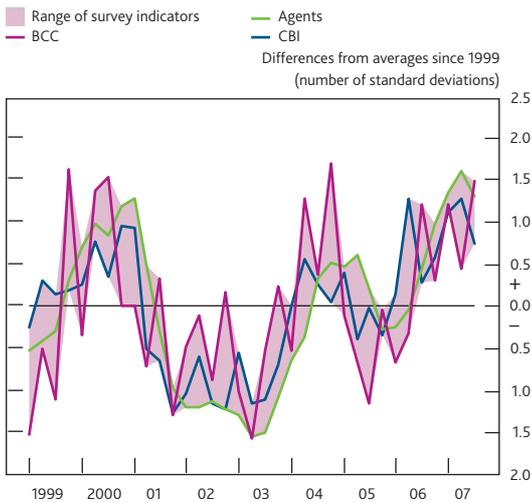
The profits earned from deposit and lending activities can be thought of as a return to financial companies for risk-taking and for providing transaction services, and should therefore contribute to financial sector value added. But the ONS currently assumes that the provision of lending and deposit facilities represents an input to other companies' production, and therefore does not count these services as value added for the economy as a whole. So when calculating GDP growth, the ONS offsets deposit taking and lending with the negatively weighted 'adjustment for financial services'. This statistical treatment is due to change in the 2008 *Blue Book*. In particular, the volume of financial services provided to households<sup>(1)</sup> and overseas residents will count towards UK value added, though services provided to companies will not.

The ONS uses data on loans and deposits to help it gauge how fast financial sector value added is growing. So following the methodological changes, past rapid growth in lending and deposits may boost measured GDP growth. In a recent article, the ONS provided estimates of the possible impact of these changes between 1993 and 2004.<sup>(2)</sup> The impact varied over time and was relatively small in most periods, but was estimated to have boosted four-quarter GDP growth by 0.4 percentage points in 2004 Q4. Looking ahead, recent market events could reduce growth in bank lending (Section 1). Under the current methodology, this would not affect GDP growth directly. But following the 2008 *Blue Book* changes, future vintages of ONS data could show a turnaround in the measured contribution of bank lending to GDP growth.

Overall, the direct impact on GDP growth from a slowdown in the financial sector is likely to be relatively muted under current ONS methodology. But that impact could be amplified if there are spillovers to closely related sectors such as commercial property and legal services (Section 3.1). The potential impact on employment and remuneration is discussed in Sections 3.3 and 4.3 respectively.

(1) Due to the treatment of owner-occupied housing in the National Accounts, mortgage lending (excluding estimated housing equity withdrawal) will be treated as an input into households' production of housing services rather than final consumption.

(2) Akritidis, L (2007), 'Improving the measurement of banking services in the UK National Accounts', *Economic and Labour Market Review*, Vol. 1, No. 5, pages 29–37.

**Chart 3.3 Measures of capacity utilisation<sup>(a)</sup>**

Sources: Bank of England, BCC, CBI, CBI/Grant Thornton, CBI/PwC and ONS.

(a) Three measures are produced by weighting together surveys from the Bank's regional Agents (manufacturing, services), the BCC (manufacturing, services), and the CBI (manufacturing, financial services, business/consumer services, distributive trades), using nominal shares in value added. The BCC data are non seasonally adjusted.

One way of judging capacity pressures is to use business surveys. A range of survey indicators suggest that capacity pressures have been relatively tight since the middle of 2006 (**Chart 3.3**). There is some tentative evidence of an easing in capacity pressures in 2007 Q3, though different indicators give different messages.

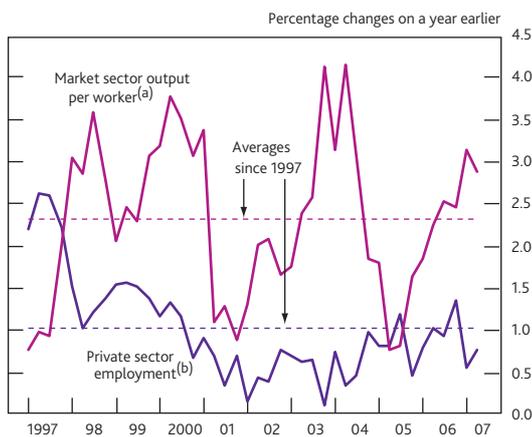
A period of sustained pressure on capacity should encourage companies to invest in physical assets, such as machinery and buildings. Past pressures on capacity are therefore consistent with the pickup in business investment growth in 2006 (Section 2.2). Other things being equal, that rise in business investment will have led to a pickup in growth in the economy's physical capital. However, annual business investment flows are small relative to the size of the non-residential capital stock. Moreover, a significant part of this investment will have been to replace existing assets that had reached the end of their working lives. So a sustained period of strong business investment would be needed for the capital stock to increase materially.

### 3.3 Labour market tightness

#### Labour demand

As well as influencing companies' investment decisions, relatively tight capacity pressures should also encourage more hiring. However, employment growth was sluggish in late 2006 and early 2007. And data for July and August suggest only modest growth in Q3. Some of the past weakness in employment growth reflects a slowdown in the public sector. But annual growth in private sector employment fell sharply in 2007 Q1, before recovering slightly in Q2 (**Chart 3.4**). Within the private sector, the self-employed have accounted for much of the growth over the past year.

Explanations for the juxtaposition of strong capacity pressures and muted wage growth on the one hand, and subdued employment growth on the other were discussed in the *August Report*. These included the possibility that supply-side factors, such as high non-wage costs or a lack of suitably skilled workers, had acted as a brake on employment growth. To help shed more light on the alternative hypotheses, the Bank's regional Agents carried out a survey of their business contacts. The Agents asked companies which factors had most influenced the recent evolution of the size of their workforce. Respondents suggested that productivity gains were the most important factor that had pushed down on the number of workers they required (**Chart 3.5**). Evidence from the ONS corroborated that: annual market sector productivity growth in 2007 H1 was well above its ten-year average (**Chart 3.4**). That rise in productivity occurred alongside robust growth in output, so is likely to have predominantly reflected cyclical rather than structural factors.

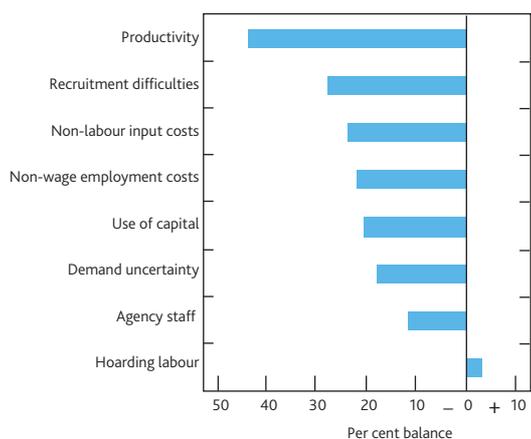
**Chart 3.4 Employment and productivity**

Sources: ONS (including Labour Force Survey) and Bank calculations.

(a) Market sector output divided by private sector employment. Up to the end of 2004, market sector output is a Bank calculation based on ONS data. From 2005 the chart shows the ONS experimental estimate of market sector value added.

(b) LFS employment excluding general government employees (adjusted to be on a calendar-quarter basis).

**Chart 3.5 Agents' survey: factors influencing the size of the workforce<sup>(a)</sup>**



(a) Based on 608 responses to a survey of companies by the Bank of England's regional Agents weighted by workforce size. Companies were asked about the factors which influenced the size of their workforce. The net balance is calculated as the proportion saying factors were mildly/strongly positive influence minus the proportions saying they were mildly/strongly negative influence, with strong responses given a weight of 1 and mild a weight of 0.5.

**Table 3.B Employment intentions<sup>(a)</sup>**

	Averages since 1997	2006 Q4	2007		
			Q1	Q2	Q3
<b>Manufacturing</b>					
BCC <sup>(b)</sup>	7	12	11	14	19
CBI <sup>(b)</sup>	-17	-29	-16	-9	-9
Agents <sup>(c)</sup>	-1.0	-0.2	-0.1	0.0	0.0
<b>Services</b>					
BCC <sup>(b)</sup>	21	22	28	33	24
CBI/Grant Thornton consumer and business services <sup>(b)</sup>	14	21	31	27	20
CBI/PwC financial services <sup>(b)</sup>	4	35	34	24	10
Agents <sup>(c)</sup>	1.3	1.7	1.9	1.9	1.4

Sources: Bank of England, BCC, CBI, CBI/Grant Thornton and CBI/PwC.

- (a) Dates refer to the period in which the survey was conducted.  
 (b) Net percentage balances of companies expecting their workforce to increase over the next three months. BCC balances are non seasonally adjusted. The CBI/Grant Thornton average is since 1998 Q4.  
 (c) End-quarter observations. These scores began in July 1997 and refer to companies' employment intentions over the next six months. Prior to January 2005, the scores reflected the current employment situation. A score of above (below) zero indicates rising (falling) employment. From January 2005, the scores for business and consumer services are weighted together using employment shares.

**Table 3.C Indicators of migration flows**

Thousands	2003–04	2004–05	2005–06	2006–07
Net inward migration <sup>(a)</sup>	173	258	176	n.a.
of which, A8 Accession countries <sup>(b)</sup>	9	74	57	n.a.
National Insurance numbers <sup>(c)</sup>	371	440	662	714
of which, Accession countries <sup>(d)</sup>	29	119	277	321
A8 Worker Registration Scheme <sup>(e)</sup>	n.a.	184	210	224
Net inflows by sea and air <sup>(f)</sup>	319	337	193	300

Sources: Department for Work and Pensions, Home Office and ONS.

- (a) Based on mid-year population estimates.  
 (b) The A8 Accession countries are the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.  
 (c) Number of overseas nationals who have registered for a National Insurance number. These data are constructed on a tax-year basis.  
 (d) A8 Accession countries plus Bulgaria, Cyprus, Malta and Romania.  
 (e) Nationals from the A8 are required to register under the Worker Registration Scheme upon finding a job.  
 (f) Based on quarterly net flows from the Civil Aviation Authority/ONS data. Data on net flows by sea are not yet available for 2007 H1, and are assumed to be equal to those in 2006 H1.

The Agents' survey broadly confirmed the conclusion in the August Report that supply-side factors have played a key role in companies' recent hiring decisions. One of those supply-side factors was a lack of suitably skilled workers; this was the second most cited constraint on hiring in the Agents' survey. Similarly, respondents to recent CBI surveys have reported that a shortage of skilled staff has been a factor constraining output growth.

Another supply-side factor highlighted in the Agents' survey was the level of non-wage costs (both non-labour input costs and non-wage employment costs). Past Reports have discussed the possibility that increased non-wage costs have deterred companies from hiring. The sharp rise in non-wage costs between 2004 and 2006 ultimately required a downward adjustment to real take-home pay. If that adjustment failed to take place, then companies may have scaled back their hiring plans. The adjustment to the sharp rise in non-wage costs in 2004–06 now appears to have come to an end, although the recent pickup in oil and other commodity prices may imply some further adjustment (Section 4.3).

Looking forward, developments in the labour market may be affected by the recent financial market turbulence. That is likely to be most apparent in the financial services sector itself, which accounts for around 4% of UK employment. The most recent CBI/PwC Financial Services Survey (taken between 22 August and 5 September) suggested that financial sector employment growth would slow over the next three months (Table 3.B). However, previous episodes of financial turbulence do not seem to have led to sustained weakness in employment growth in the financial sector. For example, following the collapse of the LTCM hedge fund, financial sector employment fell in 1998 Q3 but rebounded in Q4. Employment in the wider service sector may also be affected by the developments in financial markets. In 2007 Q3, service sector companies' employment intentions weakened. But prospects in the manufacturing sector looked more positive.

### Migration and labour supply

Migratory flows continue to be a key influence on the labour market. The latest ONS data suggest that net inward migration eased in the year to mid-2006 (Table 3.C), broadly in line with previous official projections. But these data are primarily based on the International Passenger Survey (IPS). As discussed in the November 2006 Report, the IPS data suffer from a number of problems.<sup>(1)</sup> For example, the survey is based on a limited sample of travellers and participation is voluntary. An alternative, more timely measure based on the total number of people departing from and arriving in UK air and sea ports (drawing on Civil Aviation Authority data) suggests that net arrivals in the United Kingdom fell back a little in the year to June 2006 but picked up again over the

(1) See pages 22–24 of the November 2006 Inflation Report.

**Table 3.D** Selected indicators of labour market pressures<sup>(a)</sup>

	Averages					
	2006		2007			
	H1	H2	H1	July	Aug.	Sep.
LFS unemployment rate <sup>(b)</sup>	5.3	5.5	5.5	5.4	5.4	n.a.
Claimant count <sup>(c)</sup>	2.9	3.0	2.8	2.7	2.6	2.6
Weighted non-employment rate <sup>(d)</sup>	7.2	7.6	7.7	7.7	7.7	n.a.
Vacancies/unemployed ratio <sup>(e)</sup>	0.37	0.35	0.38	0.40	0.40	n.a.
Recruitment difficulties <sup>(f)</sup>	-0.5	-0.4	1.0	1.7	1.9	1.6
Temporary workers <sup>(g)</sup>	25.0	25.3	26.3	27.2	27.1	n.a.
Part-time workers <sup>(h)</sup>	8.6	8.9	9.1	9.6	9.5	n.a.

Sources: Bank of England and ONS (including Labour Force Survey).

- (a) Based on three-month moving average measures, unless otherwise stated.  
 (b) Percentage of the economically active population.  
 (c) Percentage of the sum of the claimant count and Workforce jobs, monthly data.  
 (d) Percentage of the working-age population. This measure weights together the different types of non-employed by a proxy of their likelihood of finding work based on transition rates into employment derived from the Labour Force Survey (LFS). Weights are backward-looking four-quarter moving averages of the quarterly transition rates of each group into employment.  
 (e) The vacancies/unemployed ratio is calculated as the number of job vacancies divided by the LFS measure of unemployment. Vacancies exclude agriculture, forestry and fishing.  
 (f) Agents' scores for recruitment difficulties in the most recent three months compared with the situation a year earlier.  
 (g) Percentage of temporary workers who could not find a permanent job.  
 (h) Percentage of part-time workers who could not find a full-time job.

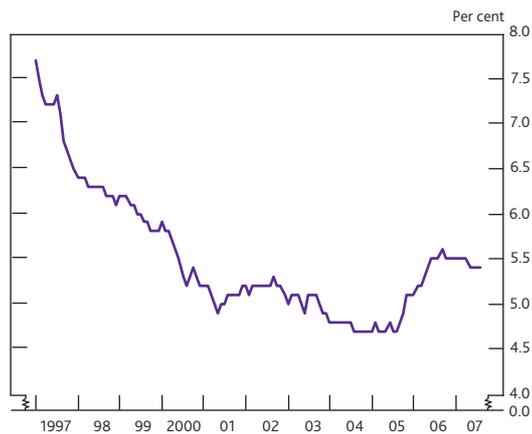
following twelve months. Other data — specifically the number of National Insurance numbers allocated to overseas nationals, and the number of people from the A8 Accession countries registered for work under the Worker Registration Scheme — suggest a pickup in 2006–07. However, these data measure gross inflows, so will overstate the growth in labour supply if migrants subsequently return home. Overall, although there is uncertainty about the exact scale of migration, it is clear that an increase in foreign workers has boosted UK labour supply in recent years.

### Labour market tightness

The overall degree of tightness in the labour market is an important determinant of current and future wage pressures. There are a number of measures of labour market tightness including unemployment, vacancies and information from business surveys. However, interpreting movements in these measures is not always straightforward, particularly if supply-side factors have played a role. For example, a rise in unemployment associated with cyclical demand factors would suggest a greater easing in wage pressures than a similar rise in unemployment driven by the supply-side factors discussed earlier in this section.

Recent evidence on labour market pressures is mixed (**Table 3.D**). The claimant count has fallen back over the past year, unwinding the rise in 2005. The more comprehensive LFS measure of the unemployment rate has also fallen back a little from its recent peak but, at 5.4% in the three months to August, remains elevated compared with much of the earlier part of this decade (**Chart 3.6**). The ratio of vacancies to unemployed has risen over the past year, suggesting that companies may be finding it more difficult to recruit the workers that they want.

Other measures, however, are consistent with a looser labour market. Inactivity has risen over the past year and, reflecting that, a measure of non-employment — which weights together different groups of the inactive and unemployed by the probability of finding a job — has not yet fallen back from its recent peak. The proportion of those with part-time jobs who state that they could not find a full-time job has risen over the past year, as has the proportion of temporary workers who could not find a permanent position. And there is tentative evidence from the Bank's regional Agents that recruitment difficulties began to ease in September. The outlook for labour market conditions and capacity pressures is discussed in Section 5.

**Chart 3.6** Unemployment rate<sup>(a)</sup>

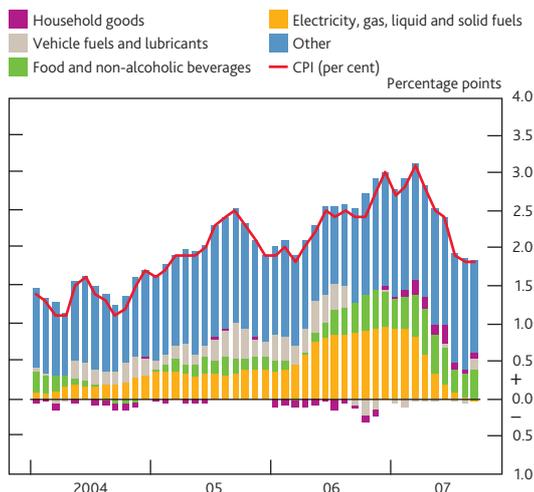
Source: Labour Force Survey.

- (a) Percentage of the economically active population. Three-month moving average measure.

# 4 Costs and prices

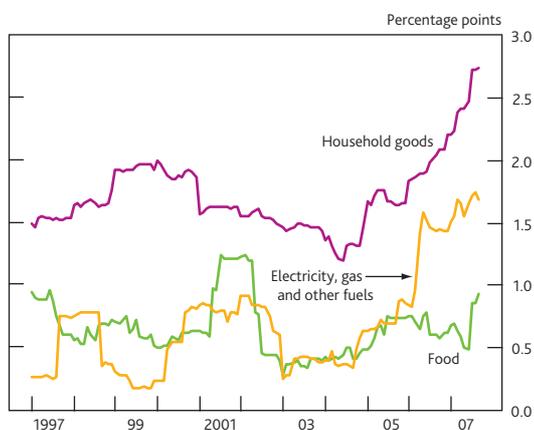
CPI inflation was close to the 2% target in September, following a significant decline over the summer months. But key commodity prices have increased substantially since the *August Report*: oil prices reached a new peak in early November and wholesale gas prices rose sharply. Private sector regular pay growth edged higher, but remained below its average over the past decade. Unit labour cost growth was weak, reflecting the subdued growth in earnings and strong growth in labour productivity. Businesses' pricing intentions remained elevated, as did measures of household inflation expectations.

**Chart 4.1** Contributions to CPI inflation<sup>(a)</sup>



(a) Contributions to annual (non seasonally adjusted) CPI inflation.

**Chart 4.2** Volatility in inflation rates of CPI components<sup>(a)</sup>



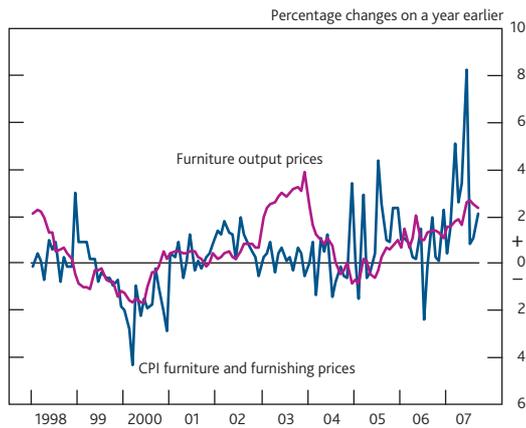
(a) Twelve-month rolling standard deviations of monthly CPI inflation rates. Data are non seasonally adjusted.

## 4.1 CPI inflation

CPI inflation — the measure targeted by the MPC — was 1.8% in September (**Chart 4.1**). Between March and August, CPI inflation fell by 1.3 percentage points, 0.8 percentage points of which was accounted for by lower domestic electricity and gas price inflation. The falling contribution reflected earlier price increases dropping out of the annual comparison, as well as the price reductions announced by energy suppliers in the spring feeding through. The *August Report* assumed that retail prices would be cut again over the winter, given the sharp reduction in futures prices for wholesale gas during late 2006 and early 2007. But in the absence of further announcements, and in view of the recent upward movement in futures prices, it is now thought more likely that domestic electricity and gas prices will rise, rather than fall.

The remainder of the decline in CPI inflation since March was accounted for by a falling contribution from food, household goods and other components. Over the past two years, the monthly inflation rates of some components of the CPI have increased in volatility (**Chart 4.2**). That has been particularly true for household goods prices, possibly reflecting an increase in the scale of seasonal discounting. However, the increased volatility has also been accompanied by a more generalised increase in furniture and furnishing prices over the past 18 months (**Chart 4.3**).

Food price inflation has also been volatile recently (**Chart 4.2**), reflecting global demand and supply, as well as domestic factors such as competitive pressures in the retail market (see box in the *August Report* (pages 30–31)). The increase in volatility leaves the outlook for food price inflation uncertain. However, increased food commodity prices may place renewed upward pressure on retail food prices. The latest *CBI Industrial Trends Survey* reported the highest balance on record for both reported and expected average unit costs in the food,

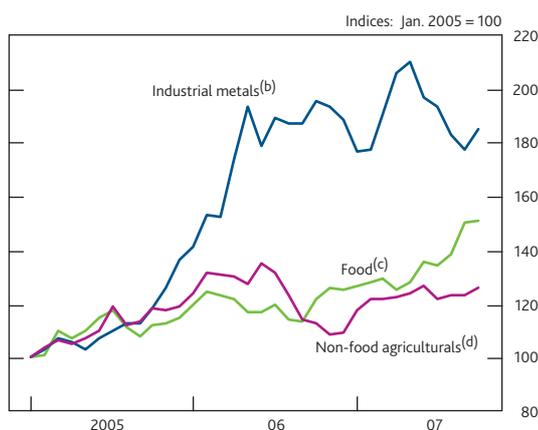
**Chart 4.3 Furniture prices****Table 4.A Energy prices<sup>(a)</sup>**

	Average spot prices	Average futures prices	
		2008	2009
<b>Brent crude oil prices: \$ per barrel (£ per barrel)<sup>(b)</sup></b>			
November Report	88 (43)	85	81
August Report	77 (38)	74	73
Percentage changes	15 (13)	15	11
<b>UK wholesale gas prices: pence per therm</b>			
November Report	45	49	47
August Report	30	39	40
Percentage changes	48	23	16

Sources: Bloomberg, International Exchange ([www.theice.com](http://www.theice.com)), Reuters and Thomson Datastream.

(a) Average spot and futures prices in the fifteen working days to 7 November and five working days to 1 August for the November and August Reports respectively.

(b) Figures in parentheses show Brent crude oil prices in sterling terms, calculated using the average market exchange rate prevailing in the five and fifteen working day windows.

**Chart 4.4 Sterling commodity prices<sup>(a)</sup>**

Sources: Bank of England and *The Economist*.

(a) Monthly averages of weekly data in US dollars, converted into sterling using market exchange rates.

(b) Industrial metals include aluminium, copper, nickel, zinc, lead and tin.

(c) The largest food components include wheat, coffee, soya beans, maize, soya meal, rice and sugar.

(d) The largest non-food agriculture components include cotton, rubber and timber.

drink and tobacco sector, reflecting the recent increases in global food commodity prices (Section 4.2).

## 4.2 Global costs and prices

Ultimately, CPI inflation is determined by the stance of monetary policy. However, in the short term, inflation can be affected by movements in individual prices if other prices take time to adjust. To the extent that they are not offset by movements in the exchange rate, global costs and prices can affect UK inflation in two ways: first, through imports; and second, through those goods which are produced domestically but whose prices are at least partly determined on world markets (for example, oil).

Oil prices continued to increase over the past three months, with Brent crude reaching a new peak near \$100 a barrel, reflecting a combination of strong demand from emerging economies and concerns about supply. The pickup in oil prices pushes up on the MPC's projection for inflation in the near term (Section 5) — though the starting point assumed is somewhat lower than \$100 a barrel, reflecting the fact that much of the recent rise in prices occurred towards the end of the fifteen-day window used to calculate the conditioning assumptions (Table 4.A). Spot prices for wholesale gas rose significantly. And there were significant increases in energy futures prices. The prices of other commodities, such as metals and food, have also been rising (Chart 4.4), despite a weakening of demand prospects in the advanced economies. Possible reasons for this are discussed in the box on page 34. The risks to the inflation outlook associated with higher commodity prices are considered in Section 5.

Sterling import price inflation picked up over 2005 and early 2006 (Chart 4.5). In part, that reflected the impact of rising energy prices and a weaker sterling exchange rate. But the first half of 2007 marked a return to falling import prices (in annual terms). That was despite the rise in non-oil commodity prices, and partly reflected an appreciation of sterling. Since the August Report, the sterling ERI has depreciated by 2.4% (Section 1.1). That, along with the recent rise in oil prices, is likely to place upward pressure on sterling import prices in the near term.

## 4.3 Labour costs

Labour is the single largest cost facing most businesses. According to the official average earnings index (AEI), private sector regular pay growth picked up a little to 3.9% in the three months to August, but remained below its average over the past decade (Table 4.B). That pickup reflected a small increase in both pay settlements and pay drift — the latter capturing elements such as merit pay increases and overtime payments.

## Developments in primary commodity prices

Primary commodity prices have risen strongly over recent years. Since the end of 2004, the price of non-fuel commodities has risen by over 60% in sterling terms, while the price of oil has more than doubled. That contrasts with the period between 1997 and 2004, where commodity prices were broadly stable. More recently, despite the weakening in economic prospects for the advanced economies, some key commodity prices have continued to rise sharply. This box examines the factors driving global commodity prices.

### Demand factors

The continued strength of commodity prices in part reflects the growth in emerging economies, such as China, which have become key consumers of primary commodities. Since the start of 2005, China has accounted for almost all of the increase in world demand for metals such as aluminium, copper and zinc, a much greater contribution than in the previous five years (Table 1). China's demand for oil has also been substantial, contributing to around a third of the increase in world demand since 2000.

**Table 1** Primary commodity consumption

Average annual percentage changes

	2000–04			2005–07 <sup>(a)</sup>		
	Contribution of: <sup>(b)</sup>			Contribution of: <sup>(b)</sup>		
	World	United States	China	World	United States	China
<b>Oil</b>	1.7	0.3	0.6	1.4	0.1	0.5
<b>Metals</b>						
Aluminium	5.2	-0.4	2.8	6.6	0.2	5.5
Copper	3.4	-0.9	2.5	2.7	-0.8	3.1
Zinc	4.4	-0.5	3.3	2.4	-0.4	2.4
<b>Agricultural food<sup>(c)</sup></b>						
Wheat	0.5	-0.1	-0.2	1.2	-0.1	-0.1
Maize	2.5	1.0	0.5	3.5	1.4	0.8
Soya beans	4.4	0.0	1.9	5.0	0.9	1.6
<b>Memo:</b>						
Share of world GDP (per cent) <sup>(d)</sup>	–	20.8	12.3	–	19.6	15.1

Sources: IMF, International Energy Agency (IEA), US Department of Agriculture (USDA) and World Bureau of Metal Statistics.

(a) Oil and agricultural food demand growth for 2007 based on estimates from the IEA and the USDA respectively. Metals estimates for 2007 based on annualised growth for the five months to May 2007.

(b) Percentage points.

(c) Based on harvests across countries over the year.

(d) Gross domestic product based on purchasing power parity (PPP) weights from the October 2007 IMF *World Economic Outlook*.

World demand for agricultural food commodities has also risen, although China's contribution to that increase has been more limited than for other commodities. One important development in the demand for agricultural commodities has been the increasing use of foods such as maize and sugar cane for conversion into biofuel. That has been a key influence on US consumption, which has increased materially in recent years.

One indicator of the pressures of demand on commodity prices is the Baltic Exchange Dry Index, which measures the price of transporting bulk commodities such as coal, iron ore and wheat. The length of time taken to build new ships means that unexpected increases in demand for these commodities tend to raise transportation costs for a period. The index has risen by around 60% in the past three months, and around 130% since the start of 2005.

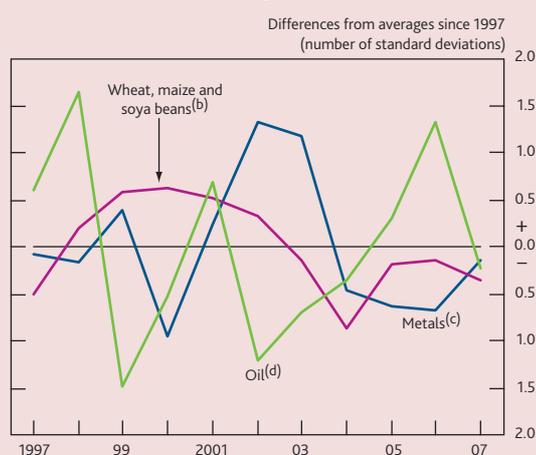
Looking ahead, the demand for primary commodities is likely to remain robust. Although near-term growth projections for the advanced economies have been downgraded, the outlook for the emerging economies remains strong (Section 2.4).

### Supply factors

While primary commodity demand growth has been strong, with China playing a key role, there have also been important factors constraining supply. In the metals sector, new capacity can take many years to come on stream. Agricultural output is likely to respond more quickly, but is susceptible to weather conditions. Poor harvests in North America, Europe and Australia have had a substantial downward impact on supply recently, with wheat particularly adversely affected.

One indicator of the pressures of demand on supply is the worldwide stock of inventories. Oil inventories have declined over the past year. Inventories of metals held by London Metal Exchange warehouses have been well below average in recent years (Chart A). And agricultural inventories have also been low. In the World Agricultural Supply and Demand Estimates (released on 12 October), the US Department of Agriculture was expecting world inventories of wheat in 2007/08 to be at their lowest in 30 years.

**Chart A** Oil, metal and agricultural inventories<sup>(a)</sup>



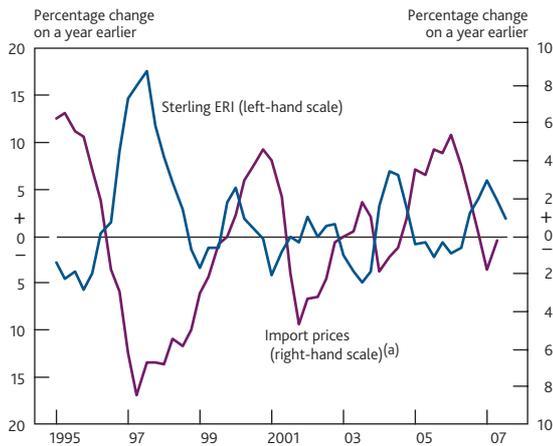
Sources: Energy Information Administration (EIA), London Metal Exchange, *The Economist*, Thomson Datastream and US Department of Agriculture (USDA).

(a) The metals and food commodities are weighted together according to the value of world imports in 1999–2001, consistent with *The Economist* commodity price index. All series are end-period inventories except agricultural food commodities which are based on harvests across countries over the year.

(b) Data for 2006 and 2007 are based on estimates and projections respectively, from the latest USDA World Agricultural Supply and Demand Estimates.

(c) Includes aluminium, copper, nickel, zinc, lead and tin. Observation for 2007 is based on the average of daily data in the fifteen working days to 7 November.

(d) OECD commercial inventories. 2007 based on projections in the EIA Short-Term Energy Outlook.

**Chart 4.5** Import prices and the exchange rate

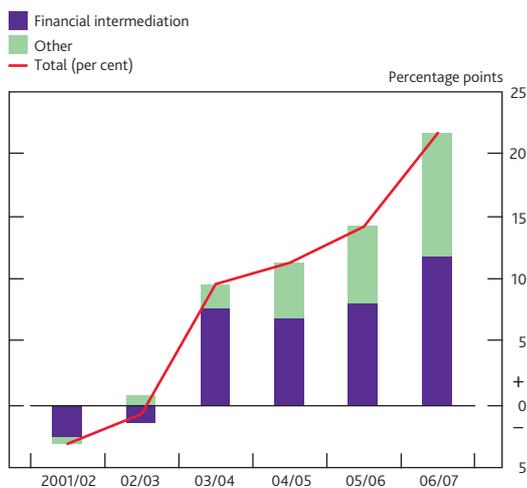
(a) Import prices are based on the National Accounts goods and services import price deflator, excluding estimates of missing trader intra-community (MTIC) fraud.

**Table 4.B** Private sector earnings<sup>(a)</sup>

Percentage changes on a year earlier	Averages <sup>(b)</sup>	2007				
		Q1	Q2	July <sup>(c)</sup>	Aug. <sup>(c)</sup>	Sep. <sup>(c)</sup>
(1) Regular pay	4.1	3.8	3.5	3.7	3.9	n.a.
(2) Pay settlements <sup>(d)</sup>	3.3	3.2	3.4	3.5	3.6	3.6
(1)–(2) Pay drift <sup>(e)</sup>	0.8	0.6	0.1	0.2	0.3	n.a.
(3) Total average earnings	4.3	4.8	3.4	3.7	4.0	n.a.
(3)–(1) Bonus contribution <sup>(e)</sup>	0.2	1.0	-0.1	0.0	0.1	n.a.

Sources: Bank of England, Incomes Data Services, Industrial Relations Services, the Labour Research Department and ONS.

- (a) Based on the average earnings index.  
 (b) Between January 1998 and August 2007.  
 (c) Three-month average measures.  
 (d) Average of private sector settlements over the past twelve months.  
 (e) Percentage points.

**Chart 4.6** Bonus growth<sup>(a)</sup>

(a) Contributions to financial year (April–March) growth in whole-economy bonus payments per head. Calculation based on average weekly earnings bonus payments data and the employee jobs component of Workforce jobs. The average weekly earnings data are experimental.

Bonus payments have made only a small contribution to overall earnings growth over the past three months. They are, however, a significant part of overall pay in the financial sector. In the year to March, they made up around a third of overall earnings in the sector. And in recent years they have grown rapidly, accounting for over half of the growth in whole-economy bonuses (**Chart 4.6**) and contributing 0.4–0.7 percentage points to annual growth of average earnings. The recent financial market turbulence is likely to impact on the profitability of the financial sector and hence bonus payments in the current financial year. In as much as bonuses reflect a sharing of past profits, they are likely to have only a limited impact on future cost pressures. However, consumption growth could be affected if economy-wide earnings growth were to weaken materially. Factors influencing household consumption are examined in Section 2.1.

Two other measures of pay growth, average weekly earnings (AWE) and wages and salaries per head (**Chart 4.7**), have been rising at a faster rate than the AEI. The divergence between AWE growth, an experimental series, and the AEI is the subject of an ONS investigation.<sup>(1)</sup> In 2007 Q1, the discrepancy between the two measures largely related to bonuses.<sup>(2)</sup> More recently, however, the gap between the two series has been associated with differences in regular pay growth, which has been stronger under the AWE measure.

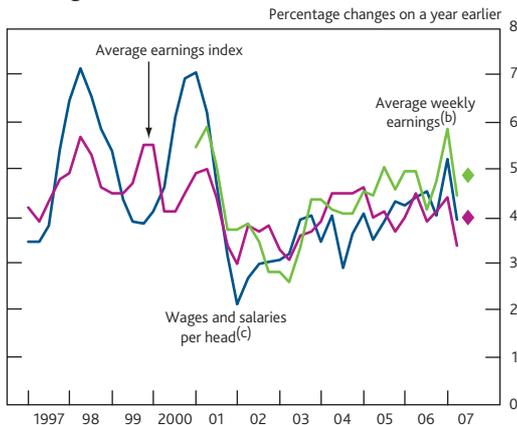
The measure of wages and salaries per head, derived from the National Accounts, makes use of administrative data and captures a broader range of pay elements than either the AEI or the AWE. But these tend to take some time to be fully incorporated, with the historical pattern of revisions suggesting that, on average, initial estimates of quarterly growth tend to be revised up a little. One feature of all these earnings measures is that they exclude the self-employed, whose earnings may be more sensitive to the economic cycle.

Companies' pricing decisions depend not only on pay growth, but also on non-labour costs and productivity. During late 2006 and the first half of 2007, private sector unit labour cost growth, which compares the cost of labour to the amount of output produced, was well below its average of the past decade (**Chart 4.8**). That reflected strong growth in labour productivity (Section 3.3), alongside relatively muted earnings growth. Non-labour unit costs, which capture the cost of imports and businesses' consumption of oil and gas, had risen sharply in 2004–06. But they fell back in late 2006 and early 2007, pulling down overall unit costs.

(1) See ONS (2007), 'A preliminary analysis of the differences between Average Weekly Earnings and the Average Earnings Index'.

(2) See Section 4.2 of the August 2007 Report.

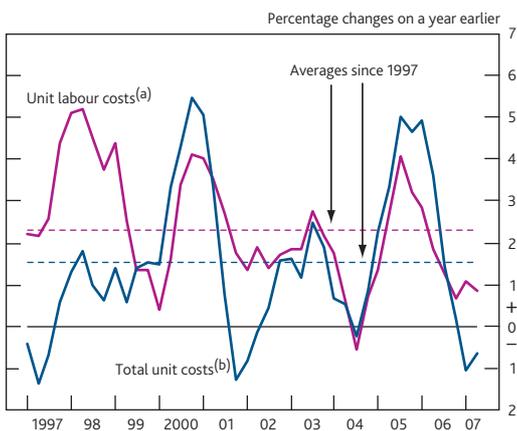
**Chart 4.7** Alternative measures of whole-economy earnings<sup>(a)</sup>



Source: ONS (including Labour Force Survey).

- (a) Quarterly data. The green and magenta diamonds show average annual growth in July and August.  
 (b) The average weekly earnings series is experimental.  
 (c) Wages and salaries per head are calculated as whole-economy wages and salaries divided by the number of employees (Labour Force Survey measure).

**Chart 4.8** Private sector unit costs



- (a) Bank estimate. Compensation of private sector employees (grossed up for self-employment) divided by labour productivity in the non-oil and gas market sector.  
 (b) Bank estimate. Total nominal costs divided by non-oil and gas market sector output (gross value added plus intermediate inputs). Costs are estimated as the sum of compensation of private sector employees (grossed up for self-employment), nominal imports (excluding the impact of missing trader intra-community fraud) and the estimated value of domestic consumption of oil and gas.

**Chart 4.9** Real take-home pay relative to productivity



- (a) Households' post-tax wages and salaries divided by the consumption deflator. Includes non-profit institutions serving households. Productivity is calculated from ONS data on non-oil and gas market sector output divided by private sector employees.  
 (b) Ratio of market sector non-oil and gas output prices to the consumption deflator, multiplied by the ratio of one minus the effective rate of tax on employees to one plus the effective rate of employers' social contributions. Profitability defined as the ratio of profits to value-added output.

A central issue is whether unit labour cost growth has been sufficiently subdued to offset the impact of the substantial increase in non-labour costs over 2004–06. One way of assessing the degree of that offset is to compare real take-home pay with the level that would have left businesses' profitability unchanged. The estimate in **Chart 4.9** suggests that during 2005–06, the decline in real take-home pay (relative to productivity) was not enough to offset the rise in non-wage costs. That helps to explain why the unemployment rate rose over that period (Section 3.3). More recently, real take-home pay has come back into line with the level consistent with unchanged profitability, suggesting that the adjustment has come to an end. Looking ahead, the recent rise in oil and other commodity prices will push up businesses' costs once again, and may imply some further adjustment to real take-home pay. The prospects for wages are examined in Section 5.

## 4.4 Business pricing and inflation expectations

Recent *Reports* have highlighted the rise in the fraction of businesses either reporting higher prices or expecting to raise their prices in the future.

The latest estimates of producer prices for manufacturing and service sector output suggest continued above-average rates of output price inflation (**Table 4.C**). Pricing intentions surveys also remain above their average over the past decade, with manufacturing indicators particularly elevated.

In part, the continued strength of pricing surveys is likely to reflect renewed upward pressure on businesses' costs, with manufacturing input price inflation remaining above its average over the past decade. If that were to translate into continued above-average output price inflation, that could place renewed upward pressure on retail prices. One factor that is likely to influence pricing decisions is expectations of demand. Another factor is the degree to which companies expect overall price inflation to rise over the coming year. However, those expectations cannot be directly observed. One way of inferring inflation expectations is through financial market instruments. Inflation 'breakevens' (the difference between nominal and real forward rates on government bonds), which provide an indication of the inflation expectations of market participants, rose very slightly between August and November. An alternative way of inferring inflation expectations is through surveys of households.

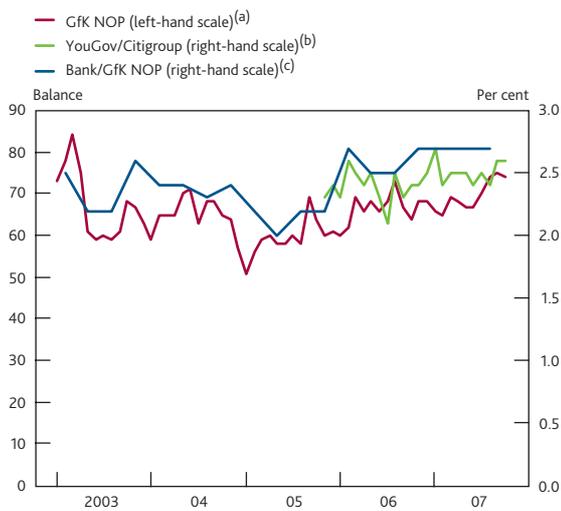
The quarterly survey carried out by GfK NOP for the Bank suggests that inflation expectations over the next twelve months remain elevated (**Chart 4.10**). An alternative survey by GfK NOP has picked up a little in recent months, as has the survey carried out by YouGov for Citigroup. The latest survey

**Table 4.C** Official and survey measures of prices<sup>(a)</sup>

	Averages since 1997 <sup>(b)</sup>	2007				
		June	July	Aug.	Sep.	Oct.
<b>Manufacturing</b>						
ONS input prices <sup>(c)</sup>	0.3	2.9	2.6	1.3	1.0	n.a.
ONS output prices <sup>(d)</sup>	0.3	0.8	0.7	0.6	0.6	n.a.
CBI – expected	-5	16	11	16	16	14
BCC – expected	13	24	–	–	32	–
CIPS/NTC – reported	51.7	56.8	57.5	56.0	57.8	57.0
Agents' scores – reported	0.3	2.5	2.5	2.3	2.4	n.a.
<b>Services</b>						
CBI/Grant Thornton – expected	3	4	–	–	8	–
BCC – expected	24	28	–	–	28	–
CIPS/NTC – reported	52.2	53.3	52.2	53.1	53.5	54.0
Agents' scores – reported	2.5	3.0	3.0	2.8	2.5	n.a.

Sources: Bank of England, BCC, CBI, CBI/Grant Thornton, CIPS/NTC and ONS.

- (a) The BCC and CBI surveys ask about prices over the next three months. The CIPS/NTC surveys ask about prices over the past month and the Agents' scores refer to prices over the past three months compared with a year earlier. The quarterly BCC and CBI/Grant Thornton surveys have been allocated to the final month in each quarter. BCC data are non seasonally adjusted.
- (b) The averages for the CIPS/NTC manufacturing, BCC and CBI/Grant Thornton surveys are since the series began in November 1999, 1997 Q2 and 1998 Q4 respectively. The averages for the Agents' scores are since July 1997 for manufacturing and January 2005 for services.
- (c) Including Climate Change Levy. Percentage change three months on three months earlier.
- (d) Excluding excise duties. Percentage change three months on three months earlier.

**Chart 4.10** Surveys of households' inflation expectations over the next twelve months

Sources: Bank of England, Citigroup, GfK NOP, YouGov and research carried out by GfK NOP on behalf of the European Commission.

- (a) Net balance expecting prices to increase. The question asks: 'In comparison with the past twelve months, how do you expect consumer prices will develop in the next twelve months?'
- (b) Median of respondents' expected change in consumer prices of goods and services over the next twelve months.
- (c) Median of respondents' expected change in shop prices over the next twelve months.

results come despite the significant decline in CPI inflation since March. The risks associated with inflation expectations are discussed in Section 5.

# 5 Prospects for inflation

In the central projection, assuming that Bank Rate follows a declining path implied by market yields, GDP growth slows in the near term, reflecting past increases in Bank Rate and the effects of recent financial market developments. Growth then recovers, as some of those effects wear off and the impact of declining interest rates and a lower exchange rate is felt. CPI inflation picks up next year, reflecting higher energy and import price inflation, but then eases back as pressures on capacity moderate, settling around the 2% target in the medium term. The decline and subsequent recovery in GDP growth are both more pronounced than in the *August Report*, but near-term inflation is somewhat higher on average. The key risks to the outlook are: the implications of financial market developments for credit conditions, asset prices and spending; the prospects for world growth and prices; and the evolution of wages and inflation expectations. Overall, the risks to growth are on the downside, while those to inflation are balanced. The uncertainties around the medium-term outlook for demand and inflation are judged to be higher than in the *August Report*.

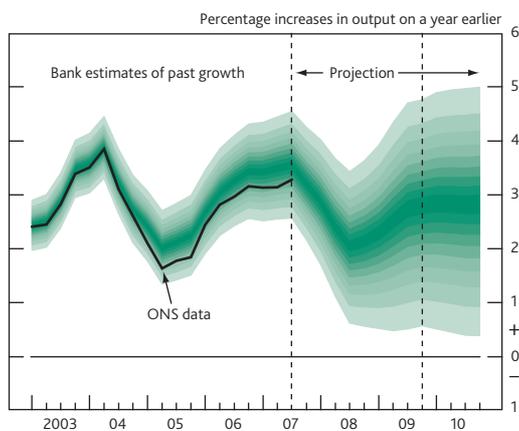
## 5.1 The projections for inflation and demand

The projections in the *August Report* implied that demand growth needed to slow to keep CPI inflation on target in the medium term. Three key developments since then have shaped the Committee's current projections. First, the turbulence in financial markets, which poses clear downside risks to activity, but remains highly uncertain both in scale and impact. Second, the underlying path of demand, where the official data remain robust, though some forward-looking indicators have eased. And, third, the sharp rise in commodity prices such as oil and food, which poses upside risks to the inflation outlook, particularly in the near term.

The projection for GDP growth is shown in **Chart 5.1**, on the assumption that Bank Rate follows a declining path implied by market yields (see the box on page 41). For the first time, the fan chart has been extended backwards to show the Committee's best collective judgement of the most likely path of output over the past, and the uncertainty around it. The box on page 39 explains the new features of the chart. On the basis of the past pattern of revisions and indications from business surveys, it is judged to be more likely than not that recorded output growth in recent quarters will eventually be revised upwards, though the margin of uncertainty is wide.

In the central case, GDP growth is projected to fall back quite markedly over the first year of the forecast period, reflecting a tightening in private sector credit conditions and heightened uncertainty as a result of the current financial market

**Chart 5.1** GDP projection based on market interest rate expectations



The fan chart depicts the probability of various outcomes for GDP growth. To the left of the first vertical dashed line, the distribution reflects the likelihood of revisions to the data over the past; to the right, it reflects uncertainty over the evolution of GDP growth in the future. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that the mature estimate of GDP would lie within the darkest central band on only 10 of those occasions. The fan chart is constructed so that outturns are also expected to lie within each pair of the lighter green areas on ten occasions. Consequently, GDP growth is expected to lie somewhere within the entire fan on 90 out of 100 occasions. The bands widen as the time horizon is extended, indicating the increasing uncertainty about outcomes. See the box on page 39 for a fuller description of the fan chart and what it represents. The second dashed line is drawn at the two-year point of the projection.

## Explaining the new GDP fan chart

The MPC's projection for GDP growth is presented in the form of a fan chart rather than a single point forecast because the future is inherently uncertain.<sup>(1)</sup> But the past is uncertain too. Official measures of past GDP growth are regularly revised as new information is received and methodological improvements are made. In forming its projections, the MPC makes allowance for this 'data uncertainty', aiming off from early estimates of the official data when it is appropriate to do so. But until recently neither the scale of these adjustments, nor the range of uncertainty around them, have been explicitly reported. Instead, the past has typically been represented by the latest vintage of official GDP data.<sup>(2)</sup>

Analytical techniques developed by Bank staff now make it possible to address these issues in a more systematic way.<sup>(3)</sup> Charts 5.1 and 5.2 therefore show the MPC's best collective judgement of the most likely path for the mature estimate of GDP growth, and the uncertainty around it, both over the past and into the future. The charts have four key features:

- To the left of the first vertical dashed line, the centre of the darkest band of the fan chart gives the Committee's best collective judgement of the most likely path for GDP growth once the revisions process is complete. The estimate is based on an analysis of business surveys and the past pattern of official data revisions. Further details of the methods used are given in the references shown in the footnote.
- The fan around this path captures the degree of uncertainty about that central estimate, and can be interpreted in the same way as the other fan charts in this section. The width of the fan — which covers 90% of the distribution — is calibrated using historical information on the scale of official data revisions. The fan becomes progressively narrower the further back in time one goes, reflecting the decreased incidence of revisions for more distant periods. As with the projection for the future, the distribution underpinning the fan for the back data is subject to MPC judgement.
- The current vintage of official GDP data is shown by the solid black line. The most likely path for the mature data lies above the current vintage in the most recent period, suggesting that it is more likely than not that recent official estimates will ultimately be revised upwards. But the degree of uncertainty is considerable — indeed there is also a significant chance that growth could eventually be revised downwards.
- The MPC's projection for GDP growth, shown to the right of the first vertical dashed line, is constructed broadly as before. But the four-quarter growth rates in the first year of the projection are now expressed relative to the MPC's best collective judgement of the most likely path for the mature data for GDP growth, rather than the current vintage of official data. That has two consequences. First, care is needed when comparing the projection to early official data releases, or to other forecasts expressed in terms of the official data. And, second, the fan is now a little narrower at the start of the projection, consistent with the fact that the central estimate of mature GDP growth — against which the four-quarter growth rates at the start of the projection are now expressed — should be less prone to revision than the current vintage of data.

The fan charts for CPI inflation shown in **Charts 5.3** and **5.5** continue to use the official data to describe the past. That is because CPI inflation is rarely revised. The implications of uncertainty about past GDP for the inflation outlook will nevertheless be captured in the fan around the CPI projection.

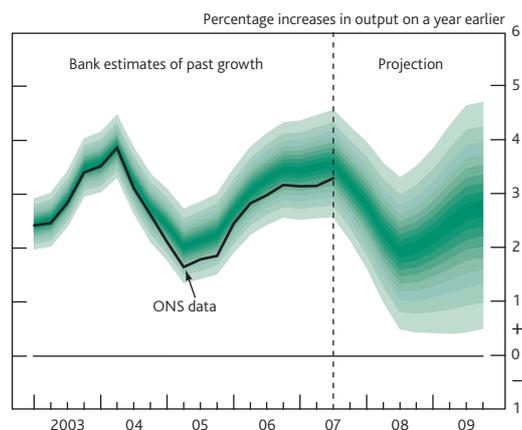
The Bank will continue to refine its approach to data uncertainty. The ONS has an ongoing programme of improvements to the methods used to measure GDP, and it will be important to reflect these as they come on stream. The Bank's methods will also be assessed in the light of their ability to predict future GDP revisions.

(1) See the box on pages 48–49 of the May 2002 *Inflation Report* for a fuller description of the projection fan chart and what it represents.

(2) An alternative projection showing Bank estimates of past GDP growth was illustrated on page 36 of the *August Report*.

(3) Further information is available in Cunningham, A and Jeffery, C (2007), 'Extracting a better signal from uncertain data', *Bank of England Quarterly Bulletin*, Vol. 47, No. 3, pages 364–75; and 'Risk, uncertainty and monetary policy', a speech given by Charles Bean on 31 October, and available at [www.bankofengland.co.uk/publications/speeches/2007/speech327.pdf](http://www.bankofengland.co.uk/publications/speeches/2007/speech327.pdf).

**Chart 5.2** GDP projection based on constant nominal interest rates at 5.75%

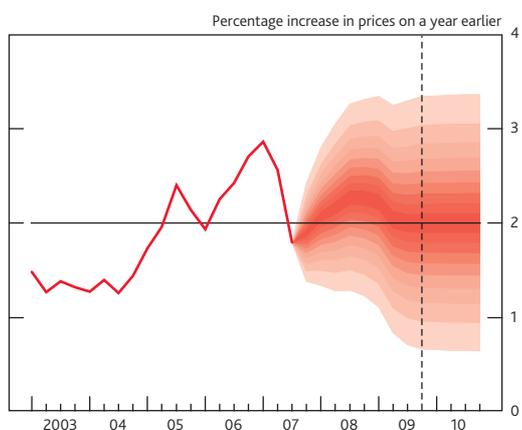


See footnote to Chart 5.1.

turbulence, together with the ongoing impact of past increases in Bank Rate. Further out, however, GDP growth picks up again, reflecting the decline in official interest rates anticipated by market participants, the lower level of sterling and a waning in some of the shorter-term effects of the financial turbulence. The level of output at the end of the forecast period is broadly similar to that in the *August Report*, in part reflecting the fall in market expectations of Bank Rate over the quarter. **Chart 5.2** shows the GDP projection under the alternative assumption of a constant Bank Rate.<sup>(1)</sup> The balance of risks is judged to be on the downside, and increasing somewhat over time, reflecting the possibility of more severe fallout from the current financial turbulence, and the vulnerability of markets to further shocks. The fan chart around the projection also widens out more rapidly than it did in the *August Report*, reflecting the increased uncertainties about future market developments. The factors shaping the GDP projection are discussed in more detail in Section 5.2.

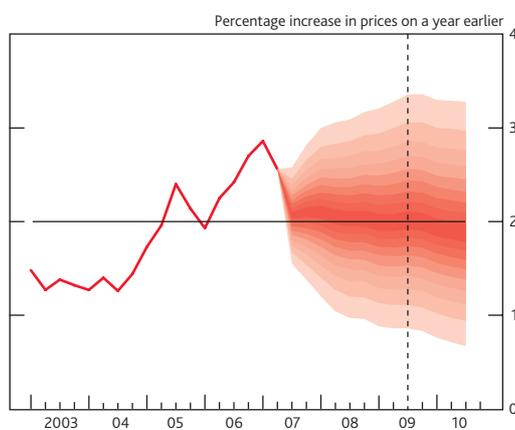
The outlook for CPI inflation is shown in **Chart 5.3**. In the central projection, inflation picks up over the first year, reflecting the impact of higher energy prices, a lower exchange rate, and the Committee's best collective judgement that the margin of spare capacity in the economy at the start of the forecast period is limited. Further out, inflation falls back as slower demand growth leads to an easing in capacity pressures, settling around the 2% target in the medium term. Inflation is expected to be somewhat higher next year than it was in the *August Report* (**Chart 5.4**). The risks around the projection are judged to be balanced, as downside risks from financial market developments are offset by upside risks from higher energy and commodity prices, and from wages and inflation expectations. The CPI fan chart has been widened a

**Chart 5.3** CPI inflation projection based on market interest rate expectations



**Charts 5.3 and 5.4** The fan charts depict the probability of various outcomes for CPI inflation in the future. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that inflation over the subsequent three years would lie within the darkest central band on only 10 of those occasions. The fan charts are constructed so that outcomes of inflation are also expected to lie within each pair of the lighter red areas on 10 occasions. Consequently, inflation is expected to lie somewhere within the entire fan charts on 90 out of 100 occasions. The bands widen as the time horizon is extended, indicating the increasing uncertainty about outcomes. See the box on pages 48–49 of the May 2002 *Inflation Report* for a fuller description of the fan chart and what it represents. The dashed lines are drawn at the respective two-year points.

**Chart 5.4** CPI inflation projection in August based on market interest rate expectations



(1) For an explanation of why constant rate projections are only shown for a two-year period, see the box on pages 42–43 of the August 2004 *Report*.

## Financial and energy market assumptions

The projections for GDP growth and CPI inflation described in **Charts 5.1** and **5.3** are conditioned on a path for official interest rates implied by market yields (**Table 1**). That path provides a convenient benchmark assumption on which to condition the MPC's projections, and is usually estimated from instruments that settle on the London interbank offered rate (Libor). But the disruption in financial markets since early August has been associated with significant increases in Libor rates relative to Bank Rate at shorter maturities. As a result, the approach used to estimate market expectations has been changed for this *Report*. Details are given in the box on page 12.

**Table 1** Expectations of Bank Rate implied by market yields<sup>(a)</sup>

Per cent	2007		2008				2009				2010			
	Q4 <sup>(b)</sup>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
November	5.7	5.5	5.4	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.1	5.1	5.1	
August	5.9	6.0	6.0	5.9	5.9	5.9	5.9	5.9	5.9	5.8	5.8	5.8	5.8	

(a) The data for November are fifteen working day averages of one-day forward rates to 7 November 2007. They have been derived from general collateral (GC) gilt repo rates at maturities up to a year and instruments that settle on Libor (including futures, swaps, interbank loans and forward rate agreements) further out, adjusted for credit risk. The data for August are five working day averages of one-day forward rates to 1 August 2007, and were derived exclusively from instruments that settle on Libor, adjusted for credit risk.

(b) November figure for 2007 Q4 is an average of realised spot rates to 7 November, and forward rates thereafter.

Using this alternative approach, the market yield curve implied that financial market participants expected Bank Rate to fall back from current levels over the forecast period. The expected path is significantly lower than in August. But uncertainty about future short-term market interest rates has risen — though how much this reflects uncertainty about future Bank Rate and how much it reflects uncertainty about future market conditions is unclear (see Section 1).

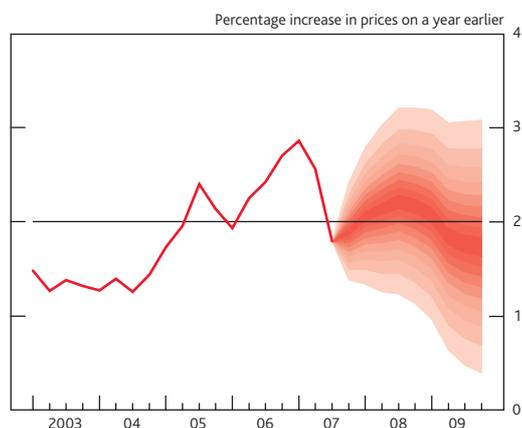
The starting point for the sterling exchange rate index (ERI) in the MPC's projections was 102.6, the average for the fifteen working days to 7 November. That was 2.4% below the starting point for the August forecast. Under the MPC's usual convention,<sup>(1)</sup> the exchange rate is assumed to depreciate to 101.0 by 2009 Q4, and is lower throughout the forecast period than assumed in August.

The starting point for UK equity prices in the MPC's projections was 3371 — the average of the FTSE All-Share for the fifteen working days to 7 November. That was 4.2% above the starting point for the August projection. In the long run, equity wealth is assumed to grow in line with nominal GDP; in the short run, it also reflects changes in the share of profits in GDP.

Energy prices are assumed to evolve broadly in line with the paths implied by futures markets, which have risen sharply. Average Brent oil futures prices for the period to end-2009 were 13% higher (in US dollar terms) than at the time of the *August Report*, and wholesale gas futures prices were 19% higher. There remains considerable uncertainty about the scale and pace of pass-through of developments in wholesale markets to the prices of gas and electricity faced by households and companies. The *August Report* assumed that retail prices would be cut again over the winter, given the sharp reduction in futures prices for wholesale gas during late 2006 and early 2007. But, in the absence of further announcements, and in view of the recent upwards movement in futures prices, it is now thought more likely that retail prices will rise over time, rather than fall.

(1) See the box 'The exchange rate in forecasting and policy analysis', on page 48 of the November 1999 *Inflation Report*.

**Chart 5.5** CPI inflation projection based on constant nominal interest rates at 5.75%



See footnote to Charts 5.3 and 5.4.

little towards the end of the forecast period, reflecting the heightened uncertainties over demand prospects. The factors shaping the CPI projection are discussed in greater detail in Section 5.3. The projection under constant interest rates is shown in **Chart 5.5**.

## 5.2 Risks to demand

### How sharply will credit conditions tighten?

Private sector credit conditions have already tightened for some classes of borrower, and lenders expect conditions to tighten further in the near term (Section 1). With markets remaining vulnerable to further shocks, and only limited evidence so far on the reaction of lenders, households and companies, the medium-term impact of these developments remains highly uncertain.

The financial market turbulence is likely to affect UK demand and inflation through a number of channels, including the price and availability of credit, asset prices, increased uncertainty and world growth. In the central projection, the current elevation of risk premia in the money markets is assumed to unwind over time, though it raises borrowing costs sharply for some companies for a period. Over the medium term, the average premium over Bank Rate for lending to households and businesses is assumed to rise by about  $\frac{1}{4}$  of a percentage point relative to its pre-turbulence levels, partially unwinding the narrowing in spreads seen in recent years, as the pricing of risk is re-evaluated. The assumed tightening is relatively modest, in part because it is an average: interest rates for riskier companies and households are likely to rise by more than those for lower-risk borrowers (Sections 1 and 2). But it also reflects an assumption that part of the earlier fall in spreads will persist, reflecting a more lasting improvement in risk pricing techniques, a more stable macroeconomic environment and stronger company finances.

The balance of risks around this central case is on the downside. First, the global financial system remains vulnerable to further shocks. Second, even without further shocks, the price and availability of credit may tighten by more than assumed in the central projection, as current uncertainties about the valuation and location of lenders' exposures are resolved. And, third, any significant decline in asset prices could materially weaken household and corporate balance sheets, and the associated collateral provided to lenders.

### **How big are the global risks from a slowdown in the United States?**

Growth prospects in the United States have weakened further in recent months (Section 2). Tighter credit conditions are likely to put additional downward pressure on the housing market and residential investment, and act as a drag on household consumption and corporate investment. Tougher credit terms and weaker US demand will also bear down on growth in other parts of the developed world, including the euro area, the United Kingdom's biggest trading partner. But with monetary policy having become more accommodative in the United States, and activity in China and other emerging markets so far largely shielded from the financial market fallout, the most likely outlook for UK-weighted world growth remains that of a gradual slowdown from the strong rate of expansion seen in 2004–06, rather than a sharp retrenchment. The profile assumed in the central projection is a little weaker than in the *August Report*. But with sterling also somewhat lower on a trade-weighted basis, net trade makes a broadly neutral contribution to UK growth over the forecast period.

The balance of risks to world growth is on the downside. The slowdown in the US housing market may start to bear more heavily on other parts of the US economy, or spread elsewhere, including to countries in Asia and elsewhere that have so far

been relatively immune. Renewed financial market turbulence could lead to a further tightening in credit conditions, a decline in global equity and other asset prices, or a broader realignment of exchange rates, in particular an accelerated decline in the dollar. These scenarios pose downside risks to UK activity and inflation, though the precise impact would depend on the nature of the shock. On the upside, however, output in China and other emerging markets has repeatedly exceeded expectations, and may continue to do so in the near term.

### How much will household spending slow?

UK consumer spending growth has picked up since the start of 2006, as households have reduced their rates of saving and increased borrowing to compensate for subdued real income growth. That process is expected to reverse in the near term. In the first year of the central projection, consumption growth falls below its average of the past decade as the expectation of persistently higher average interest rates following the financial market turbulence causes households to increase their savings. That effect is amplified by the lagged response to past increases in Bank Rate, some effect from lower house price inflation — which is assumed to ease back a little more than in the *August Report* — and a desire for higher precautionary saving to guard against heightened uncertainty about future prospects. Consumption growth recovers from the second year of the projection as Bank Rate is assumed to fall back and savings approach their desired levels. Spending is also supported by an anticipated return of real household income growth to around its post-1997 average as effective tax rates stabilise somewhat and real take-home pay grows at a rate above that of the past three years (see Section 5.3). But, on average, consumption growth over the forecast period is a little weaker than in the *August Report*.

High street spending in volume terms has been strong over the past year. It is possible that this momentum may continue into the early part of the projection, particularly if consumer confidence holds up. That would pose an upside risk to activity. But there are also risks on the downside from a tightening in the availability of credit and possible falls in asset prices.

### How will tighter credit conditions affect investment?

Tighter credit conditions are likely to weigh on the outlook for investment spending. Financial conditions for those businesses most exposed to the recent turbulence, such as those in the financial sector and those with high levels of leverage, have deteriorated. By contrast, many larger businesses — who carry out the lion's share of corporate investment — have seen less change in their effective cost of capital so far, buoyed by strong internal finances and access to alternative sources of external finance, such as equity and longer-term investment-grade bonds, whose terms have remained relatively favourable (Sections 1 and 2). Lenders

nevertheless anticipate further tightening in corporate borrowing terms. And the potential impact of tighter credit on demand conditions and asset valuations poses further threats to the outlook — especially in the residential and commercial property sectors, where the Bank's recent *Financial Stability Report* identified particular vulnerabilities.

In the central projection, business investment growth falls back in the first year of the forecast period as tighter credit terms and increased uncertainty about demand prospects cause companies to postpone or cancel investment projects. And dwellings investment falls, consistent with somewhat weaker conditions in property markets. Further out, however, growth in both business and dwellings investment picks up again as Bank Rate is assumed to ease, demand growth recovers and uncertainties over credit conditions recede. The decline in private sector investment growth is a little steeper than in the *August Report*, but there is also a somewhat stronger rebound. The balance of risks to investment is on the downside. Tighter credit terms, weaker demand or falling asset prices could materially worsen the outlook — particularly in the commercial and residential property sectors.

### 5.3 Risks to CPI inflation

#### Could import and energy price inflation pick up even if global activity slows?

The *August Report* identified higher imported inflation as an upside risk to the CPI projection. Since then, oil and food prices have risen further, increasing cost pressures for producers and consumers, and sterling has depreciated in trade-weighted terms. Inflation rates for goods exported by the United Kingdom's major trading partners are still expected to ease back over the forecast period as growth in those countries slows. But demand for many key commodities has been driven by developing countries, which have so far remained relatively insulated from the financial market turbulence (see the box on page 34). With oil prices assumed to remain high, in line with the futures curve, and the exchange rate assumed to follow a gentle downward path, the central projection is for a modest but steady increase in sterling import prices over the forecast period, at a slightly faster pace than in the *August Report*. The outlook for retail gas and electricity prices has also risen since the *August Report* following sharp increases in futures prices (see the box on page 41).

There are risks on both sides of this projection. On the upside, tighter supply constraints, or an acceleration of growth in emerging Asia could put further upwards pressure on energy and other commodity prices, particularly in the early part of the projection. And the price rises seen so far could have a bigger impact on UK inflation, for example if they feed through into higher inflation expectations. But on the downside, a

sharper world slowdown or a more rapid increase in supply capacity could see energy and import price inflation fall back.

### What are the prospects for wage pressures?

Real take-home pay has fallen sharply relative to productivity in recent years as nominal wage inflation has been subdued in the face of higher consumer price inflation (Section 4). It is difficult to judge how much of the weaker growth in real wages reflects looser labour market conditions — for example as a result of the pickup in net inward migration — and how much reflects a necessary adjustment to past rises in energy and other non-wage costs. If looser labour market conditions have been the main driver, and these conditions persist, then the outlook for real wages is likely to remain subdued. But if past weakness in real wages reflected a response to higher non-wage costs, then real wage growth may recover somewhat once that adjustment is complete. As discussed in Section 4, adjustment to the sharp rise in non-wage costs in 2004–06 appears to have come to an end, although the recent pickup in oil and other commodity prices may imply some further adjustment.

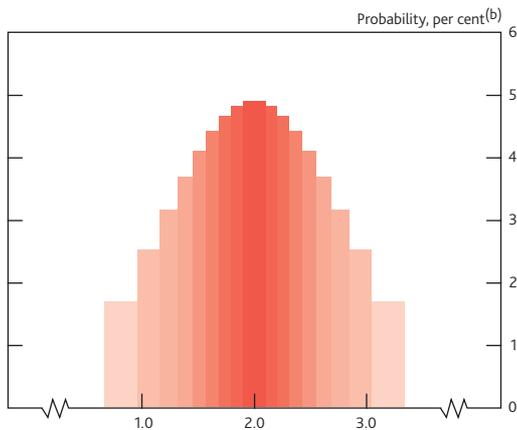
The projection places some weight on each interpretation of the past. In the central case, real take-home pay growth remains well contained, but grows more rapidly than it has over the past three years, helping to support household incomes. The outlook for growth in real take-home pay is nevertheless slightly weaker than in the *August Report*, consistent with renewed pressure on non-wage costs. The outlook for nominal wage inflation remains broadly steady.

There are risks on both sides of this central projection. Indeed, different indicators suggest uncertainty about current rates of wage inflation: pay growth appears subdued according to the average earnings index, but rather higher according to the experimental average weekly earnings measure. Looking ahead, on the upside, employees may seek to resist reductions in real earnings growth. But on the downside, wage pressures could be weaker if the pickup in unemployment since 2005 proves to have been primarily cyclical, or if the labour market loosens — for example as the result of slower output growth or higher rates of inward migration.

### Will slower demand growth reduce companies' pricing intentions?

A sustained period of above-average GDP growth, coupled with the legacy of subdued business investment earlier in the decade, has left capacity pressures within companies somewhat above recent historical averages, though some business surveys suggest these may have begun to ease in the most recent period (Section 3). Heightened pressures on capacity tend to put upward pressure on prices; and realised output price inflation and survey measures of companies' pricing intentions have indeed remained above their averages of the past decade (Section 4). An alternative explanation for

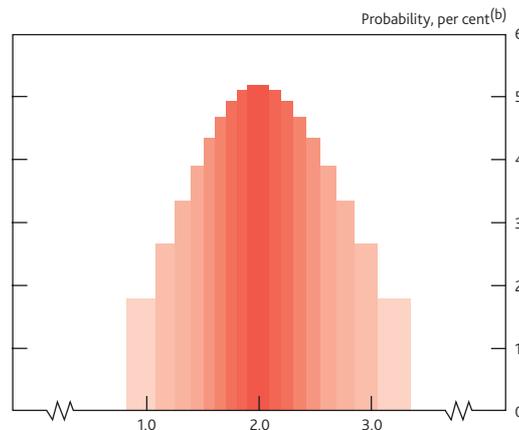
**Chart 5.6** Projected probabilities of CPI inflation outturns in 2009 Q4 (central 90% of the distribution)<sup>(a)</sup>



(a) **Chart 5.6** represents a cross-section of the CPI inflation fan chart in 2009 Q4 for the market interest rate projection. The coloured bands have a similar interpretation to those on the fan charts. Like the fan charts, they portray the central 90% of the probability distribution. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that inflation in 2009 Q4 would lie somewhere within the range covered by the histogram on 90 occasions. Inflation would lie outside the range covered by the histogram on 10 out of 100 occasions. **Chart 5.7** shows the corresponding cross-section of the August *Inflation Report* fan chart.

(b) Average probability within each band. The figures on the y-axis indicate the probability of inflation being within  $\pm 0.05$  percentage points of any given inflation rate, specified to one decimal place.

**Chart 5.7** Projected probabilities in August of CPI inflation outturns in 2009 Q4 (central 90% of the distribution)<sup>(a)</sup>



elevated pricing intentions could be that companies' expectations of future inflation have picked up. Surveys of households' inflation expectations remain elevated, despite the decline in CPI inflation (Section 4).

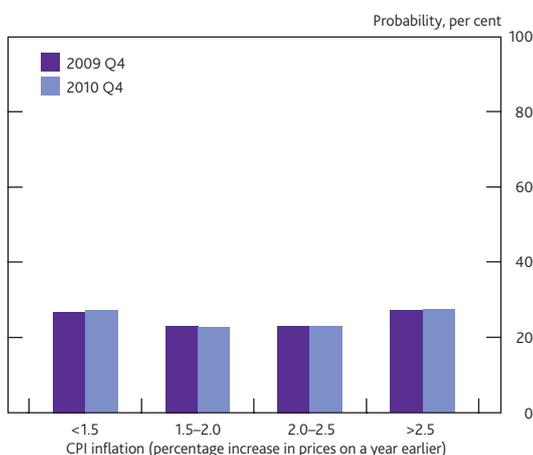
In the central projection, slower demand growth is assumed to reduce capacity pressures over the forecast period, helping to reduce the pressure on prices in the later part of the projection. Inflation expectations are assumed to be well anchored to the target in the medium term. But there are risks on both sides of this central case. On the downside, capacity pressures may be somewhat lower. But on the upside, inflation expectations may be more persistently elevated, or rise further if inflation rebounds.

### 5.4 The balance of risks

Taking the factors discussed in Sections 5.2 and 5.3 together, the risks around the outlook for GDP growth are judged to be on the downside, but the risks to inflation are judged to be balanced. Further financial market fallout, either at home or overseas, poses the biggest downside risk to activity. But the impact of that risk on inflation needs to be weighed against the upside risks from higher energy and commodity prices, and from wages and inflation expectations. The most likely spread of outcomes is shown in **Charts 5.6 to 5.9**, but there is a range of views among the Committee on both the central projection and the balance of risks.

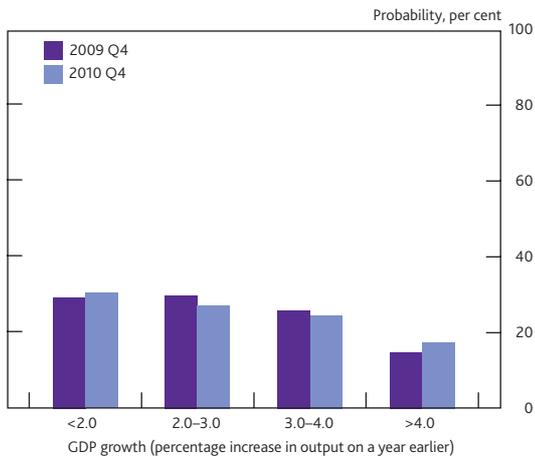
The Committee will be monitoring a range of data to assess whether these risks are crystallising. First, with the central projection embodying a tightening in credit conditions and a slowing in domestic demand, key indicators are: the price and quantity of credit; asset prices (including residential and commercial property prices); and timely indicators of

**Chart 5.8** Frequency distribution of CPI inflation based on market interest rate expectations<sup>(a)</sup>



(a) These figures are derived from the same distribution as **Chart 5.3**. They represent the probabilities that the MPC assigns to CPI inflation lying within a particular range at a specified time in the future.

**Chart 5.9** Frequency distribution of GDP growth based on market interest rate expectations<sup>(a)</sup>



(a) These figures are derived from the same distribution as Chart 5.1. They represent the probabilities that the MPC assigns to GDP growth lying within a particular range at a specified time in future.

consumption and investment spending. Second, with world growth expected to ease back but commodity prices to remain elevated, the key indicators relate to: potential spillovers from the US housing slowdown; the extent to which stronger growth in Asia and elsewhere compensates for US weakness; and developments in commodity and other world prices. Third, with CPI inflation projected to pick up over the next year, the key indicators of the extent to which this is becoming embedded in inflation expectations will be: surveys of household inflation expectations and companies' pricing intentions; and data on wages and earnings.

## 5.5 The policy decision

At its November meeting, the Committee noted that the central projection, under the assumption that Bank Rate followed a declining path implied by market yields, was for GDP growth to slow and then recover and for CPI inflation to rise above the 2% target in the short term and then ease back to settle around it. The Committee also noted that there were considerable uncertainties relating both to the impact of recent developments in financial markets and to the consequences of the recent rise in energy prices. Bearing in mind these risks, the Committee judged at its November meeting that it was appropriate to leave Bank Rate unchanged in order to meet the target for CPI inflation over the medium term.

## Other forecasters' expectations

Every three months, the Bank asks a sample of external forecasters for their latest economic projections. In the most recent survey, carried out in late October, the average central projection was for CPI inflation to remain at around the target (Table 1). That was similar to the average central expectation reported in the previous survey.

**Table 1** Averages of other forecasters' central projections<sup>(a)</sup>

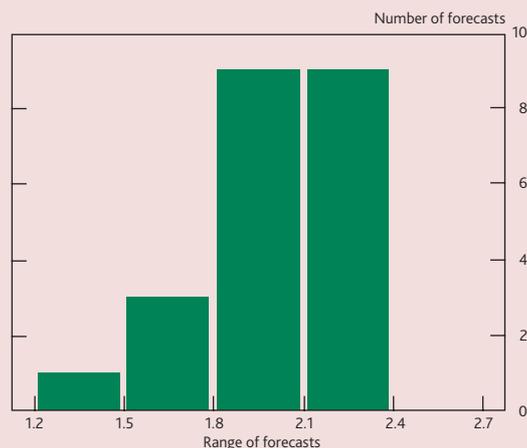
	2008 Q4	2009 Q4	2010 Q4
CPI inflation <sup>(b)</sup>	2.0	2.0	2.0
GDP growth <sup>(c)</sup>	1.9	2.4	2.6
Bank Rate (per cent)	5.3	5.2	5.2
Sterling ERI <sup>(d)</sup>	101.3	100.2	99.8

Source: Projections of outside forecasters as of 26 October 2007.

- (a) For 2008 Q4, there were 22 forecasts for CPI inflation, GDP growth and Bank Rate, and 19 for the sterling ERI. For 2009 Q4, there were 19 forecasts for CPI inflation, GDP growth and Bank Rate, and 17 for the sterling ERI. For 2010 Q4, there were 18 forecasts for CPI inflation, GDP growth and Bank Rate, and 16 for the sterling ERI.  
 (b) Twelve-month rate.  
 (c) Four-quarter percentage change.  
 (d) Where necessary, responses were adjusted to take account of the difference between the old and new ERI measures, based on comparative outturns for 2006 Q1.

For GDP, the average central projection for four-quarter growth was 1.9% in 2008 Q4, rising to 2.4% in 2009 Q4, and 2.6% in 2010 Q4. That was weaker in the near term than three months previously, but similar in the medium term. For 2008 Q4, the central projections of forecasters responding to the survey all lay below 2.4% (Chart A).

**Chart A** Distribution of GDP growth central projections for 2008 Q4



Source: Four-quarter GDP growth projections of 22 outside forecasters as of 26 October 2007.

The Bank also asks forecasters for an assessment of the risks surrounding their central projections (Table 2). For CPI inflation, those risks were judged to be broadly balanced around the 2% target in the medium term. For GDP, forecasters on average judged there to be a greater risk of growth being below 2% than above in the near term. But in

the medium term, forecasters judged that GDP growth was more likely to be above 2% than below.

**Table 2** Other forecasters' probability distributions for CPI inflation and GDP growth<sup>(a)</sup>

CPI inflation Probability, per cent	Range:					
	<1%	1–1.5%	1.5–2%	2–2.5%	2.5–3%	>3%
2008 Q4	5	13	33	31	13	4
2009 Q4	7	15	30	29	14	6
2010 Q4	8	14	28	29	15	6

GDP growth Probability, per cent	Range:			
	<1%	1–2%	2–3%	>3%
2008 Q4	12	42	38	8
2009 Q4	9	30	41	19
2010 Q4	9	24	40	26

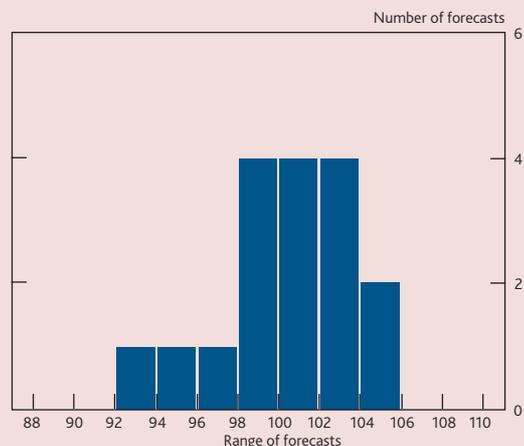
Source: Projections of outside forecasters as of 26 October 2007.

- (a) For 2008 Q4, 22 forecasters provided the Bank with their assessment of the likelihood of twelve-month CPI inflation and four-quarter GDP growth falling in the ranges shown above; for 2009 Q4, 19 forecasters provided assessments; for 2010 Q4, 18 provided assessments. The table shows the average probabilities across respondents. Rows may not sum to 100 due to rounding.

External forecasters are also asked about their central expectations for Bank Rate and the sterling ERI. For 2008 Q4, the average central expectation for Bank Rate was lower than three months previously, although there was little change in the average expectation further out. Overall, the average central expectation for Bank Rate was similar to the path implied by market yields (see the box on page 41).

On average, external forecasters expected the sterling ERI to depreciate. The distribution of average expectations two years ahead (Chart B) was narrower than in the previous survey.

**Chart B** Distribution of sterling ERI central projections for 2009 Q4



Source: Projections of 17 outside forecasters as of 26 October 2007. Where necessary, the responses were adjusted to take account of the difference between the old and new ERI measures, based on comparative outturns for 2006 Q1.

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## **Text of Bank of England press notice of 6 September 2007**

### **Bank of England maintains Bank Rate at 5.75%**

The Bank of England's Monetary Policy Committee today voted to maintain the official Bank Rate paid on commercial bank reserves at 5.75%.

In its August *Inflation Report*, the Committee's central projection was for inflation to remain close to the 2% target over the forecast period and for output growth to ease, reflecting a slowing in both consumer spending and business investment.

In recent weeks, heightened concerns about a variety of asset-backed securities have led to disruption around the world, not only in markets for those financial instruments but also in money markets more generally. The MPC's mandate is to set interest rates to meet the Government's 2% target for CPI inflation. So the Committee discussed these developments and other economic data in terms of their implications for the outlook for inflation.

CPI inflation fell back to 1.9% in July and may remain around, or a little below, the 2% target for the next few months. Pay pressures remain muted. There are tentative signs of a slowing in consumer spending. But the recent solid pace of output growth has been sustained and the margin of spare capacity appears limited. Indicators of pricing pressure remain somewhat elevated.

It is too soon to tell how far the disruption in financial markets will impair the availability of credit to companies and households. As stated in its August *Report*, the MPC is monitoring closely the evolution of both credit spreads and the quantities of credit extended, alongside all other data relevant to the outlook for inflation.

Against that background, the Committee judged that no change in Bank Rate was necessary at this meeting to keep inflation on track to meet the target in the medium term.

The minutes of the meeting will be published at 9.30 am on Wednesday 19 September.

## **Text of Bank of England press notice of 4 October 2007**

### **Bank of England maintains Bank Rate at 5.75%**

The Bank of England's Monetary Policy Committee today voted to maintain the official Bank Rate paid on commercial bank reserves at 5.75%.

The minutes of the meeting will be published at 9.30 am on Wednesday 17 October.

## **Text of Bank of England press notice of 8 November 2007**

### **Bank of England maintains Bank Rate at 5.75%**

The Bank of England's Monetary Policy Committee today voted to maintain the official Bank Rate paid on commercial bank reserves at 5.75%.

The Committee's latest inflation and output projections will appear in the *Inflation Report* to be published on Wednesday 14 November.

The minutes of the meeting will be published at 9.30 am on Wednesday 21 November.

# Glossary and other information

## Glossary of selected data and instruments

**AEI** – average earnings index.

**AWE** – average weekly earnings.

**CPI** – consumer prices index.

**CPI inflation** – inflation measured by the consumer prices index.

**ERI** – exchange rate index.

**GC** – general collateral.

**GDP** – gross domestic product.

**LFS** – Labour Force Survey.

**Libor** – London interbank offered rate.

**M4** – UK non-bank, non-building society private sector's holdings of sterling notes and coin, and their sterling deposits (including certificates of deposit, holdings of commercial paper and other short-term instruments and claims arising from repos) held at UK banks and building societies.

**PPP** – purchasing power parity.

**SVR** – standard variable rate.

## Abbreviations

**A8 Accession countries** – the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.

**BCC** – British Chambers of Commerce.

**BHPS** – British Household Panel Survey.

**CBI** – Confederation of British Industry.

**CCC** – County Court Judgement.

**CIPS** – Chartered Institute of Purchasing and Supply.

**ECB** – European Central Bank.

**EIA** – Energy Information Administration.

**FOMC** – Federal Open Market Committee.

**FSA** – Financial Services Authority.

**FTSE** – Financial Times Stock Exchange.

**GfK** – Gesellschaft für Konsumforschung, Great Britain Ltd.

**HBF** – Home Builders Federation.

**IEA** – International Energy Agency.

**IMF** – International Monetary Fund.

**IPS** – International Passenger Survey.

**IVA** – individual voluntary arrangement.

**LTCM** – Long Term Capital Management.

**MPC** – Monetary Policy Committee.

**MTIC** – missing trader intra-community.

**OECD** – Organisation for Economic Co-operation and Development.

**OFCs** – other financial corporations.

**ONS** – Office for National Statistics.

**PNFCs** – private non-financial corporations.

**PwC** – PriceWaterhouseCoopers.

**RICS** – Royal Institution of Chartered Surveyors.

**S&P** – Standard and Poor's.

**USDA** – US Department of Agriculture.

## Symbols and conventions

Except where otherwise stated, the source of the data used in charts and tables is the Bank of England or the Office for National Statistics (ONS) and all data, apart from financial markets data, are seasonally adjusted.

n.a. = not available.

Because of rounding, the sum of the separate items may sometimes differ from the total shown.

On the horizontal axes of graphs, larger ticks denote the first observation within the relevant period, eg data for the first quarter of the year.



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