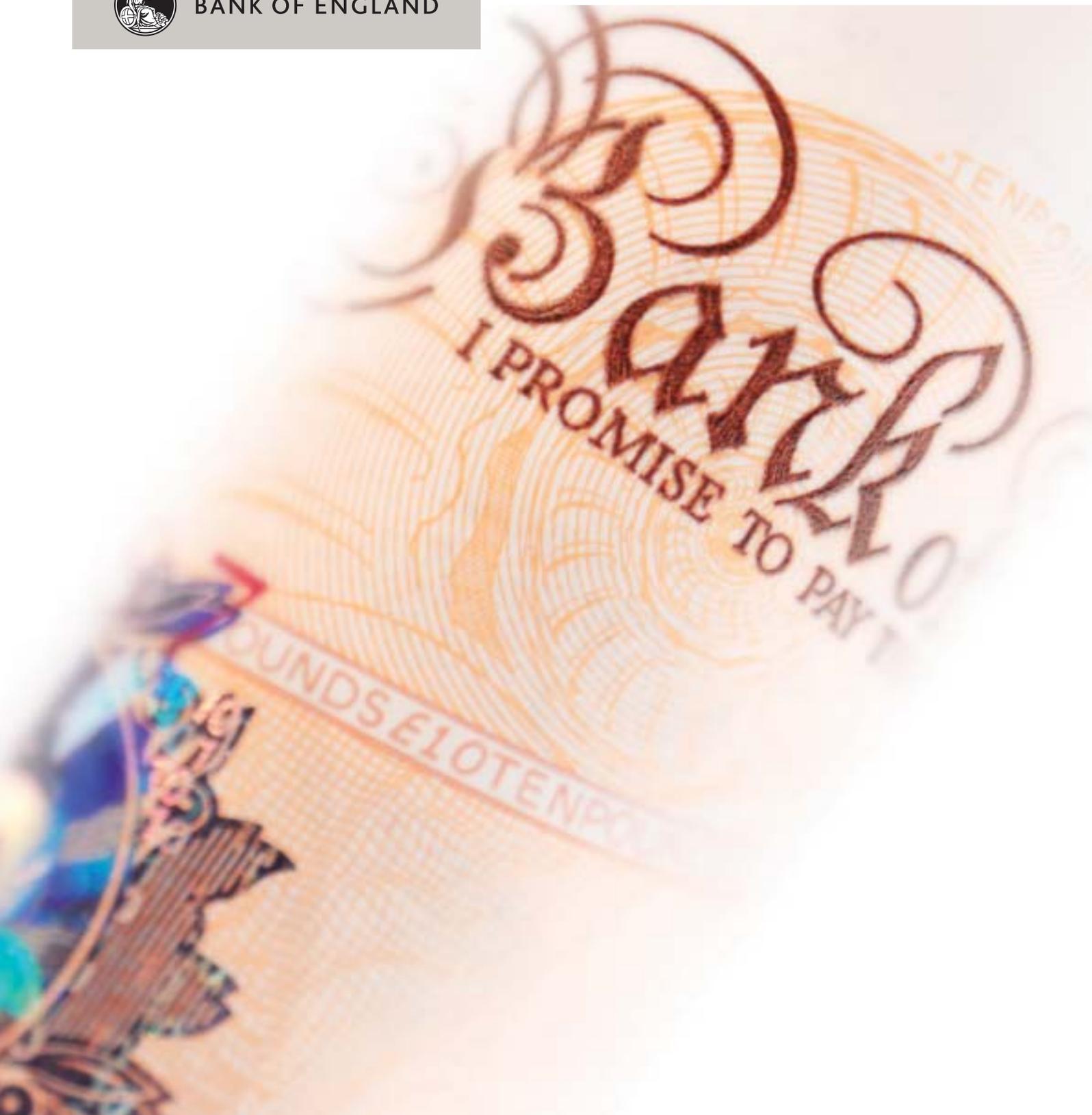


# Inflation Report

November 2012



BANK OF ENGLAND







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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.

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Charles Bean, Deputy Governor responsible for monetary policy

Paul Tucker, Deputy Governor responsible for financial stability

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

The entire *Report* is available in PDF at [www.bankofengland.co.uk/publications/Pages/inflationreport/ir1204.aspx](http://www.bankofengland.co.uk/publications/Pages/inflationreport/ir1204.aspx).

PowerPoint™ versions of the charts in this *Report* and the data underlying most of the charts are provided at [www.bankofengland.co.uk/publications/Pages/inflationreport/ir1204.aspx](http://www.bankofengland.co.uk/publications/Pages/inflationreport/ir1204.aspx).



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# Overview

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The UK economy has barely grown over the past two years, as it has laboured against the consequences of the financial crisis and its impact on global demand, a sharp squeeze in domestic spending power and a necessary fiscal consolidation. The period of weak demand has been accompanied by stagnant productivity, raising questions about the extent to which the supply capacity of the economy has expanded. Increases in energy and other import prices and in VAT have meant that CPI inflation has been well above its 2% target for much of this period.

The future path of GDP will depend critically on developments in the global environment, with strains in the euro area posing the greatest risk to a sustained recovery. The strength of the recovery will also depend on the vigour of any revival in productivity growth. The likelihood that demand and supply capacity will continue to move together, as they appear to have done over the recent past, means that some of the sources of uncertainty affecting the outlook for GDP have limited implications for inflation in the medium term.

The medium-term outlook for inflation is little changed from three months ago. Under the assumption that Bank Rate follows a path implied by market interest rates and the size of the asset purchase programme remains at £375 billion, the Committee's best collective judgement is for a sustained, but slow, recovery as some of the headwinds holding back output in recent years dissipate. Inflation in the near term is expected to be higher than thought likely in August, but further out the risks to inflation around the 2% target are judged to be broadly balanced.

## Financial and credit markets

Since the August *Inflation Report*, the MPC has maintained the size of its asset purchase programme at £375 billion and the level of Bank Rate at 0.5%. Anticipation and subsequent announcement of the European Central Bank's (ECB's) willingness to purchase the short-term debt of euro-area governments triggered a fall in Spanish and Italian sovereign debt yields. More generally, policy announcements by both the ECB and the Federal Open Market Committee boosted equity and corporate debt prices in the advanced economies, including the United Kingdom.

UK banks' funding costs have fallen sharply, aided by improved sentiment in global financial markets and access to the Funding for Lending Scheme (FLS). Lower funding costs should facilitate a gradual easing in domestic credit conditions, although it may be some time before this affects the flow of lending, which has remained weak. Broad money has grown solidly, supported by the recent round of asset purchases.

## Demand and supply

Growth in global demand remained subdued, although policymakers in a number of countries have responded with new policy initiatives. While sterling has been broadly stable since the middle of 2012, strains within the euro area contributed to a gradual appreciation of sterling earlier in the year. This has made it harder for UK-based companies to compete in world markets.

At home, output has barely grown over the past two years. Spending by both households and businesses remains substantially below pre-crisis levels. This weakness in demand has been accompanied by stagnant productivity, suggesting that growth in the effective capacity of the economy to supply goods and services in short order may have also been impaired. That might be because the growth of effective supply is in part determined by the strength of demand, for example if the level of demand affects the efficiency with which resources can be deployed. Or it might be because demand and effective supply have been adversely affected by the same factors, such as the sustained period of tight credit conditions.

GDP is estimated to have increased by 1% in Q3, although that strength was exaggerated by temporary factors. Headline growth is consequently likely to fall back sharply in Q4.

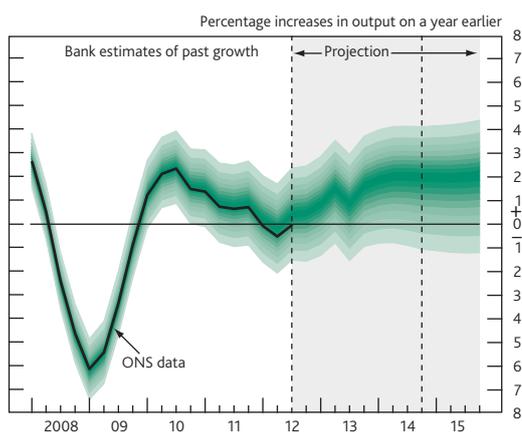
The Committee's projections are conditioned on the tax and spending plans set out in the 2012 March *Budget*. They also take account of the Government's decision to change its cash management operations so as to use the cash flow generated by the Asset Purchase Facility to pay down government debt. The use of those cash flows to pay down the stock of debt will have an effect similar to the MPC purchasing gilts of the same value.

## The outlook for GDP growth

Chart 1 shows the Committee's best collective judgement for four-quarter GDP growth, assuming that Bank Rate follows a path implied by market interest rates and the size of the asset purchase programme stays at £375 billion. Looking through the recent volatility, underlying growth is likely to remain sluggish in the near term. But further out growth is likely to pick up gently as some of the headwinds holding back demand in recent years abate. In particular, households' purchasing power should begin to strengthen if there is some revival in productivity growth and increases in commodity prices do not squeeze real incomes further. And the recent falls in UK bank funding costs, in part as a result of the FLS, should help to improve the supply of bank credit.

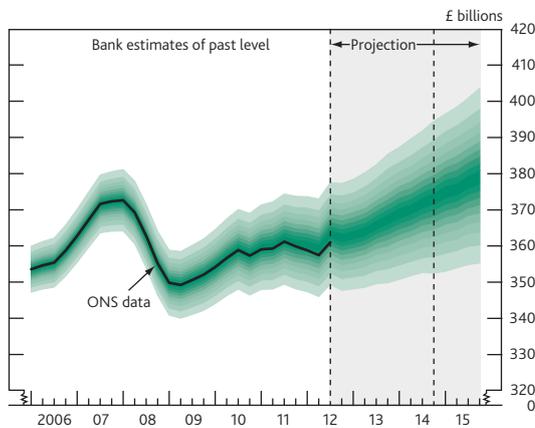
The outlook for UK growth remains uncertain. A major threat to a sustained recovery is if the adjustments in indebtedness and competitiveness required within the euro area occur in a

**Chart 1** GDP projection based on market interest rate expectations and £375 billion asset purchases



The fan chart depicts the probability of various outcomes for GDP growth. It has been conditioned on the assumption that the stock of purchased assets financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period. 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 growth 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 10 occasions. In any particular quarter of the forecast period, GDP growth is therefore expected to lie somewhere within the fan on 90 out of 100 occasions. And on the remaining 10 out of 100 occasions GDP growth can fall anywhere outside the green area of the fan chart. Over the forecast period, this has been depicted by the light grey background. In any quarter of the forecast period, the probability mass in each pair of identically coloured bands sums to 10%. The distribution of that 10% between the bands below and above the central projection varies according to the skew at each quarter, with the distribution given by the ratio of the width of the bands below the central projection to the bands above it. In Chart 1, the ratios of the probabilities in the lower bands to those in the upper bands are approximately 6:4 at Years 1, 2 and 3. See the box on page 39 of the November 2007 *Inflation Report* 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 2** Projection of the level of GDP based on market interest rate expectations and £375 billion asset purchases



Chained-volume measure (reference year 2009). See the footnote to **Chart 1** for details of the assumptions underlying the projection for GDP growth. The width of this fan over the past has been calibrated to be consistent with the four-quarter growth fan chart, under the assumption that revisions to quarterly growth are independent of the revisions to previous quarters. Over the forecast, the mean and modal paths for the level of GDP are consistent with **Chart 1**. So the skews for the level fan chart have been constructed from the skews in the four-quarter growth fan chart at the one, two and three-year horizons. This calibration also takes account of the likely path dependency of the economy, where, for example, it is judged that shocks to GDP growth in one quarter will continue to have some effect on GDP growth in successive quarters. This assumption of path dependency serves to widen the fan chart.

disorderly manner. As in previous *Reports*, the Committee's fan charts exclude these more extreme outcomes. But even if such extreme outcomes are avoided, the scale of the necessary adjustments means that a prolonged period of sluggish euro-area growth and heightened uncertainty is likely. This dampening effect is captured in the MPC's fan charts. More generally, the extent to which recent international policy actions will be successful in stimulating global demand, and with it demand for UK exports, is uncertain.

Domestically, some pickup in productivity growth seems likely, but its timing and strength cannot be assessed with any precision. The pace of the recovery will also depend on the extent to which the recent reductions in bank funding costs spur an increase in lending.

Taking those risks and uncertainties into account, and based on the assumptions described above, the Committee's best collective judgement is that the economy is likely to see a sustained, but slow, recovery over the next three years. The Committee attaches even less weight than in August to the possibility of a rapid pickup in growth. Indeed, GDP growth is more likely to be below than above its historical average rate over the entire forecast period. Output is more likely than not to remain below its pre-crisis level until towards the end of the forecast period (**Chart 2**).

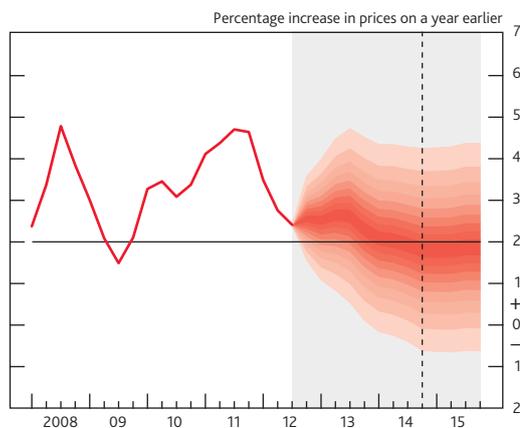
The subdued recovery partly reflects a judgement that the global environment, and especially the headwinds from the euro area, will remain unfavourable. In addition, the Committee judges that the recent period of flat output has been associated with sluggish growth in effective supply and that the supply capacity of the economy is likely to continue to expand slowly over the forecast period.

## Costs and prices

CPI inflation has fallen sharply over the past year, as past rises in energy and other import prices and in VAT have dropped out of the twelve-month comparison. More recently, inflation has picked up, in part as a result of increases in tuition fees. Oil prices are little changed compared with three months ago, as are food commodity prices. Measures of households' longer-term inflation expectations remain close to their series averages.

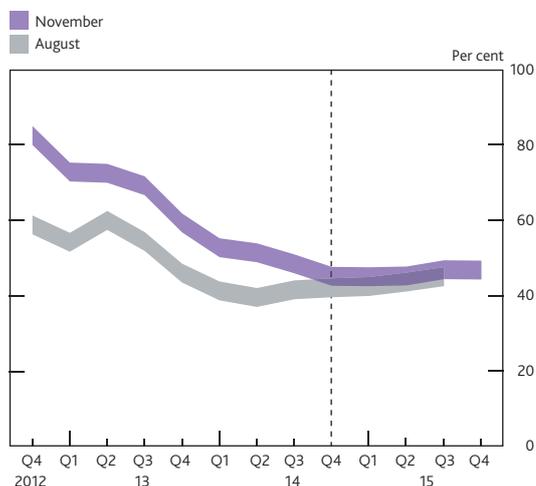
Private sector employment remains puzzlingly robust. Around a quarter of a million private sector jobs were added in 2012 Q2, taking the cumulative total of jobs created since the summer of 2010 to almost one million. Annual regular private sector pay growth remains subdued at around 2%, restrained in part by a sizable margin of slack in the labour market. Despite weak pay growth, the stagnation in productivity has meant that companies' unit labour costs have continued to increase at or above their average historical rate.

**Chart 3** CPI inflation projection based on market interest rate expectations and £375 billion asset purchases



The fan chart depicts the probability of various outcomes for CPI inflation in the future. It has been conditioned on the assumption that the stock of purchased assets financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that inflation in any particular quarter 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. In any particular quarter of the forecast period, inflation is therefore expected to lie somewhere within the fan on 90 out of 100 occasions. And on the remaining 10 out of 100 occasions inflation can fall anywhere outside the red area of the fan chart. Over the forecast period, this has been depicted by the light grey background. In any quarter of the forecast period, the probability mass in each pair of identically coloured bands sums to 10%. The distribution of that 10% between the bands below and above the central projection varies according to the skew at each quarter, with the distribution given by the ratio of the width of the bands below the central projection to the bands above it. In Chart 3, the probabilities in the upper bands are the same as those in the lower bands at Years 1, 2 and 3. 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.

**Chart 4** An indicator of the probability that inflation will be above the target



The November and August swathes in this chart are derived from the same distributions as Chart 3 and Chart 5.7 on page 41 respectively. They indicate the assessed probability of inflation being above target in each quarter of the forecast period. The 5 percentage points width of the swathes reflects the fact that there is uncertainty about the precise probability in any given quarter, but they should not be interpreted as confidence intervals. The dashed line is drawn at the two-year point of the November projection. The two-year point of the August projection was one quarter earlier.

## The outlook for inflation

Chart 3 shows the Committee's best collective judgement of the outlook for CPI inflation, based on the same assumptions as Chart 1. The near-term outlook is higher than in August, reflecting higher-than-expected outturns for inflation together with unexpectedly large increases in household energy prices announced for the next few months. Inflation is likely to fall back in the second half of next year, as the impact of external price pressures ease and a partial recovery in productivity growth dampens domestic cost growth.

The Committee continues to place weight on the possibility that demand and effective supply may move together reasonably closely in the future, as they appear to have done in recent years. That implies that some of the sources of uncertainty affecting the outlook for GDP growth may have only limited implications for spare capacity and hence inflation in the medium term.

Even so, considerable uncertainty surrounds the inflation outlook. Inflation can be buffeted by movements in commodity prices, which can be highly volatile. Domestically, the juxtaposition of strong employment and weak productivity is unlikely to continue indefinitely. The way in which this is resolved, and how companies adjust their costs and prices as a result, may well have an important bearing on the path of inflation over the next few years. There is also uncertainty about the extent to which idiosyncratic influences, such as tuition fees and domestic energy bills, will continue to impart upward pressure.

There remains a range of views among Committee members regarding the inflation outlook. On balance, the Committee's best collective judgement, based on the conditioning assumptions described above, is that inflation is likely to move down from the second half of next year, such that the risks of inflation being above or below the 2% target are broadly balanced through much of the second half of the forecast period (Chart 4).

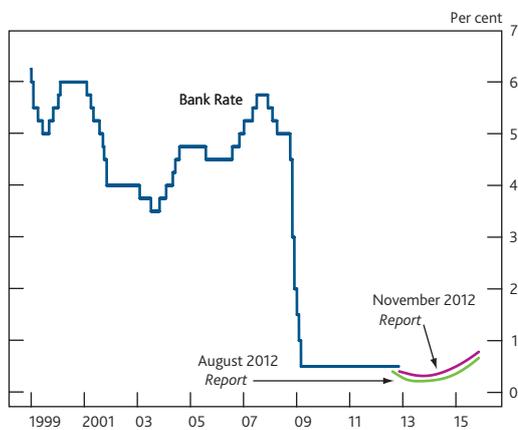
## The policy decision

At its November meeting, the Committee noted that a slow recovery in GDP growth was likely as some of the headwinds holding back demand in recent years abated, although there was a material risk that growth could remain weaker for longer. The near-term inflation outlook was higher than in August, but further out inflation was likely to fall back to around the target. Against that backdrop, the Committee decided that it was appropriate to maintain Bank Rate at 0.5% and the size of the asset purchase programme at £375 billion in order to meet the 2% CPI inflation target over the medium term.

# 1 Money and asset prices

Policy initiatives by several central banks have contributed to improvements in financial market conditions since the *August Report*. UK bank funding costs have fallen sharply, reflecting both international policy actions and the introduction of the Funding for Lending Scheme. There were some signs of increased availability of household secured credit. But it will take time for lower bank funding costs to feed through to lending to the real economy. Broad money growth picked up.

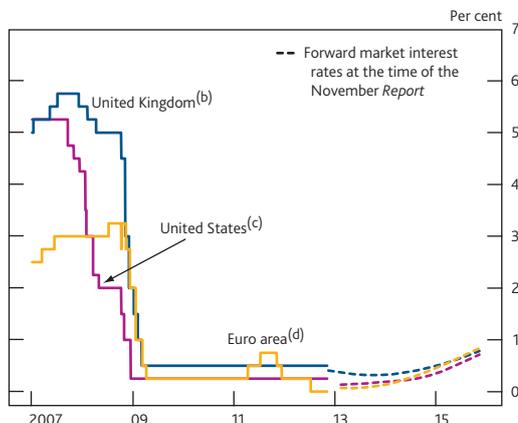
**Chart 1.1** Bank Rate and forward market interest rates<sup>(a)</sup>



Sources: Bank of England and Bloomberg.

(a) The August 2012 and November 2012 curves are estimated using overnight index swap rates in the fifteen working days to 1 August 2012 and 7 November 2012 respectively.

**Chart 1.2** Selected international official interest rates and forward market interest rates<sup>(a)</sup>



Sources: Bank of England, Bloomberg, European Central Bank and Federal Reserve.

(a) Forward market interest rates are estimated using overnight index swap rates in the fifteen working days to 7 November.

(b) Bank Rate.

(c) Target federal funds rate. Since 16 December 2008 the target rate has been set as a range of 0% to 0.25%. The data show the upper bound of that range.

(d) ECB deposit facility rate.

Recent policy actions by several central banks (Section 1.1) have contributed to an improvement in financial market sentiment (Section 1.2). UK bank funding costs have fallen sharply since the *August Report*, reflecting both lower perceived risks to the European banking system following European Central Bank (ECB) policy announcements and the introduction of the Funding for Lending Scheme (FLS). Together, those actions appear to have forestalled a prospective tightening in UK credit conditions (Section 1.3). It will take time, however, for any improvement in credit conditions to be reflected in lending to households and companies (see the box on pages 14–15). The MPC's programme of asset purchases continued to support money growth (Section 1.4).

## 1.1 Monetary policy

Since August, there have been significant policy announcements by several central banks. At its September meeting, the ECB announced a prospective programme of Outright Monetary Transactions (OMTs) aimed at counteracting the perceived risk of currency redenomination incorporated into some euro-area countries' sovereign debt yields (Section 1.2). That initiative is conditional on countries agreeing to enter a European Financial Stability Facility/ European Stability Mechanism programme. In the United States, the Federal Reserve announced that it would expand its asset purchase programme by US\$40 billion per month until the outlook for the labour market, in a context of price stability, improves substantially. Meanwhile, the Bank of Japan announced two further rounds of government bond purchases and a facility similar to the FLS to provide financial institutions with long-term funds to support lending.

At its November meeting, the MPC voted to maintain its programme of asset purchases, financed by the issuance of central bank reserves, at £375 billion and to maintain Bank Rate at 0.5%. The reasons behind the MPC's recent policy decisions are discussed in more detail in the box on page 10. While some market participants continue to place

## Monetary policy since the August Report

The MPC's central projection in the *August Report*, under the assumptions that Bank Rate followed a path implied by market interest rates and that the stock of purchased assets financed by the issuance of central bank reserves reached £375 billion and remained there, was that underlying demand growth was likely to remain soft in the near term before gradually picking up thereafter. Under the same assumptions, the MPC judged that CPI inflation was likely to fall back during 2012 so that it was more likely than not to be around or a little below the target for much of the forecast period.

At the time of the MPC's meeting on 5–6 September, indicators of consumption and surveys of output suggested some modest underlying expansion in Q3. Set against that, however, the more forward-looking components of business surveys were weaker. The slowdown in the global economy was probably a factor behind the relatively weak expectations for activity. The Committee noted that it was probable that the threat of a disorderly outcome in the euro area would continue to weigh on domestic demand for some time. In addition, the risk of a sharper slowdown in emerging economies could not be discounted.

CPI inflation had picked up to 2.6% in July. The rise in oil prices and the probable increase in utility and some food prices meant that the near-term outlook was for a less rapid fall in inflation than the Committee had thought at the time of the *August Report*. Continuing tensions in the Middle East meant that oil prices could possibly increase further.

The Committee judged that there was a substantial margin of spare capacity in the economy, which would continue to bear down on domestic inflationary pressures for some time. But the Committee noted a risk that labour cost growth, and so CPI inflation, would fall more slowly than the Committee had previously anticipated given another fall in productivity. Overall, however, there had been little news regarding the medium-term inflation outlook.

Against that backdrop, all members agreed that it was appropriate to continue with the asset purchase programme announced at the Committee's July meeting and to maintain Bank Rate at 0.5%. Some members felt that additional stimulus was more likely than not to be needed in due course, while others saw the risks to the medium-term inflation outlook as being more balanced around the target.

At the time of the MPC's meeting on 3–4 October, business surveys were consistent with broadly flat output in the remainder of 2012; a weaker path than the Committee had anticipated at the time of the *August Report*. Whether activity remained subdued thereafter or began to rise gradually would

depend on the persistence and strength of headwinds that had constrained growth in the past.

Regarding those, there had been signs that the lessening of the real income squeeze had begun to feed through to household spending growth. Recent international policy announcements had reduced the risk of a sharper slowdown in world activity and contributed to a material decline in UK banks' funding costs. Lower UK banks' funding costs were also likely to reflect the introduction of the FLS. And the Committee noted encouraging signs from the mortgage market.

CPI inflation had fallen to 2.5% in August. There had been little news on the near-term outlook for inflation. The Committee judged inflation was likely to remain a little above the target over the rest of 2012.

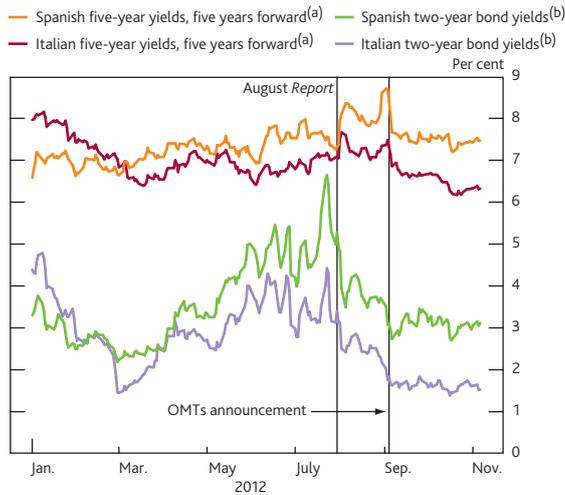
The outlook for inflation further out would depend not only on whether demand recovered but whether that was accompanied by a recovery in productivity. It was possible that a lack of demand, and uncertainty about the demand outlook, had been restraining productivity. In that case, stronger demand could in itself lead productivity to recover quite sharply and would not necessarily add to inflationary pressures. It was instead possible that constraints on the supply of credit from the banking system had been restraining productivity. In that case, more buoyant demand in itself might not be sufficient to bring supply back on stream.

The Committee noted that there were, as ever, limits to what monetary policy could be expected to achieve. Some members felt that there was still considerable scope for asset purchases to provide further stimulus. Other members, while acknowledging that asset purchases had the scope to lower longer-term yields further, questioned the magnitude of the impact that lower long-term yields on corporate debt and equity would have on the broader economy.

Although it now seemed likely that the pickup in activity would come through a little later than anticipated at the time of the *August Report*, there had been little news on the month to change the balance of risks to growth or inflation in the medium term. There were some differences of view between members about the outlook and the likelihood that further easing in policy would be required. But there was agreement that there was little to be gained at this meeting in changing the current programme of asset purchases. The Committee voted unanimously to continue with its programme of asset purchases totalling £375 billion and to maintain Bank Rate at 0.5%.

At its meeting on 7–8 November, the Committee voted to maintain Bank Rate at 0.5%. The Committee also voted to maintain the stock of asset purchases financed by the issuance of central bank reserves at £375 billion.

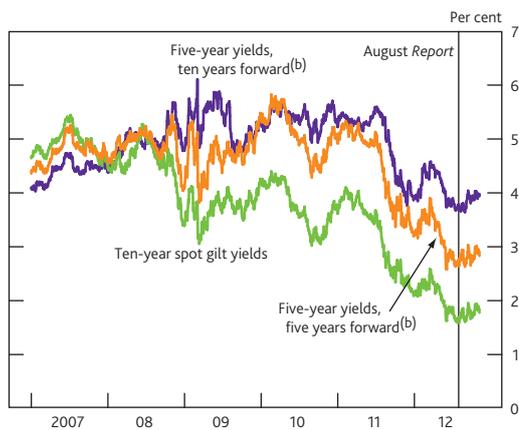
**Chart 1.3** Italian and Spanish two-year government bond yields and five-year yields, five years forward



Sources: Bank of America/Merrill Lynch and Bloomberg.

(a) Derived from government liability curves.  
 (b) Yields to maturity.

**Chart 1.4** UK ten-year nominal spot gilt yields and selected forward rates<sup>(a)</sup>



Sources: Bloomberg and Bank calculations.

(a) Zero-coupon yield.  
 (b) Derived from the Bank's government liability curves.

**Chart 1.5** International equity prices<sup>(a)</sup>



Source: Thomson Reuters Datastream.

(a) In local currency terms.

weight on the possibility of a further reduction in Bank Rate in the near term, overnight index swap (OIS) rates have risen slightly since August (Chart 1.1). But OIS rates indicate that Bank Rate is expected to rise above its current level only towards the end of 2015. Indeed, forward market rates for the next three years — which provide an indication of market expectations of the future stance of monetary policy — remain low internationally (Chart 1.2).

## 1.2 Financial markets

### Government bonds

The announcement by the ECB that it was potentially willing, through OMTs, to undertake secondary market purchases of short-term government bonds reduced the upward pressure on some euro-area sovereign bond yields. In the run-up to the announcement, building expectations of ECB action had contributed to falls in short-term Spanish and Italian government bond yields (Chart 1.3). On the announcement, longer-term forward rates also fell, although they remained substantially above pre-crisis levels. That may, in part, reflect the fact that underlying concerns about the indebtedness and competitiveness of some euro-area countries remain.

In the United Kingdom, ten-year gilt yields remained close to record lows in the run-up to the November Report (Chart 1.4). For some time, euro-area tensions have been associated with safe-haven flows into UK government bonds, putting downward pressure on gilt yields. But the announcement of OMTs may have lessened flows of capital away from vulnerable countries and correspondingly reduced demand for less risky sovereign bonds, at least to a degree.

Domestic factors — such as the MPC's programme of asset purchases — are likely to have borne down on gilt yields. It is also possible that the current low level of gilt yields may reflect expectations that weak UK output growth will prove persistent. Since mid-2011, the implied cost of government borrowing for five years in five years' time has fallen to historic lows (Chart 1.4), largely reflecting lower real rates. But growth prospects further out do not appear to have been revised by as much, as the cost of borrowing for five years in ten years' time has fallen by less.<sup>(1)</sup>

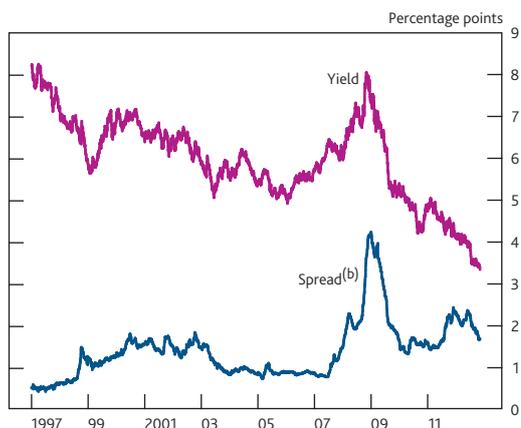
### Equities and corporate bonds

Recent announcements by several central banks appear, in part, to have been associated with a degree of increased investor demand for riskier assets.

In equity markets, in the fifteen working days to 7 November, the FTSE All-Share index was only a little below early-2011

(1) For a discussion of falls in UK government bond yields since the financial crisis see Guimarães, R (2012), 'What accounts for the fall in UK ten-year government bond yields?', *Bank of England Quarterly Bulletin*, Vol. 52, No. 3, pages 213–23.

**Chart 1.6** Non-financial companies' sterling investment-grade corporate bond spread and yield<sup>(a)</sup>

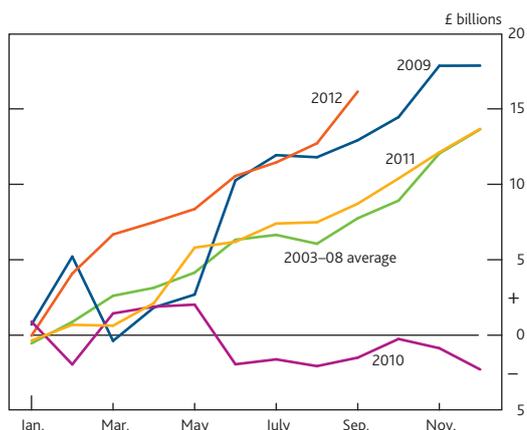


Source: Bank of America/Merrill Lynch.

(a) Excludes utility companies.

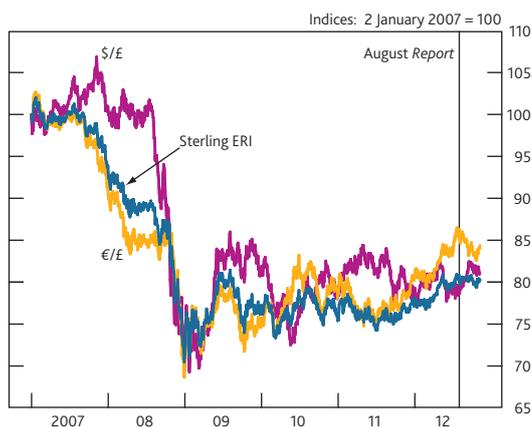
(b) Option-adjusted spread over equivalent-maturity government bonds.

**Chart 1.7** Cumulative net corporate bond issuance by private non-financial corporations over calendar years<sup>(a)</sup>



(a) Monthly net issuance of sterling and foreign currency stand-alone and programme bonds. Data are non seasonally adjusted.

**Chart 1.8** Sterling exchange rates



levels. The S&P index rose above its level in early 2008 (**Chart 1.5**). In corporate bond markets, UK non-financial investment-grade companies' bond yields have fallen to historic lows (**Chart 1.6**), in large part reflecting low government bond yields. The spread over those yields, which reflects investors' perceptions of the riskiness of holding corporate debt, has also been falling, although it remains above its pre-crisis level. Lower corporate bond yields may have encouraged corporate bond issuance, which has been very strong in 2012 to date (**Chart 1.7**).

### Exchange rates

The sterling effective exchange rate was little changed from three months earlier in the run-up to the *November Report* (**Chart 1.8**). But, within that, sterling rose against the dollar and fell against the euro. Those movements in bilateral rates partly stem from developments in the euro area. The perceived lessening in near-term euro-area tail risks has led the euro to rise slightly relative to sterling and other currencies. And, with the UK economic outlook closely linked to developments in the euro area, that may have been associated with a rise in sterling against the dollar, although that rise may also reflect the additional monetary easing announced by the Federal Reserve in September.

Despite recent movements, developments in the euro area have contributed to sterling appreciating by around 8% from its trough in the summer of 2011. As a result, the sterling ERI is close to the top of the range it has moved in since the 25% depreciation in 2007/08.

## 1.3 The banking sector and credit conditions

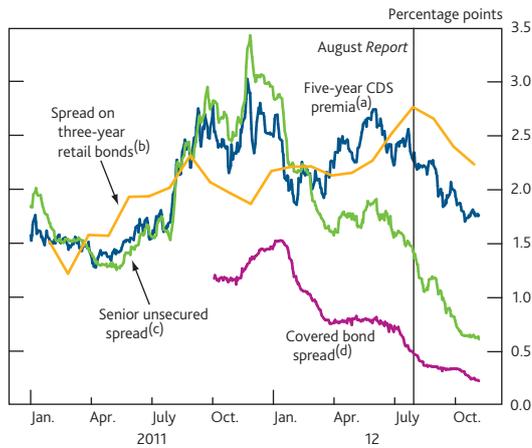
UK banks' funding costs are a key determinant of credit conditions facing UK households and companies. As described in a box in the *August Report*,<sup>(1)</sup> the FLS provides a cheaper source of funding for participating banks and incentivises them to increase net lending to the UK real economy. Since 1 August 2012, 30 lenders have signed up to the Scheme. Together, those lenders account for around 80% of the stock of loans to UK-resident households and companies. The Scheme appears to have contributed to lower bank funding costs, and there are early indications that it has begun to flow through into credit conditions. It will take time, however, for the FLS to affect lending quantities, as set out in a box on pages 14–15.

### Bank funding

Indicative measures of UK banks' longer-term funding costs have fallen sharply since the *August Report*, reflecting falls in funding spreads (**Chart 1.9**). That probably reflects various policy announcements. For example, the announcement of OMTs is likely to have increased investors' willingness to hold

(1) See the box on pages 14–15 of the *August 2012 Report*.

**Chart 1.9** UK banks' indicative longer-term funding spreads



Sources: Bank of England, Bloomberg, Markit Group Limited and Bank calculations.

- (a) The data show a simple average of the five-year CDS premia of Barclays, HSBC, Lloyds Banking Group, Nationwide, Royal Bank of Scotland and Santander UK.  
 (b) Sterling only. Spread over the three-year swap rate. The three-year retail bond rate is a weighted average of rates from banks and building societies within the Bank of England's normal quoted rate sample with products meeting the specific criteria (see [www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/household\\_int.aspx](http://www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/household_int.aspx)).  
 (c) The data show a simple average of the spread between euro-denominated senior unsecured bonds and equivalent-maturity swap rates for a selected bond issued by each of the major UK lenders. The selected bonds have residual maturities of between two and six years.  
 (d) The data show a simple average of the spread between euro-denominated covered bonds and equivalent-maturity swap rates for a selected bond issued by each of the major UK lenders. The selected bonds have residual maturities of between three and seven years.

bank debt, both in the United Kingdom as well as in the euro area, by alleviating some of the tail risks to the European banking system. But measures of UK banks' longer-term funding spreads have fallen by more than European bank funding spreads have, on average. That probably reflects UK-specific factors, including the availability of cheaper funding through the FLS, which has reduced banks' need to issue debt in public markets. Additionally, changes in Financial Services Authority (FSA) liquidity guidance may have been associated with some UK banks using existing funding that had been financing liquid assets to pay down debt.<sup>(1)</sup>

Key components of UK banks' long-term unsecured wholesale funding costs include credit default swap (CDS) premia — an indicator of the compensation investors require to bear default risk — and senior unsecured bond spreads observed in secondary markets. Those measures moved closely together in 2011, and both have fallen in 2012. But UK banks' senior unsecured bond spreads have fallen by much more than five-year CDS premia in 2012, and are now around a fifth of their 2011 peak (**Chart 1.9**). That divergence may reflect a lack of arbitrage in these markets. Nonetheless, the more substantial decline in unsecured bond spreads probably reflects, in part, low bank debt issuance — UK banks had already completed a significant proportion of their planned public market issuance for 2012 prior to recent policy actions — together with strong investor demand for bank bonds.

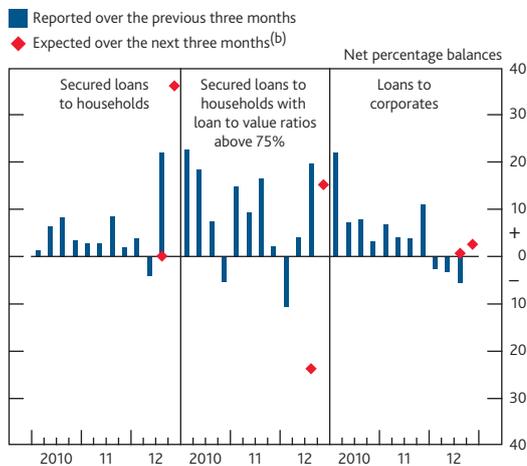
In addition to wholesale markets, banks also obtain longer-term funding through retail deposits. Retail deposit spreads have fallen in recent months (**Chart 1.9**). That probably also reflects lower overall funding requirements, but banks' preferences about the share of retail relative to wholesale funding also influences these rates.

Shorter-term bank unsecured funding rates, including Libor, have also declined in recent months. In part, that is likely to reflect weaker demand by UK banks. For example, some may have been able to reduce precautionary cash buffers following better-than-expected ratings reviews in June and changes to FSA liquidity guidance.

### Household sector credit conditions

Declines in bank funding costs should mean that, in time, credit conditions facing households ease. One timely source of information is the Bank's *Credit Conditions Survey*, a survey of lenders. In the Q2 survey, taken prior to the introduction of the FLS, lenders suggested that mortgage availability would be unchanged in Q3. But, in the Q3 survey, lenders reported a significant increase in secured credit availability (**Chart 1.10**). Relative to previous expectations, there was a particularly marked rise in availability of loans at loan to value ratios above 75%.

**Chart 1.10** *Credit Conditions Survey*: changes in credit availability<sup>(a)</sup>



- (a) Weighted responses of lenders. A positive balance indicates an increase in credit availability and a negative balance indicates credit availability had fallen in that quarter.  
 (b) Expectations over the next three months are shown for the 2012 Q2 and Q3 surveys only. Expectations balances have been moved forward by one quarter so that they can be compared with the actual outcomes in the following quarter.

(1) For more information on adjustments to FSA's liquidity regime see [www.fsa.gov.uk/library/communication/statements/2012/fpc.shtml](http://www.fsa.gov.uk/library/communication/statements/2012/fpc.shtml).

## A framework for how the Bank will monitor the transmission of the Funding for Lending Scheme

Banks and building societies have been able to access the Funding for Lending Scheme (FLS) since 1 August 2012. The FLS provides incentives for them to expand their lending to UK households and companies by lowering their funding costs (see the box on pages 14–15 of the *August Report*).<sup>(1)</sup> This box sets out a framework for thinking about how the FLS is likely to feed into lending to the real economy and provides guidance on the indicators that will be used to monitor its transmission — Section 1.3 provides evidence on those indicators that are already available.

The FLS will take time to feed through into lending to the real economy. And assessing its impact will be hampered by not knowing what would have happened in the absence of the Scheme. But **Figure 1** provides a basic timeline for the transmission of the FLS to the real economy and sets out the types of indicators that the Bank will be using to monitor its impact at different stages.

As discussed in Section 1.3, the FLS has already reduced bank funding costs, and these have begun to feed through into the

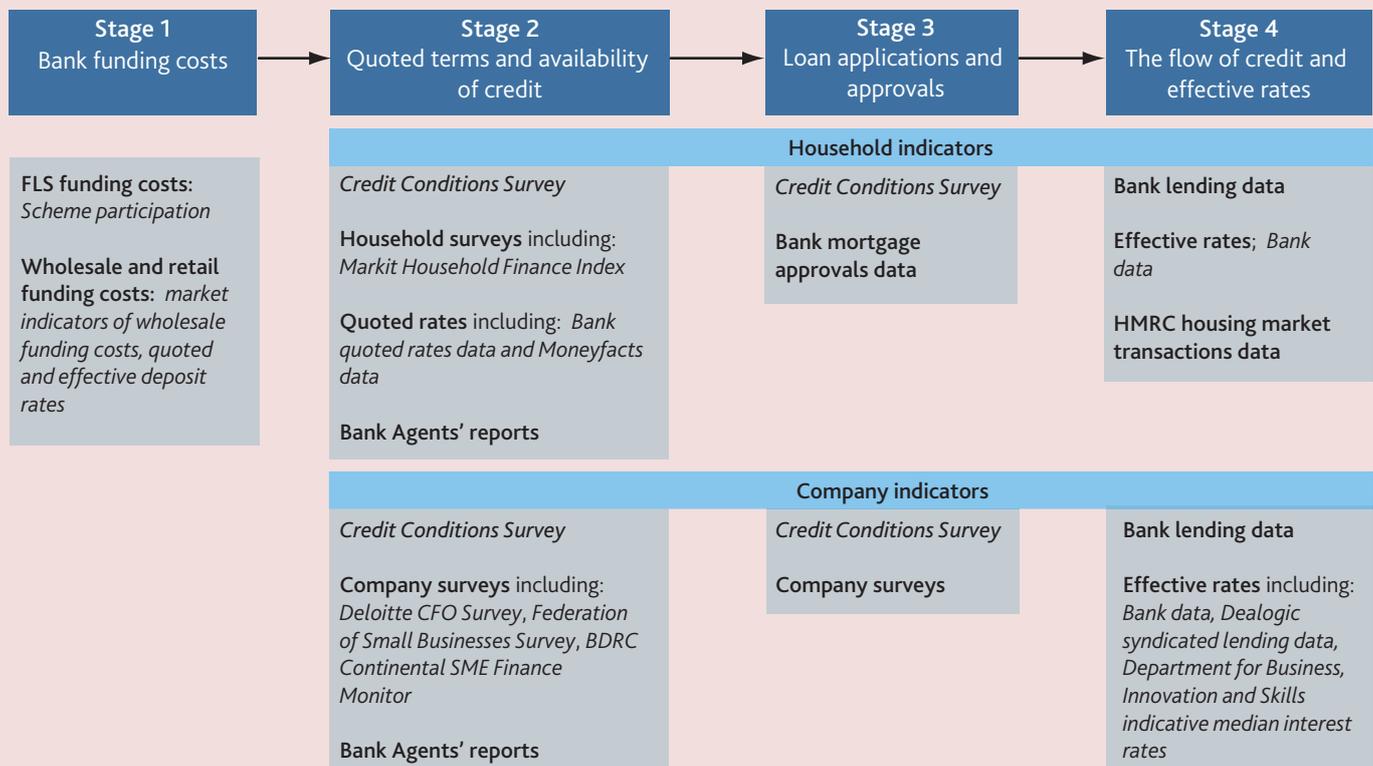
price and availability of credit (Stages 1 and 2 in **Figure 1**). But the Scheme's impact on loan applications and on the flow of credit (Stages 3 and 4) are yet to be observed. On the household side, given the typical lags between mortgage approvals and transactions, and the effects seen to date, it seems unlikely that the FLS will begin to affect bank lending data until early 2013. And it is probable that it will take longer for the FLS to feed through to corporate lending — for example, because mortgage products are more standardised than corporate loans, which tend to be tailored for each customer.

Although **Figure 1** provides a stylised guide to the transmission mechanism discussed in the remainder of this box, it may not capture all the potential effects on demand of the FLS. For example, the design of the FLS is likely to lead to an injection of a large volume of Treasury bills into the wider economy. This may provide an added boost to demand through portfolio rebalancing effects.

### Stage 1: bank funding costs

The FLS has both direct and indirect effects on bank funding costs. The FLS directly affects funding by providing all participating banks (Section 1.3) with access to funding at rates that depend on how much they lend, but that are significantly below those available prior to the Scheme's

**Figure 1** Stylised FLS transmission and selected indicators<sup>(a)</sup>



(a) The listed indicators are a selection of the full range of indicators at each stage. In broad terms, initial indicators of Stage 1 and Stage 2 are already available; those at Stages 3 and 4 will become available in coming months. As the typical lag between a mortgage approval and transaction is two to four months, the FLS is unlikely to begin to affect household lending until early 2013. It is probable, however, that it will take longer for the FLS to affect corporate lending.

launch. These banks will be able to borrow up to 5% of their stock of loans to UK households and companies — as at end-June 2012 — plus any net expansion of their lending to the real economy to the end of 2013 under the Scheme.

Data on the amount of funding accessed by participating banks will be published on a quarterly basis beginning in December.<sup>(2)</sup> It is important to note, however, that participating banks can borrow from the Bank at any point during the Scheme's drawdown period and that there is no mechanical link between banks' decisions to draw down and their decisions to expand lending.

By reducing the need for participating banks to rely on public markets for funds, the FLS may also indirectly lower wholesale and retail funding costs more broadly. But developments in those funding costs (**Chart 1.9**) will also reflect other factors. For example, recently, banks' funding costs have been sensitive to developments in the euro area.

### Stage 2: quoted terms and availability of credit

Lower bank funding costs should place some downward pressure on quoted interest rates and arrangement fees charged on new loans. Early indicators of this will be given by the Bank's *Credit Conditions Survey*, as well as in aggregate measures of advertised rates offered to households (**Chart 1.11**). Surveys will also help discern the extent to which the FLS may have affected credit availability.

Banks extend credit to a variety of customers, and could ease lending conditions by increasing the range of customers to whom they lend rather than lowering rates and fees. Alternatively, they could increase the volume of lending made on existing products. For example, banks may choose to provide more credit at high loan to value (LTV) ratios or to small and medium-sized enterprises. Intelligence from the Bank's Agents, survey responses and information on the products on offer will be used to monitor the scope of lending.

### Stage 3: loan applications and approvals

If households' and companies' demand for credit is responsive to an improvement in credit conditions, then the Scheme should help to bolster the number of loan applications and, over time, approvals. For households, secured loan approvals data are available (**Table 1.B**). Information on companies' loan applications and approvals are available from surveys, for example that conducted by the Federation of Small Businesses.

### Stage 4: the flow of credit and effective rates

In time higher loan applications and approvals resulting from the FLS will feed through into lending volumes. But it could take time for that to occur because there are often significant lags between a loan being agreed and it being drawn down.

For example, there is typically a two to four-month lag between a mortgage being approved and the subsequent housing transaction, at which point the loan is made. So it seems unlikely that the FLS will begin to affect mortgage lending volumes until early 2013, and even then the boost is likely to be modest initially.

The Bank of England publishes a range of lending data that will be used to monitor the effects of the FLS. They include data on flows of lending to UK households and companies by each lender participating in the Scheme. In addition, the extent to which lending flows vary across different sizes of business will be captured by a recently established Bank of England survey.<sup>(3)</sup>

The price at which lending occurs will be captured by data on effective interest rates on new loans. But, in practice, it will be difficult to use these aggregate rates to judge the impact of the FLS. That is because effective rates are the weighted average of interest rates across different loan types. So if the proportion of high LTV mortgages increases within households' secured lending, that could push up effective new mortgage rates even though quoted rates may fall for each mortgage type. As a result, it will be important to take into account changes in the composition of lending when interpreting effective rates.

The cost of servicing the stock of debt is captured by effective rates on the outstanding stock of debt. These will respond even more slowly because new lending represents only a small fraction of the outstanding stock.

### Wider economic impact

To the extent that the FLS succeeds in boosting bank lending to UK households and companies that will have a number of wider economic effects. These could include: supporting consumer spending; boosting housing market activity and associated dwellings investment; and boosting business investment. But those effects will take time to come through. Moreover, it will be difficult to judge the precise role the FLS has played because of the difficulty of knowing what would have happened without the Scheme.

(1) An explanatory note with more details is available at [www.bankofengland.co.uk/markets/Documents/explanatory\\_notefls120713.pdf](http://www.bankofengland.co.uk/markets/Documents/explanatory_notefls120713.pdf).  
 (2) The first publication date will be on 3 December 2012 and will show data for 2012 Q3. This release and data for subsequent quarters will be available at [www.bankofengland.co.uk/markets/Pages/FLS/data.aspx](http://www.bankofengland.co.uk/markets/Pages/FLS/data.aspx).  
 (3) For a fuller discussion of lending to small and medium-sized enterprises and large businesses see *Trends in Lending*, July 2012.

**Table 1.A Credit Conditions Survey: spreads on household and corporate loans<sup>(a)</sup>**

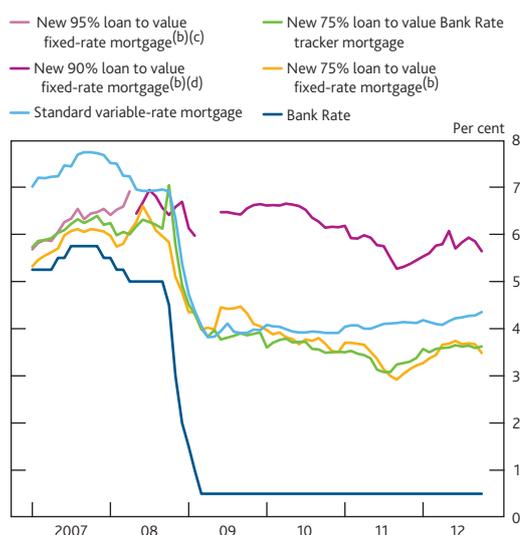
Net percentage balances	Averages			2012	
	2007 Q2–2009	2010–11	2012 H1	Q3 <sup>(b)</sup>	Q4 <sup>(c)</sup>
<b>Households</b>					
Secured loans	22	-15	31	10 (21)	(-22)
Unsecured loans	7	1	-2	2 (-1)	(-7)
<b>Businesses</b>					
Large	35	-26	19	2 (23)	(0)
Medium	30	-9	36	6 (28)	(1)
Small <sup>(d)</sup>	n.a.	6	10	0 (21)	(9)

(a) Weighted responses of lenders. A positive balance indicates that spreads over reference rates had risen and a negative balance indicates spreads had fallen in that quarter.

(b) Data in parentheses show lenders' expectations for the following three months reported in the 2012 Q2 survey.

(c) Data in parentheses show lenders' expectations for the following three months reported in the 2012 Q3 survey.

(d) Data are only available from 2009 Q4.

**Chart 1.11 Bank Rate and average quoted mortgage interest rates<sup>(a)</sup>**

(a) Sterling-only end-month average quoted rates. The Bank's quoted interest rates series are weighted averages of rates from a sample of banks and building societies with products meeting the specific criteria (see [www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/household\\_int.aspx](http://www.bankofengland.co.uk/statistics/Pages/iadb/notesiadb/household_int.aspx)).

(b) Two-year fixed-rate mortgage.

(c) Series has not been published since April 2008 as fewer than three products have been offered in that period.

(d) Series is only available on a consistent basis back to May 2008, and is not published for March to May 2009 as fewer than three products were offered in that period.

Lenders expected to increase availability again in Q4, with the FLS widely cited as an important contributing factor. In terms of prices, respondents reported that spreads on mortgage rates increased by less in Q3 than had been expected in the Q2 survey (**Table 1.A**). Spreads were expected to fall in Q4.

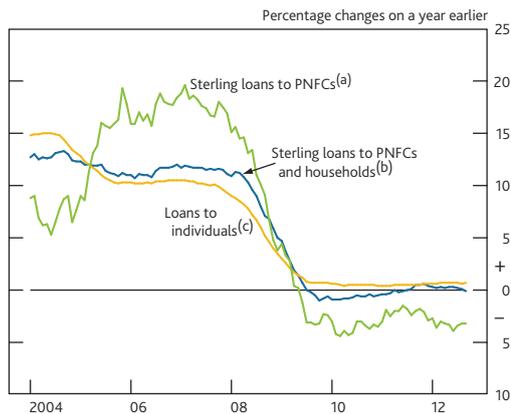
Changes in mortgage rates have been more muted than reductions in banks' funding costs to date. Quoted rate data collected by the Bank suggest that new mortgage rates have stopped increasing, with average rates on some fixed-rate products falling by around 20 basis points or so since the start of August (**Chart 1.11**). But the standard variable mortgage rate has edged up since August, helping to restore lenders' margins on existing loans following the earlier increases in funding costs. As well as lower loan rates, lower bank funding costs could lead to lower product fees or greater product availability. But there appears to have been little change in fees charged on loans to date. The Bank will continue to monitor data on fees, together with evidence on product availability (see the box on pages 14–15).

The tightness in credit conditions since the onset of the financial crisis has been associated with weak household lending (**Chart 1.12**), in large part reflecting weak secured lending. In turn, that has been associated with subdued housing market activity, which remained substantially below pre-crisis levels in 2012 Q3 (**Table 1.B**). That low level of activity has been associated with broadly flat house prices over the past few years. An easing in credit conditions as a result of the FLS and the more general fall in UK bank funding costs should boost secured loan growth and housing market activity relative to the situation in which funding costs had remained very elevated. But that will take time: the FLS is unlikely to start affecting secured lending volumes until early 2013, and even then the boost is likely to be modest initially.

### Corporate sector credit conditions

There are fewer signs to date of lower funding costs feeding through to corporate credit conditions. As the box on pages 14–15 sets out, it is likely to take longer for lower bank funding costs to affect corporate loans than household loans — for example, because mortgage products are more standardised than corporate loans, which tend to be designed for each customer.

Following the introduction of the FLS, lenders reported that spreads on corporate loans increased by less than had been anticipated in the Q2 *Credit Conditions Survey* (**Table 1.A**). But there was a slight reduction reported in overall credit availability — a marginally weaker outturn than had been expected (**Chart 1.10**). Some lenders suggested that this response in part reflected the fact that they did not expect to see an increase in companies' demand for credit, even at lower rates. Consistent with that, the Bank's Agents reported that companies were funding a greater proportion of their working

**Chart 1.12 Loans to PNFCs and households**

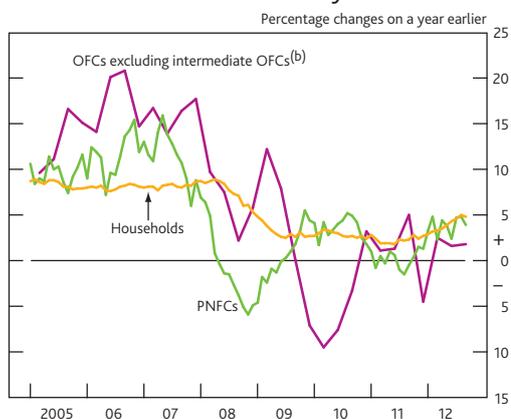
- (a) M4 loans excluding the effects of securitisations and loan transfers.  
 (b) Sterling lending by UK-resident monetary financial institutions (MFIs) and related specialist mortgage lenders excluding the effects of securitisations and loan transfers. Funding for Lending Scheme measure. Non seasonally adjusted.  
 (c) Sterling lending by UK-resident MFIs and other lenders. Excludes student loans.

**Table 1.B Housing market indicators**

	Averages since 2000 <sup>(a)(b)</sup>	2011	2012			
			Q1 <sup>(a)</sup>	Q2 <sup>(a)</sup>	Q3 <sup>(a)</sup>	Oct.
<b>Activity</b>						
Property transactions (000s) <sup>(c)</sup>	95	73	82	74	76	n.a.
Mortgage approvals (000s) <sup>(d)</sup>	85	49	53	49	49	n.a.
RICS sales to stocks ratio <sup>(e)</sup>	0.35	0.21	0.23	0.23	0.23	n.a.
			Average monthly changes			
	Change 2007 Q4–2012 Q3	2011	Q1 <sup>(a)</sup>	Q2 <sup>(a)</sup>	Q3 <sup>(a)</sup>	Oct.
<b>Prices<sup>(f)</sup></b>						
Halifax	-18.5	-0.2	0.8	-0.3	-0.5	-0.7
Nationwide	-11.8	0.1	-0.3	-0.2	0.0	0.6
ONS <sup>(g)</sup>	-3.9	0.0	0.1	0.4	0.0	n.a.
Land Registry <sup>(h)</sup>	-10.5	-0.1	0.2	0.2	0.2	n.a.

Sources: Bank of England, Halifax, HM Revenue and Customs, Land Registry, Nationwide, ONS, Royal Institution of Chartered Surveyors (RICS) and Bank calculations.

- (a) Averages of monthly data.  
 (b) Except for property transactions, which is an average since April 2005.  
 (c) Number of residential property transactions with value £40,000 or above.  
 (d) Loan approvals for house purchase.  
 (e) Ratio of sales recorded over the past three months to the level of stock on estate agents' books at the end of the month.  
 (f) Percentage changes.  
 (g) 2012 Q3 estimate is an average of data for July and August.  
 (h) Data relate to England and Wales only.

**Chart 1.13 Sectoral broad money<sup>(a)</sup>**

- (a) Monthly data unless otherwise specified.  
 (b) Quarterly data. Intermediate other financial corporations (OFCs) are: mortgage and housing credit corporations; non-bank credit grantors; bank holding companies; securitisation special purpose vehicles; and other activities auxiliary to financial intermediation. In addition to the deposits of these five types of OFCs, sterling deposits arising from transactions between banks or building societies and 'other financial intermediaries' belonging to the same financial group are excluded from this measure of broad money.

capital and investment internally than before the 2008/09 recession. Respondents to the *Credit Conditions Survey* also did not expect to increase availability significantly in Q4.

Bank loans to private non-financial corporations (PNFCs) continued to decline in Q3 (**Chart 1.12**) and have fallen for companies of all sizes. For larger companies that may in part reflect favourable bond market conditions (Section 1.2) encouraging the substitution of bond market finance for bank loans and equity finance.

Many smaller companies, however, are unable to access capital markets. Larger companies' substitution of bond market finance for bank debt may, over time, free up banks' lending capacity. But respondents to the Federation of Small Businesses' *Voice of Small Business Index*, and information from the Bank's Agents, suggest that credit conditions remain restrictive for smaller companies.

## 1.4 Money

Four-quarter growth in broad money picked up to 4.2% in Q3. Households' broad money growth reached its highest rate since 2008, although growth remained significantly below pre-recession rates across all sectors (**Chart 1.13**). In part, the strengthening in broad money growth is likely to reflect the MPC's asset purchases, which should in time feed through into higher spending by households and companies.

In Q3, the Bank purchased around £35 billion of gilts and broad money increased by only slightly less — around £29 billion. Overall, however, since October 2011, broad money has increased by much less than the Bank's asset purchases. But as discussed in previous *Reports*, it is difficult to ascertain what the flows of broad money would have been in the absence of those asset purchases.

There are a number of reasons why the Bank's asset purchases may not have been fully reflected in money growth. For example, some companies may have used the proceeds raised from issuing corporate bonds to pay down bank debt rather than build up deposits. In time that should still, however, support nominal spending, as companies with relatively low levels of existing debt will be better placed to maintain employment and to secure finance for future investment projects. In addition, since the latest round of purchases commenced in July, banks in aggregate have reduced their holdings of gilts, some of which may be related to recent changes in liquidity guidance (Section 1.3). That may have reduced broad money growth. But banks may also have been able to use the funding that previously supported holdings of gilts to pay down their debt.

## 2 Demand

GDP has been broadly flat over the two years to 2012 Q2. Several factors have held back domestic demand, including weak real income growth, tight credit conditions and the fiscal consolidation. That said, real income growth has picked up a little over the past few quarters, supporting a gentle strengthening in underlying consumption growth. Events abroad, in particular in the euro area, have continued to weigh on economic activity in the United Kingdom.

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

Percentage changes on a quarter earlier	Averages		2011	2012	
	1998–2007	2008–2011 Q3	Q4	Q1	Q2
Household consumption <sup>(b)</sup>	0.9	-0.4	0.2	0.3	-0.2
Private sector investment	1.1	-1.6	0.3	4.1	-2.7
<i>of which, business investment</i>	1.2	-1.1	2.6	-2.6	0.9
<i>of which, private sector dwellings investment</i>	1.7	-2.0	-4.3	18.8	-9.0
<b>Private sector final domestic demand</b>	<b>0.9</b>	<b>-0.6</b>	<b>0.2</b>	<b>0.9</b>	<b>-0.6</b>
Government consumption and investment <sup>(c)</sup>	0.8	0.2	-0.3	2.7	-1.7
<b>Final domestic demand</b>	<b>0.9</b>	<b>-0.4</b>	<b>0.1</b>	<b>1.4</b>	<b>-0.9</b>
Change in inventories <sup>(d)(e)</sup>	0.0	0.0	-0.8	-0.4	0.5
Alignment adjustment <sup>(e)</sup>	0.0	0.0	-0.1	-0.8	0.8
<b>Domestic demand</b>	<b>0.9</b>	<b>-0.4</b>	<b>-0.8</b>	<b>0.2</b>	<b>0.4</b>
'Economic' exports <sup>(f)</sup>	1.1	0.2	3.1	-1.6	-0.9
'Economic' imports <sup>(f)</sup>	1.4	-0.4	1.7	-0.1	1.5
<b>Net trade<sup>(e)(f)</sup></b>	<b>-0.1</b>	<b>0.2</b>	<b>0.4</b>	<b>-0.5</b>	<b>-0.8</b>
<b>Real GDP at market prices</b>	<b>0.8</b>	<b>-0.2</b>	<b>-0.4</b>	<b>-0.3</b>	<b>-0.4</b>

(a) Chained-volume measures.

(b) Includes non-profit institutions serving households.

(c) Government investment data have been adjusted by Bank staff to take account of the transfer of nuclear reactors from the public corporation sector to central government in 2005 Q2.

(d) Excludes the alignment adjustment.

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

(f) Excluding the impact of missing trader intra-community (MTIC) fraud. Official MTIC-adjusted data are not available for exports, so the headline exports data have been adjusted for MTIC fraud by an amount equal to the ONS's imports adjustment.

Weakness in GDP growth over the recent past (Table 2.A) has reflected both domestic and external influences. Domestic demand has been held back by a number of factors, including: tight credit conditions; the fiscal consolidation; and a squeeze on real incomes. That income squeeze has eased a little over the past year, supporting a gentle recovery in consumption growth (Section 2.1).

Events abroad have also weighed on the UK economy. Uncertainty about prospects for the euro area has weighed on asset prices and on household and business confidence. And muted world trade growth has held back UK export growth (Section 2.2). Governments and central banks in several countries have taken actions to support economic growth, but uncertainty over the outlook remains.

Recent weakness in activity has been associated with subdued nominal spending growth: four-quarter nominal GDP growth was only around 2% in 2012 Q2 (Chart 2.1).

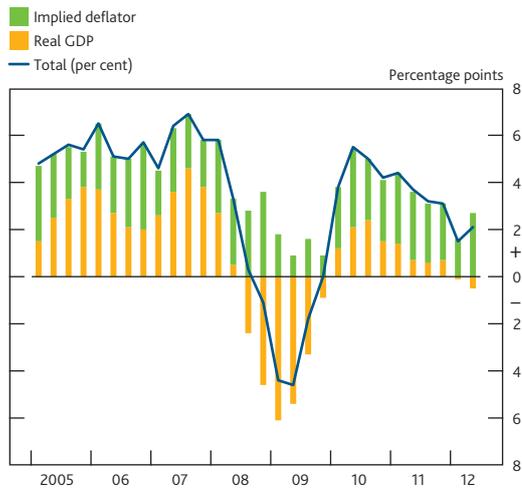
Headline quarterly real GDP growth is provisionally estimated by the ONS to have been 1% in Q3, but in large part that reflected a bounceback from the extra Jubilee bank holiday in Q2 and a temporary boost from the Olympics (Section 3).

### 2.1 Domestic demand

#### Household spending

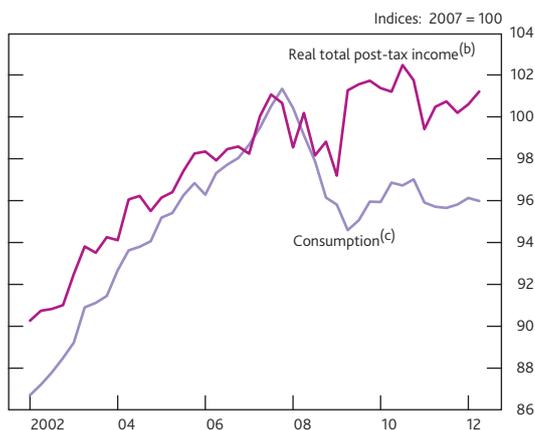
Consumption fell a little in 2012 Q2, having increased in the two preceding quarters (Table 2.A). The extra bank holiday in Q2 associated with the Diamond Jubilee is likely to have reduced some elements of spending, particularly on services with many providers closed. Had it not been for the bank holiday, it is likely that consumer spending would have continued its gentle recovery. But recent rises in household spending have been small relative to the falls seen at the start of the crisis, such that consumption remains around 5% below its pre-crisis peak (Chart 2.2).

**Chart 2.1** Contributions to four-quarter growth in nominal GDP<sup>(a)</sup>



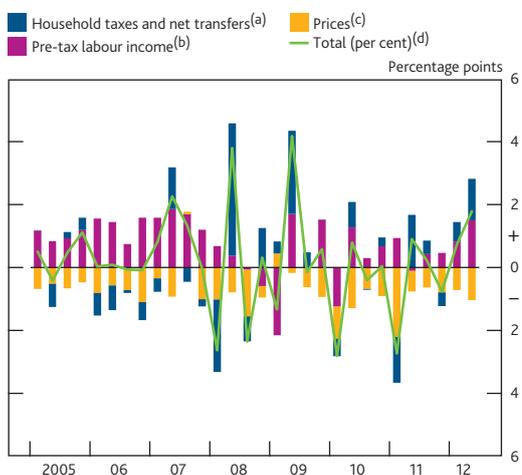
(a) At market prices. Contributions may not sum to total due to rounding.

**Chart 2.2** Real household consumption and income<sup>(a)</sup>



(a) Includes non-profit institutions serving households.  
 (b) Total available household resources, deflated by the consumer expenditure deflator.  
 (c) Chained-volume measure.

**Chart 2.3** Contributions to quarterly growth in real post-tax labour income



(a) Household taxes include income tax and Council Tax. Net transfers are general government benefits minus employees' National Insurance contributions.  
 (b) Wages and salaries plus mixed income.  
 (c) Calculated as a residual.  
 (d) Nominal post-tax labour income divided by the consumer expenditure deflator (including non-profit institutions serving households).

Consumption growth is likely to have picked up in Q3. Retail sales growth was robust. And growth in spending on services should increase as the drag from the additional Jubilee bank holiday unwinds.

One reason why underlying consumption growth may have picked up a little in recent quarters is the easing in the squeeze on real incomes. Weak wage growth, together with increases in VAT and import and energy prices, have borne down on real income growth in recent years. But prices have risen a little more slowly over the past year than in the preceding year or so (Chart 2.3). And over the past two quarters, nominal income growth has picked up, in part reflecting strength in employment growth (Section 3). The near-term outlook for real income growth remains muted, however: although it is likely that real household income growth was supported by increased employment in Q3, energy price rises later in the year will dampen real income growth (Section 4).

How much households choose to save also matters for consumer spending. The household saving ratio rose sharply during 2008 and 2009. Over the past year, it has remained relatively stable at levels similar to those seen in the late 1990s (Chart 2.4).

Households' saving in part depends on their expectations about future income. The recession is likely to have adversely affected households' expectations of future income. And some households will have responded by spending less now to smooth consumption over time. Moreover, households may have become more uncertain about their employment and earning prospects, and may therefore want to increase their buffer of precautionary savings. The fiscal consolidation has probably added to this sense of uncertainty, particularly for public sector employees.

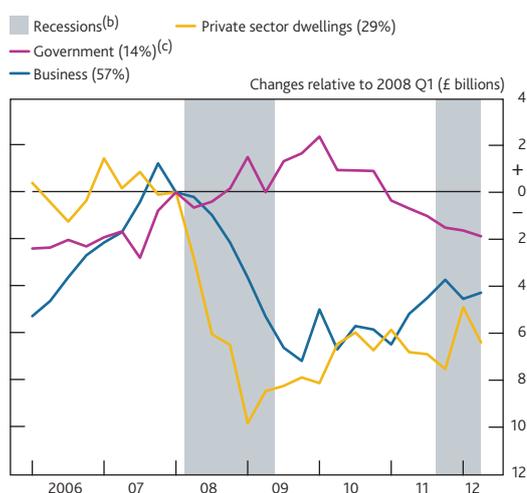
Tighter credit conditions are also likely to have constrained households' ability to borrow to smooth consumption. That constraint should ease in coming quarters, all else equal, as the Funding for Lending Scheme (FLS) should increase credit availability and lower its cost (see the box on pages 14–15).

Some households will also want to increase their savings for other reasons. Following the financial crisis, indebted households may feel that their debt leaves them particularly vulnerable to adverse events, and might therefore try to reduce it. And some households could feel the need to make greater provisions for future retirement.

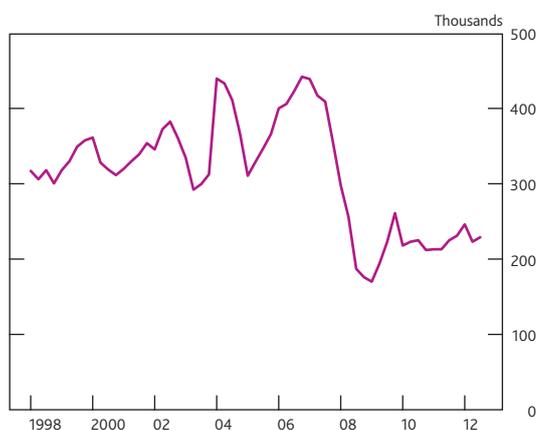
It is difficult to assess how much further households are likely to adjust their balance sheets. That said, evidence from the NMG Consulting survey points to the possibility of further adjustment to come (pages 22–23). The medium-term outlook for household saving and spending is discussed in Section 5.

**Chart 2.4 Household saving ratio<sup>(a)</sup>**

- (a) Percentage of household post-tax income.  
 (b) Recessions are defined as at least two consecutive quarters of falling output (at constant market prices) estimated using the latest data. The recessions are assumed to end once output began to rise.

**Chart 2.5 Investment<sup>(a)</sup>**

- (a) Figures in parentheses are shares in total investment in 2012 Q2.  
 (b) Recessions are defined as in Chart 2.4.  
 (c) Includes public corporations' dwellings investment and transfer costs. Government investment data have been adjusted by Bank staff to take account of the transfer of nuclear reactors from the public corporation sector to central government in 2005 Q2.

**Chart 2.6 Residential housing transactions<sup>(a)</sup>**

Sources: Her Majesty's Revenue and Customs, ONS and Bank calculations.

- (a) Number of residential property transactions in the United Kingdom with a value of £40,000 or above per quarter from 2005 Q2. Prior to that date, the series has been assumed to grow in line with quarterly Land Registry data on transactions in England and Wales.

## Dwellings investment

Despite accounting for only a small share of total demand, dwellings investment (Chart 2.5) accounted for around one third of the fall in GDP during the 2008/09 recession. This category of investment, which includes spending on services associated with property transactions (Chart 2.6), was volatile during 2012 H1. That volatility probably reflected decisions by some households to bring forward transactions to Q1, ahead of the end of the stamp duty holiday. Overall, dwellings investment remains well below its pre-recession peak. The FLS should support dwellings investment if it encourages more housing transactions.

## Business investment

Business investment fell markedly in 2008 and 2009 (Chart 2.5), and remains around 15% below its pre-recession peak. The low level of investment in part reflects the fact that some companies still appear to have ample spare capacity (Section 3). Indeed, survey evidence suggests that companies are investing mainly to replace equipment, and more so than usual, rather than to expand capacity (Chart 2.7).

As investments are typically costly to reverse, some companies may hold off investing if they are uncertain about the demand outlook. Uncertainty about demand tends to be the most important factor holding back investment according to CBI surveys, and the proportion of companies citing uncertainty as a constraint remains elevated.

Tight bank credit conditions (Section 1) may also have constrained some companies' investment. In particular, investment by small and medium-sized enterprises (SMEs) might have been restrained, as they tend to rely more heavily on bank credit than some of their larger counterparts. SMEs account for around one third of business investment. To the extent that the FLS improves corporate credit conditions, that should support investment.

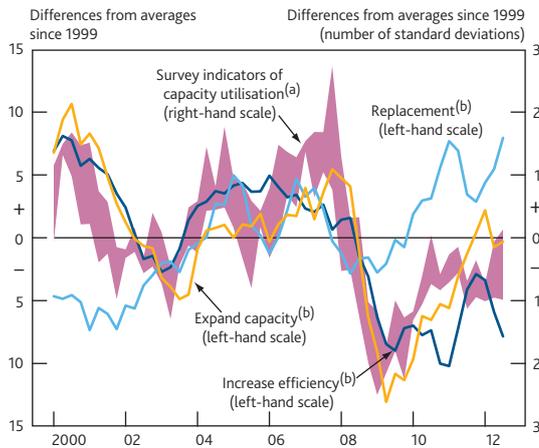
Businesses also finance investment using internal resources. The corporate sector in aggregate appears to have a large financial surplus. The implications of that for investment, however, will depend on which companies have accumulated assets and for what purpose.<sup>(1)</sup> Overall, surveys of investment intentions were below their historical averages in Q3, pointing to a muted near-term outlook for investment.

## Stockbuilding

Businesses' spending on stocks provided a significant boost to GDP growth in 2012 Q2 (Table 2.B). Surveys of stock adequacy suggest that manufacturing companies considered their level of stocks to be adequate in Q3, but distribution companies may want to cut back their stocks (Table 2.B).

(1) For more information see the box on pages 24–25 of the August 2012 Report.

**Chart 2.7** Reasons for investment and survey indicators of capacity utilisation



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

- (a) Three measures are produced by weighting together surveys from the Bank's Agents (manufacturing and services), the BCC (non-services and services) and the CBI (manufacturing, financial services, business/consumer services and distributive trades) using nominal shares in value added. The BCC data are non seasonally adjusted.
- (b) Manufacturing, financial services and business/consumer services surveys weighted by shares in real business investment. Companies are asked for the reasons for capital expenditure over the next twelve months. Four-quarter moving averages.

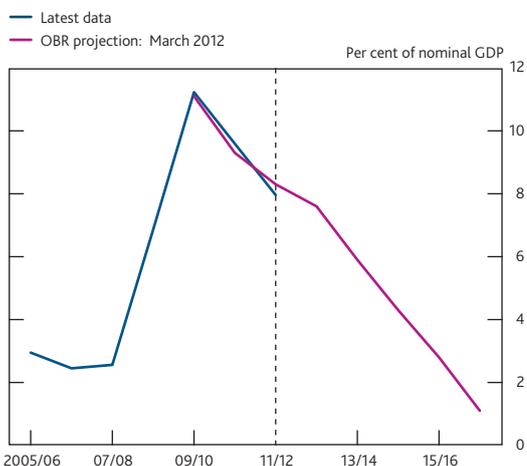
**Table 2.B** Stockbuilding and surveys of stock adequacy

	Averages			2012		
	1998–2007	2008–09	2010–11	Q1	Q2	Q3
<b>Stockbuilding<sup>(a)</sup></b>						
£ billions (reference year 2009)	1.5	-0.8	0.9	-0.6	1.2	n.a.
Percentage point contributions to quarterly real GDP growth	0.0	-0.2	0.1	-0.4	0.5	n.a.
<b>Surveys of stock adequacy<sup>(b)</sup></b>						
Manufacturing	14	19	10	15	14	14
Distribution	16	21	17	17	15	21

Sources: CBI and ONS.

- (a) Chained-volume measures. Excluding the alignment adjustment.
- (b) Averages of monthly data. Net percentage balances of companies that say that their present stocks of finished goods are more than adequate (manufacturing) or are high in relation to expected sales (distribution).

**Chart 2.8** Public sector net borrowing<sup>(a)</sup>



Sources: Office for Budget Responsibility and ONS.

- (a) Measures exclude the temporary effects of financial interventions and the projected effect of the transfer of the Royal Mail's existing pension liabilities and a share of its pension fund assets into public sector ownership.

## Government spending

A substantial fiscal consolidation is under way. The fiscal deficit continued to narrow during the past year: public sector net borrowing fell to 8% of nominal GDP in 2011/12 from 9.6% the previous year, a little lower than projected by the Office for Budget Responsibility (OBR) at the time of the March 2012 *Budget* (Chart 2.8).

The MPC's projections are conditioned on the fiscal plans set out in the 2012 *Budget*, supplemented by the OBR's associated *Economic and Fiscal Outlook*. The Government is aiming to reduce the fiscal deficit in part through lower government consumption, and the OBR's March 2012 projections suggested that nominal government consumption growth is likely to continue to be low. But because of the way in which the volume of government spending is estimated, measured real government consumption growth may be less weak.<sup>(1)</sup>

## 2.2 External demand and UK trade

Growth in several countries and regions has been relatively subdued (Chart 2.9), although policymakers in a number of countries, for example the ECB and the US Federal Reserve, have responded with new policy initiatives. In the latest data, the picture on activity has been mixed. In the euro area, for example, there are signs of continued weakness. In some other countries, however, there have been more promising signals — for example, in the United States, where quarterly GDP growth picked up in Q3.

### The euro area

The euro area faces significant challenges in addressing the imbalance of competitiveness within the currency union and reducing indebtedness in some countries. The risk that those challenges may be resolved in a disorderly manner appears to have adversely affected confidence, asset prices and bank funding costs across the region. Those factors, as well as the large fiscal consolidations under way in some countries, have weighed on activity. Euro-area GDP fell by 0.2% in 2012 Q2, and survey indicators suggest that it may have contracted further in Q3. The weakness in Q2 was broadly based, with output falling in some of the more vulnerable countries, such as Portugal and Spain, and weak growth in some core countries, including Germany.

In September, the ECB announced a prospective programme of Outright Monetary Transactions (OMTs). That announcement has been associated with falls in European bank funding costs. Although banks responding to the ECB's Q3 *Bank Lending Survey* noted a small improvement in funding conditions, that does not yet appear to have fed through to an easing in credit conditions. And consumer confidence remained low in October 2012 (Chart 2.10).

(1) For more information see the box on page 21 of the May 2012 *Report*.

## Household saving: evidence from the 2012 NMG Consulting survey

Real household income growth has been weak since 2007, which has been an important factor holding down household spending growth. In addition, households have saved more since the financial crisis. This box uses the latest survey carried out for the Bank by NMG Consulting to shed light on whether higher household saving will persist.<sup>(1)</sup>

Overall, the NMG survey suggests that households expected to save a similar amount next year to what they did over the past year. The results indicate that some of the influences that may have encouraged households to save more since the beginning of the crisis — in particular, tight credit conditions and a desire to reduce debts — are likely to continue to provide support.

The average amount that households reported that they had saved each month in the 2012 survey was similar to 2011. Over the next year there were more respondents planning to increase their saving than decrease it: 28% of households reported that they expected to save more and 13% expected to save less. But those cutting back on saving were planning on doing so by more, on average, than those increasing it. So, in aggregate, the survey suggests that saving next year will be similar to that in the past year.

The main reasons cited by those who expected to increase their saving were trying to reduce debts and saving for a big item or for a deposit on a house (Table 1). Households might need to save more before purchasing a property because of tight credit conditions. Around 45% of renters reported that they would like to buy a property but were prevented by deposit requirements. And of those respondents who reported that the lack of a deposit was preventing them from buying a property, around 70% thought that it would take three or more further years to save enough.

More generally, households, on balance, reported that credit constraints had increased over the past year. And around 25% of households reported that they had been put off spending by concerns that they would not be able to get further credit should they need it. Credit conditions should ease somewhat over the coming year, however, in part reflecting the impact of the Funding for Lending Scheme (Section 1).

Around one third of households who expected to increase their savings reported that they were planning to do so in order to reduce their debts (Table 1). Household debt, as a proportion of post-tax income, has fallen since 2007. But the NMG survey suggests that a significant proportion of households remain somewhat or very concerned about their current level

**Table 1** Reasons for expected increase in monthly saving over the next year<sup>(a)</sup>

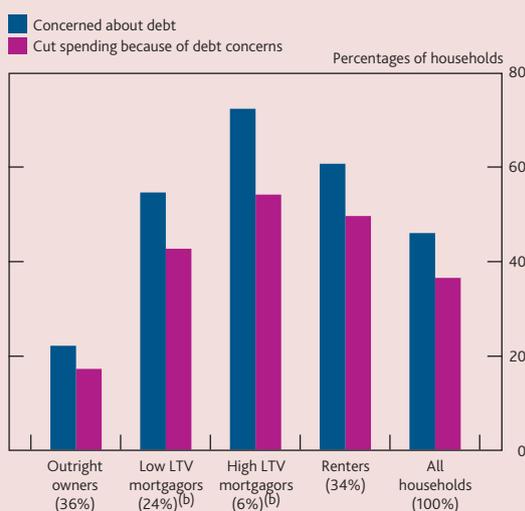
Percentages of respondents who reported that they expected to increase saving	Percentages of respondents who reported that they expected to increase saving	
	2011	2012
Saving for a big item	38	36
Trying to reduce debts	27	34
Saving for a deposit on a house/flat	22	27
Saving for personal commitments	24	26
Extra cash from increased income/lower bills	19	22
Saving for retirement	17	14
Worried about redundancy	15	12
Worried about future interest rate increases	8	8
Worried about the effect of euro-area developments	n.a.	6
Worried about future tax increases	8	6
Will have less guaranteed income	3	5
Extra cash from decreased mortgage payments	6	5
Making up for fall in the value of house/investments	4	2

Sources: NMG Consulting and Bank calculations.

(a) Those households that responded that they were planning to increase their monthly saving were allowed to specify up to four answers from the options listed. Question: 'What would you say are the main factors driving this increase (in saving)?'. Data based on online survey responses in both 2011 and 2012.

of debt (Chart A), and that respondents' concerns had increased, on balance, over the past two years. Debt concerns were highest among those with a high loan to value ratio mortgage and renters. Of those households who were concerned about their debt, around 80% said that they would be cutting back spending in response (Chart A), and around 20% said that they would be overpaying to clear their debts more quickly.

**Chart A** Concerns about debt and response to those concerns<sup>(a)</sup>



Sources: NMG Consulting and Bank calculations.

(a) Questions: 'How concerned are you about your current level of debt?' and 'What actions, if any, are you taking to deal with your concerns about your current level of debt?'. Figures in parentheses are the shares of households in each type of housing tenure. Data based on online survey responses in 2012.

(b) High loan to value (LTV) mortgagors are those households with a LTV ratio mortgage of above 75%; low LTV mortgagors are those with a ratio of 75% or below.

The proportion of households who reported that they were expecting to increase saving because of worries about redundancy remained quite low, and few households reported that they expected to increase their saving because of concerns about the euro area (Table 1). But some households appear to have become more uncertain about their future income. For example, around two fifths of households said they were more concerned about income falling sharply over the next year than they were last year.

The real income squeeze may have made it harder for some households who wished to save more to do so. As the squeeze on incomes wanes, some households might increase their saving. For example, some households reported that they expected to increase their saving over the next year because they would have extra cash (Table 1). Nonetheless, some households appear to expect the income squeeze to persist. For example, of those households who expected to reduce the amount they saved each month over the next year, the majority reported that was because of the higher expected cost of essential items or lower expected incomes (Table 2). Far fewer respondents reported that they were decreasing their saving as they had accumulated enough savings and other assets.

**Table 2** Reasons for expected decrease in monthly saving over the next year<sup>(a)</sup>

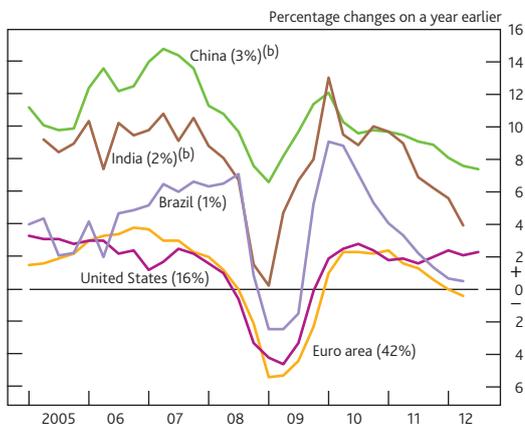
Percentages of respondents who reported that they expected to decrease saving	Percentages of respondents who reported that they expected to decrease saving	
	2011	2012
Unable to save as much because of higher cost of essential items	43	57
Unable to save as much because of lower income	37	39
The low level of interest rates	18	23
Have already bought the item was saving for	16	11
Have enough savings and other assets	9	10

Sources: NMG Consulting and Bank calculations.

(a) Those households that responded that they were planning to decrease their monthly saving were allowed to specify up to four answers from the options listed. Question: 'What would you say are the main factors driving this decrease (in saving)?'. Data based on online survey responses in both 2011 and 2012.

(1) The survey is the latest in a series of surveys carried out annually by NMG Consulting on behalf of the Bank. The 2012 survey was conducted between 12 September and 3 October. The main survey was undertaken online for the first time, although a smaller face-to-face survey including a subset of the questions was also conducted. The survey covered around 4,000 British households, and was designed and weighted to be a representative sample. This box reports results from the online surveys in 2012 and 2011. Further results will be reported in a forthcoming article in the *Bank of England Quarterly Bulletin*.

**Chart 2.9** GDP in selected countries and regions<sup>(a)</sup>



Sources: Eurostat, Indian Central Statistical Organisation, Instituto Brasileiro de Geografia e Estatística, National Bureau of Statistics of China, Thomson Reuters Datastream and US Bureau of Economic Analysis.

(a) Real GDP measures. Figures in parentheses are shares in UK goods and services exports in 2011 from the 2012 *Pink Book*. The latest observations for China and the United States are 2012 Q3 and for India, Brazil and the euro area are 2012 Q2.

(b) Non seasonally adjusted.

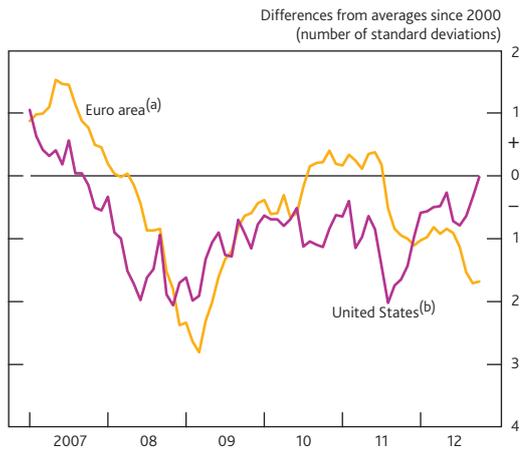
## The United States

The US economy expanded at a modest pace in 2012 H1 (Chart 2.9), and GDP rose by 0.5% in Q3. Growth in the second half of the year is likely to be negatively affected by weaker agricultural output due to the drought. In addition, post-tropical cyclone Sandy may pull down growth in Q4.

There have been some signs of improvement in the most recent indicators. For example, housing starts have risen over the past year, albeit from a low level; and consumer confidence increased in the four months to October to close to its historical average (Chart 2.10). That said, headwinds remain. Uncertainty about whether the substantial pre-programmed fiscal consolidation in 2013 will be enacted may have been weighing on activity. And, despite recent rises in payrolls, the labour market is likely to remain a drag on household spending: the unemployment rate in Q3 was around 2 percentage points above its historical average.

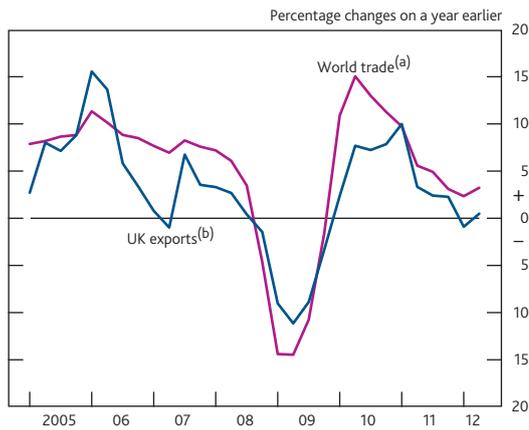
## Emerging economies

Several emerging economies saw a sharp initial recovery following the crisis, but four-quarter output growth has slowed since (Chart 2.9). That may in part reflect the impact of lower demand for their exports, as well as weaker domestic demand following policy tightening during 2010 and 2011. More recently, authorities in several emerging economies have loosened monetary and fiscal policy. And quarterly GDP growth in China is estimated to have picked up since the start of 2012, reaching 2.2% in Q3 according to official estimates.

**Chart 2.10 US and euro-area consumer confidence**

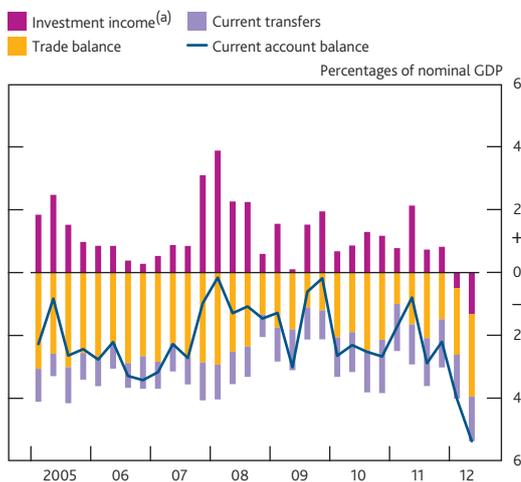
Sources: European Commission and Thomson Reuters/University of Michigan.

- (a) European Commission consumer confidence indicator. The composition of countries included in this indicator has changed over time to incorporate countries that joined the euro area after 1999.  
 (b) University of Michigan consumer sentiment index. Data are non seasonally adjusted.

**Chart 2.11 World trade and UK exports**

Sources: OECD and ONS.

- (a) Volume measure. Countries are weighted together according to shares in world trade in 2005.  
 (b) Chained-volume measure excluding the estimated impact of MTIC fraud. Official MTIC-adjusted data are not available, so the headline exports data have been adjusted for MTIC fraud by an amount equal to the ONS's imports adjustment.

**Chart 2.12 UK current account**

(a) Includes compensation of employees.

## UK trade

The impact of slower global growth on UK activity will depend upon its effect on world trade, as well as the share of that trade captured by UK companies. World trade and UK export growth have weakened following a sharp recovery in 2009/10 (**Chart 2.11**). Monthly trade data suggest that exports of goods grew in Q3. Within UK goods exports, EU exports have remained relatively weak, while those to non-EU countries have been on a broad upward trend.

UK companies' share of world trade depends in part on the price of UK exports relative to those in other countries. The substantial depreciation of sterling between mid-2007 and end-2008 boosted UK exporters' share of trade in goods relative to its previous downward trend. But services exports have tended to underperform relative to their past trend since the start of the financial crisis, as global demand has shifted away from activities in which the United Kingdom specialises, such as business and financial services.

Four-quarter import growth picked up a little over the year to 2012 Q2. Monthly trade data suggest that goods imports growth fell in Q3. Weak import growth over the past four years is, in part, likely to reflect subdued domestic demand. In addition, the lower level of sterling over the past few years may have led to some switching of expenditure away from imports towards domestically produced output.

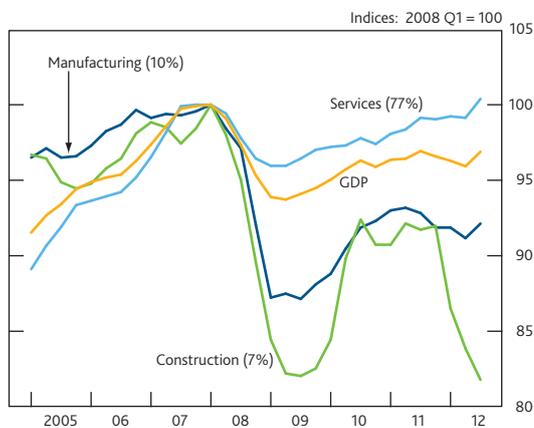
The trade deficit widened slightly in Q2 (**Chart 2.12**), and the current account deficit increased to the largest on record. The marked increase in the current account deficit since 2011 Q4 has in large part been accounted for by a fall in net investment income, which in turn in part reflected lower returns on UK foreign direct investment abroad. These data are, however, volatile and prone to revision. More generally, the current account deficit indicates a need for the UK economy to continue to shift the composition of spending away from domestic demand towards net exports.<sup>(1)</sup>

(1) The need for the United Kingdom to rebalance is discussed in Berry, S, Corder, M and Williams, R (2012), 'What might be driving the need to rebalance in the United Kingdom?', *Bank of England Quarterly Bulletin*, Vol. 52, No. 1, pages 20–30.

# 3 Output and supply

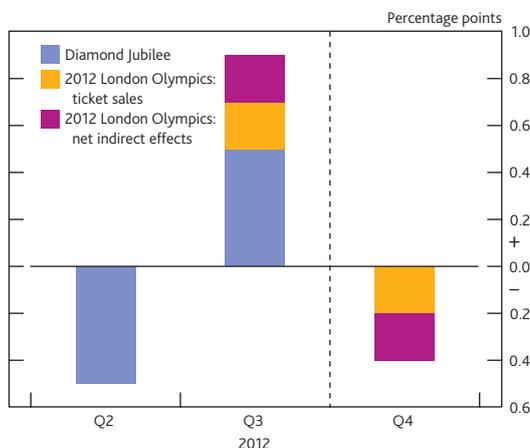
Output is estimated to have expanded by 1% in Q3. But in large part that reflected the effect of one-off events, and GDP growth is likely to fall sharply in Q4. Looking through quarterly volatility, GDP has been broadly unchanged over the past two years. In contrast, employment has grown strongly during that period, so that productivity growth has been weak. Unemployment remains elevated, however, and there is probably a considerable margin of slack in the labour market.

**Chart 3.1** GDP and sectoral output<sup>(a)</sup>



(a) Chained-volume measures. GDP is at market prices. Indices of sectoral output are at basic prices. The figures in parentheses show 2009 weights in gross value added.

**Chart 3.2** Bank staff estimates of the contributions of special events to quarterly growth in manufacturing and services output<sup>(a)</sup>



Sources: ONS and Bank calculations.

(a) The contribution of ticket sales for the Olympics has been estimated using the value of ticket sales reported by the London Organising Committee of the Olympic Games, of around £580 million. The contributions of the Diamond Jubilee and the indirect effect of the Olympics have been estimated by Bank staff from the monthly profile of growth in manufacturing and services output growth, and of growth in the services subsectors that are most likely to have been affected by these events.

GDP is estimated to have risen by 1% in Q3, but growth was boosted by the impact of one-off events. Abstracting from those, the underlying rate of growth appeared to remain muted in Q3, following two years in which output has barely grown. Although underlying activity may expand a little in Q4, headline growth is likely to be weak as the effects of the special events drop out or reverse: indeed, output may well fall (Section 3.1).

In contrast to output, employment has grown robustly since mid-2010, so that productivity has stagnated (Section 3.2). While some of that weakness in productivity may prove temporary, part of it appears to reflect a period of weak growth in underlying productivity. Unemployment remains elevated and there still appears to be a considerable margin of labour market slack (Section 3.3).

## 3.1 Output

GDP is provisionally estimated to have risen by 1% in Q3 (**Chart 3.1**). Within that, manufacturing and services output expanded by 1.2%, while construction output fell by 2.5%.

The rise in manufacturing and services output in Q3 overstates the underlying strength of activity. Around half a percentage point of the increase is likely to have been due to a rebound in activity after output in Q2 was temporarily depressed by the additional bank holiday for the Diamond Jubilee. Ticket sales for the Olympics also boosted growth, by around 0.2 percentage points. The indirect effects of the Games on output — such as a boost from higher tourism or a drag from disruptions to businesses — are difficult to estimate with certainty. But the profile of monthly growth in the sectors that are likely to have been most affected suggests that, on balance, the indirect effects probably raised growth by a similar amount to ticket sales (**Chart 3.2**).<sup>(1)</sup> Bank staff estimate that, had the additional Jubilee bank holiday and

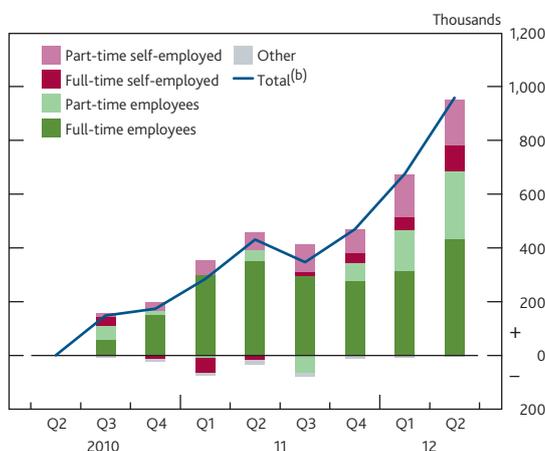
(1) The box on pages 26–27 of the May 2012 *Report* discussed the effects of the additional bank holiday associated with the Diamond Jubilee and the 2012 Olympic Games on the path of GDP growth in more detail.

**Table 3.A** Survey indicators of manufacturing and services output growth

	Averages			2012		
	1999–2007	2008–09	2010 Q3–2012 Q1	Q2	Q3	Oct.
BCC(a)	22	-10	7	10	1	n.a.
CBI(b)	12	-23	2	2	-14	n.a.
Markit/CIPS(c)	55	49	54	52	51	50

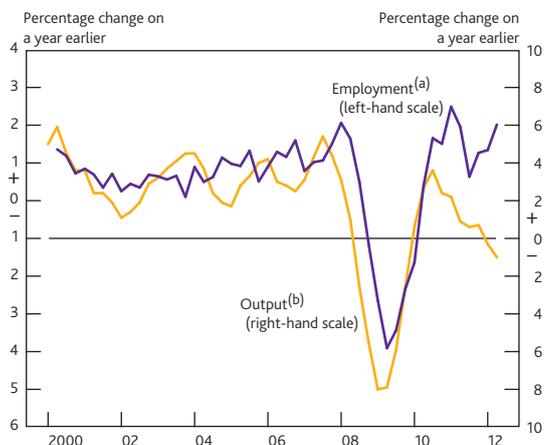
Sources: BCC, CBI, CBI/PwC, Markit Economics, ONS and Bank calculations.

- (a) Net percentage balances of respondents reporting an increase in domestic sales in the non-services and services sectors, weighted together using nominal shares in value added. Data are non seasonally adjusted.  
 (b) Net percentage balances of respondents reporting an increase in the volume of output in the manufacturing sector, in the volume of business in the financial services and business/consumer services sectors, and in the volume of sales in the distributive trades sector, weighted together using nominal shares in value added.  
 (c) Indices of changes in output (manufacturing) and in business activity (services), weighted together using nominal shares in value added.

**Chart 3.3** Cumulative changes in private sector employment since 2010 Q2<sup>(a)</sup>

Sources: Labour Force Survey and Bank calculations.

- (a) Based on quarterly LFS microdata that have been seasonally adjusted by Bank staff.  
 (b) Total may not equal sum of the components due to seasonal adjustment and because a small proportion of respondents to the LFS do not report their employment status.

**Chart 3.4** Private sector output and employment

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

- (a) LFS private sector employment. Calculated as the difference between LFS whole-economy employment and total public sector employment excluding publicly owned English further education corporations and sixth-form college corporations from the ONS's public sector employment release, adjusted to be on a calendar-quarter basis. Prior to 2008, this measure of public sector employment has been assumed to grow in line with total public sector employment from the ONS's public sector employment release. Data start in 2000 Q2.  
 (b) Market sector gross value added. Chained-volume measure at basic prices.

Olympics not occurred, manufacturing and services output would have grown by around a quarter of one per cent in both Q2 and in Q3. That contrasts with survey indicators, which suggest that growth slowed between Q2 and Q3 (Table 3.A).

Headline growth in manufacturing and services output is likely to slow sharply in Q4, as the effect from the additional Jubilee bank holiday drops out and the boost from the Olympic Games is reversed (Chart 3.2). Abstracting from those effects, survey indicators suggest that the pace of growth is likely to remain muted: the monthly Markit/CIPS surveys remained below their pre-crisis averages in October (Table 3.A).

GDP growth can also be materially affected by what happens in other, small sectors of the economy. Construction sector output fell in Q3, albeit at a slower pace than in the first half of 2012, pushing down GDP growth. The fall in Q3 was probably driven in part by a sharp contraction in new orders in Q2: that is likely to continue to weigh on construction growth in Q4.<sup>(1)</sup> Oil and gas extraction output provided a small fillip to GDP growth in Q3. But oil and gas extraction output has been gradually declining for over a decade and will reduce GDP growth in Q4 if that downward trend has resumed.

Given probable developments in these sectors, and the reversal of the boost from the Olympics, headline GDP may fall slightly in Q4. Looking through that volatility, underlying growth is likely to remain sluggish in the near term. The medium-term outlook for growth is discussed in Section 5.

### 3.2 Labour demand and productivity

As in previous quarters, strong growth in private sector employment more than offset falls in public sector employment in Q2, so that whole-economy employment continued to rise. Since mid-2010, the level of private sector employment has increased by around one million, and is now close to its 2008 peak. Public sector employment has fallen by more than 400,000 over that period.

Around half of the rise in private sector employment since mid-2010 has been accounted for by part-time working, either by employees or by the self-employed (Chart 3.3). That largely appears to reflect a choice by companies to use more part-time staff, as the number of people working part-time but reporting that they would prefer a full-time job has risen significantly over that period. But, as explained in the box on page 27, the shift towards part-time working has been balanced by rises in average hours worked, so that total hours worked have risen in line with employment.

Private sector employment growth appears to have remained strong into Q3. According to the Labour Force Survey (LFS),

(1) Recent trends in construction sector output are discussed in more detail in the box on page 27 of the August 2012 Report.

## Recent developments in private sector employment and hours worked

Around half of the rise in private sector employment since the middle of 2010 has been accounted for by part-time employment (Chart 3.3). As a result, the share of part-time employment has picked up since 2010 (Table 1).

**Table 1** Private sector employment shares and average hours worked<sup>(a)</sup>

	Averages				
	2002-07	2008-09	2010	2011	2012 H1
<b>Percentages of private sector employment<sup>(b)</sup></b>					
Full-time	75.9	75.5	74.3	74.3	73.5
Part-time	23.8	24.3	25.5	25.5	26.2
<b>Average hours</b>					
Full-time	38.3	37.7	37.8	38.1	38.3
Part-time	16.0	15.7	15.8	15.9	16.2

Sources: Labour Force Survey and Bank calculations.

- (a) Based on quarterly LFS microdata that have been seasonally adjusted by Bank staff.  
 (b) Percentages may not sum to 100 due to seasonal adjustment and because a small proportion of respondents to the LFS do not report their employment status.

Despite that increase in the share of part-time working, total hours worked have increased broadly in line with employment since 2010 (Chart A). That is because average hours worked by both those in part-time employment and those in full-time employment have increased since 2010 (Table 1), offsetting the shift towards part-time working.

**Chart A** Private sector employment and hours worked<sup>(a)</sup>



Sources: Labour Force Survey and Bank calculations.

- (a) Four-quarter moving averages.  
 (b) Based on quarterly LFS microdata that have been seasonally adjusted by Bank staff.  
 (c) As defined in footnote (a) of Chart 3.4.

**Chart 3.5** Private sector labour productivity<sup>(a)</sup>



- (a) Market sector output per hour.  
 (b) The continuation of the pre-2008/09 recession trend is calculated by projecting forward labour productivity from 2008 Q2 using the average quarterly growth rate between 1999 Q3 and 2008 Q1.

whole-economy employment increased by 212,000 in the three months to August. That was probably driven by the private sector, as the fiscal consolidation is likely to have been associated with further weakness in public sector employment. Some, but not all, of the rise in employment in the three months to August probably reflected hiring associated with the Olympic Games: temporary employment rose by around 60,000, while employment in London increased by 100,000.

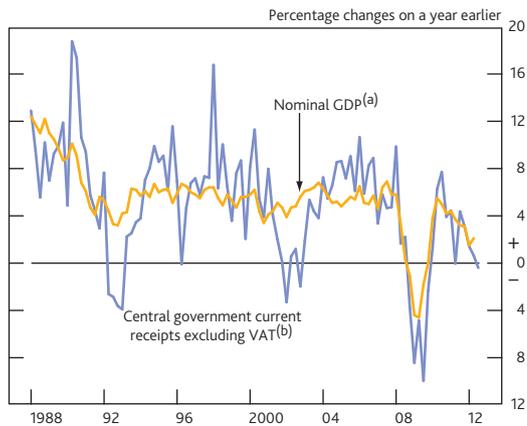
The strength in private sector employment growth since the middle of 2010 contrasts starkly with the weakness in private sector output growth, especially in recent quarters (Chart 3.4). As a result, private sector productivity growth is estimated to have been weak in recent years. That follows a pronounced fall in productivity during the 2008/09 recession, when employment declined by less than output (Chart 3.5).

According to the current vintages of employment and output data, therefore, since mid-2010 the level of productivity has on average been around 10% lower than it would have been had it continued to grow at its pre-2008/09 recession average rate (Chart 3.5). As discussed in the next subsection, it is possible that the true shortfall is a little smaller than suggested by the current data and a simple pre-recession trend. But even allowing for such measurement issues, the shortfall in productivity appears large.

### Measurement issues

Initial estimates of GDP are revised as new information becomes available. But any revisions to output are likely to be

**Chart 3.6** Nominal GDP and central government current receipts excluding VAT



Sources: ONS and Bank calculations.

- (a) At market prices. Data are to 2012 Q2.  
 (b) VAT receipts are excluded because the temporary reduction in the standard rate of VAT to 15% between 1 December 2008 and 31 December 2009 and the increase in the standard VAT rate to 20% in January 2011 distort the relationship between current VAT receipts and money spending. Data are to 2012 Q3.

small relative to the scale of the shortfall in productivity. The MPC's backcast, which is based on the pattern of past revisions to GDP data, suggests that the level of output in 2012 Q2 is unlikely to be revised enough to explain much of the productivity shortfall. And other indicators of activity — such as government current receipts — are broadly consistent with the recent pattern of nominal output growth (**Chart 3.6**).<sup>(1)</sup> Significant downward revisions to employment are also unlikely: although the LFS estimate of employment — based on a survey of households — is uncertain due to sampling variation, an alternative measure based on a survey of companies, Workforce Jobs, points to a similar rise in employment since 2010.

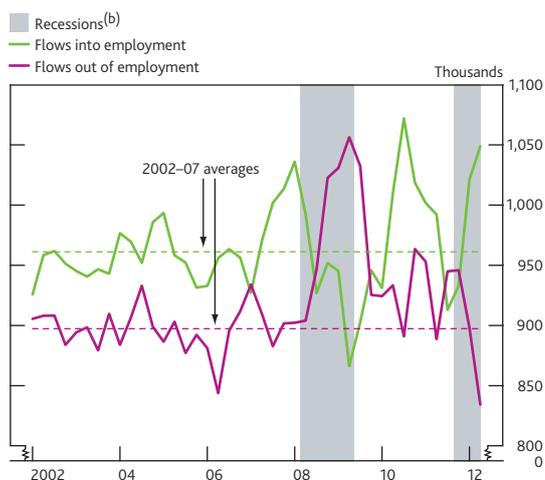
Within private sector employment, self-employment has risen by around 270,000 since mid-2010 (**Chart 3.3**). That could mean that the rise in employment overstates the strength of labour demand, for example if these people became self-employed because they were unable to find a job within an established company. But under the extreme assumption that the newly self-employed had yet to generate any output, that would account only for about 1 percentage point of the shortfall in measured productivity.

In addition to such measurement issues, it is not clear whether past rates of productivity growth provide a good guide to future trends. For example, oil and gas extraction output has been in structural decline over the past decade, as North Sea oil fields have aged. Since oil and gas extraction uses relatively little labour, that reduction in output has been accompanied by only modest falls in employment, causing productivity to decline. In addition, it seems unlikely that the strong growth in financial services sector productivity before the financial crisis, which was associated with financial innovation and rapid growth in financial sector balance sheets, was sustainable. Together, these factors could account for 1 to 2 percentage points of the productivity shortfall.

Overall, measurement issues are unlikely to explain much of the shortfall between productivity and the continuation of its pre-crisis trend, suggesting that most of it reflects other factors. If these other factors have shifted the relative fortunes of different sectors and companies, that could help to explain the size of the shortfall. Given the large number of companies operating in the United Kingdom, even small changes in companies' hiring and firing decisions can lead to large changes in employment and so productivity. Since mid-2010, for example, quarterly flows into and out of employment have averaged around one million (**Chart 3.7**), dwarfing the rise in employment over that period.

The remainder of this subsection discusses two broad categories of explanations for the shortfall in productivity. On

**Chart 3.7** Flows into and out of employment<sup>(a)</sup>



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

- (a) Two-quarter moving averages.  
 (b) Recessions are defined as at least two consecutive quarters of falling output (at constant prices) estimated using the latest data. The recessions are assumed to end once output began to rise.

(1) Uncertainties about current GDP data are discussed in more detail in an article by the ONS, 'The productivity conundrum, explanations and preliminary analysis', available at [www.ons.gov.uk/ons/dcp171766\\_283259.pdf](http://www.ons.gov.uk/ons/dcp171766_283259.pdf).

the one hand, the weakness in demand itself may have meant that measured productivity has been weak. In that case, productivity could rebound sharply as demand recovers. On the other hand, factors such as the financial crisis may have reduced growth in underlying productivity — the amount of output that a given amount of labour could produce if demand were not a constraint on output. In that case, productivity will depend on the extent to which those impediments — which may also have been associated with weak demand — dissipate. The candidate explanations for the productivity shortfall are summarised in the box on page 33.

### Demand and measured productivity

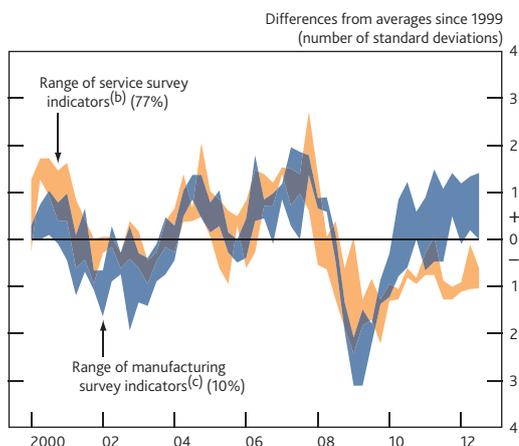
Some of the shortfall in productivity may be directly associated with the weakness of demand itself. For example, some companies may have been unable to cut employment below a minimum needed to keep the business in operation. Other companies may have held on to staff in anticipation of a pickup in demand, perhaps because those staff have acquired company-specific skills that would be difficult or costly to replace. In these cases, productivity could increase rapidly if demand recovers and existing staff are able to meet that demand, or if demand remains weak and companies can no longer hold on to staff.

Employment flows show whether changes in employment reflect hiring or firing. These flows suggest that part of the fall in productivity during the 2008/09 recession reflected companies retaining staff, as outflows from employment rose by much less than they did in the recessions of 1990/91 and 1980/81. Over the past two years, flows out of employment have not increased further (**Chart 3.7**), suggesting that some companies may still be holding on to staff. But, since mid-2010, most of the employment strength — and so productivity weakness — reflects greater flows into employment: companies have, in aggregate, been creating new jobs.

Productivity growth may also have been weak if some businesses have to devote more effort to generating custom when demand is subdued, effectively reducing their ability to produce output. In such cases, productivity is likely to pick up as demand recovers, since companies should be able to meet any increase in demand with their existing resources.

Such companies may report that they have little spare capacity at present but, provided that there has been no change in their ability to produce output, they should have ample scope to expand production should demand recover. To the extent that there are many such companies, the fact that the proportion of companies reporting that they are operating at or above normal capacity has risen since the middle of 2009 (**Chart 3.8**) would not point to material constraints on the potential for output to expand. But that narrowing in the margin of spare capacity within companies could also reflect a

**Chart 3.8** Survey indicators of capacity utilisation by sector<sup>(a)</sup>



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

- (a) The figures in parentheses show 2009 weights in whole-economy gross value added.  
 (b) Includes measures of services capacity utilisation from the Bank's Agents, BCC and CBI. The Agents' data are end-quarter observations. The CBI measure weights together financial services, business/consumer services and distributive trades surveys using shares in nominal value added. The BCC data are non seasonally adjusted.  
 (c) Includes measures of manufacturing capacity utilisation from the Bank's Agents and CBI, and a measure of non-services capacity utilisation from BCC. The Agents' data are end-quarter observations. The BCC data are non seasonally adjusted.

period of weak growth in underlying productivity, and greater constraints on expanding output, as explained in the next subsection.

### Constraints on underlying productivity growth

The financial crisis has probably impeded underlying productivity growth: international evidence indicates that past financial crises have been associated with pronounced and persistent reductions in the level of productivity. Most directly, the tightening of credit conditions following the crisis increased the cost of working capital and reduced its availability. That may have prevented some companies from producing output, or reduced the efficiency of businesses' production processes — for example if they have had to operate with smaller buffers of stocks.

The weakness in business investment since the crisis — which probably reflects tighter credit conditions, as well as uncertainty about the demand outlook (Section 2) — is also likely to have restrained productivity growth. Weak investment will have reduced growth in the capital stock. Coupled with the resilience of employment, that will have adversely affected the amount of capital that people have to work with and so constrained growth in underlying productivity.

Underlying productivity growth may also have been hampered by lower take-up of more innovative products and processes. Not only does survey evidence suggest that tighter credit conditions, together with heightened uncertainty about the outlook for demand, have stunted the pace of innovation within businesses,<sup>(1)</sup> but the weakness in investment is also likely to mean that companies have been adopting new technologies at below pre-crisis rates.

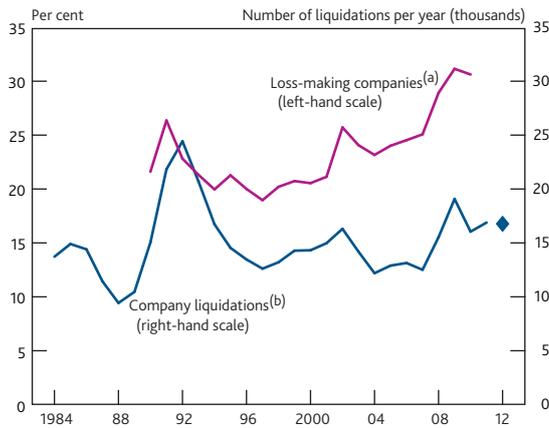
The crisis may also have prevented finance and other resources from being put to their most productive use within the economy, and, related to that, have impeded the reallocation of capital as the economy restructures. There is some evidence that net rates of return across sectors, relative to their 1997–2007 averages, have diverged since the crisis, indicating that capital is presently inefficiently allocated.

One potential impediment to the effective reallocation of capital relates to forbearance. In particular, forbearance by banks on existing loans, coupled with the low level of Bank Rate, may have allowed businesses that will face lower demand in the longer term to continue trading. Although such forbearance may have allowed some viable businesses to remain in operation through a temporary period of weak demand, others may find it hard to compete in their markets

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(1) See the UK innovation survey 2011, conducted by the Department for Business, Innovation and Skills, available at [www.bis.gov.uk/assets/biscore/science/docs/ff12-p107-first-findings-uk-innovation-survey-2011.pdf](http://www.bis.gov.uk/assets/biscore/science/docs/ff12-p107-first-findings-uk-innovation-survey-2011.pdf).

**Chart 3.9** Company liquidations in England and Wales and an estimate of loss-making companies



Sources: Bureau van Dijk, The Insolvency Service and Bank calculations.

- (a) The number of companies that reported negative pre-tax profits in each year as a percentage of the total number of private non-financial companies in the Bureau van Dijk data set that report data on pre-tax profits. Companies in the mining and quarrying, electricity and gas supply, and water supply sectors and extra-territorial organisations are excluded from the calculations. Data are to 2010.
- (b) Changes to legislation, data sources and methods of compilation mean the statistics should not be treated as a continuous and consistent time series. Since the Enterprise Act 2002, a number of administrations have subsequently converted to creditors' voluntary liquidations. These liquidations are excluded from both the headline figures published by The Insolvency Service and the chart. The diamond for 2012 is based on data for Q1 and Q2.

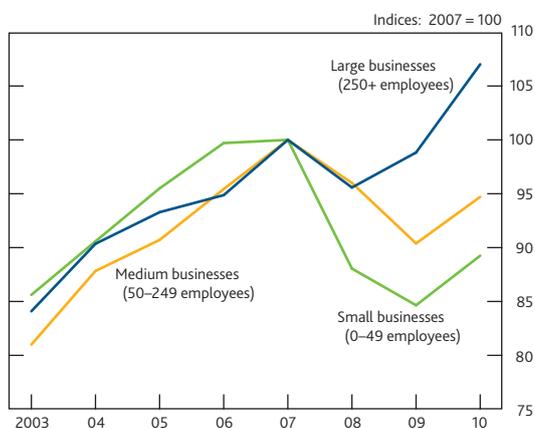
when demand recovers. It is difficult to judge how significant this effect has been. But company liquidations have risen only modestly since the 2008/09 recession, especially compared with the rise following the 1990/91 recession, even though data from companies' accounts suggest that the proportion of companies making a loss has picked up sharply since 2007 (Chart 3.9).

In addition, underlying productivity growth may have been weak if banks have been less willing to lend to new or dynamic companies that have the potential to achieve higher productivity, for example because those loans may carry greater risks. The number of company births dropped in 2009 and remained low in 2010, according to data from the Inter-Departmental Business Register.

Nonetheless, new companies have been created and others have expanded. The nature of the recession may, however, have caused these businesses to increase output by taking on more staff than usual. New and expanding companies could have used more labour-intensive methods of production because the financial crisis has made it more expensive to finance investment. And it is also possible that, since it is usually more costly to reverse investment decisions than employment decisions, greater uncertainty has made such companies less inclined to invest.

A misallocation of labour and skills could also have hampered growth in underlying productivity, for example if fewer opportunities for career progression have existed than before the 2008/09 recession. LFS microdata suggest that occupational change has recently been associated with smaller wage increases than was the case in the past. That could indicate that people have not been able to move into higher-productivity occupations at the same rate as they did before the recession.

**Chart 3.10** Estimates of output per employee by size of business<sup>(a)</sup>



Sources: Bureau van Dijk and Bank calculations.

- (a) Output is measured as the sum of operating profit and remuneration of employees. Calculated using data for private non-financial companies in the Bureau van Dijk data set. Companies in the mining and quarrying, electricity and gas supply, and water supply sectors and extra-territorial organisations are excluded from the calculations. Observations within the first and last percentile of the distribution within each sector and year are omitted.

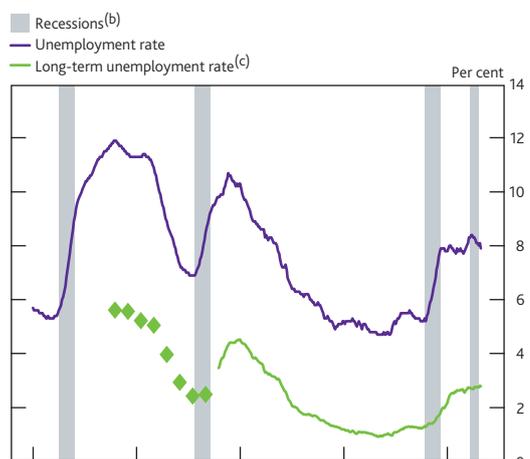
Underlying productivity growth may have weakened if companies have had to devote more effort to essential functions that do not boost measured output. For example, some contacts of the Bank's Agents, especially in financial services, report that the burden of regulation has increased in recent years. But that is unlikely to account for much of the productivity shortfall.

It is unclear whether the shortfall in measured productivity has arisen mainly because weakness in demand has meant that measured productivity has been weak or mainly because underlying productivity growth has been weak. Some pieces of evidence support both explanations. For example, data from companies' accounts suggest that most of the weakness in productivity growth has been accounted for by small and medium-sized businesses (Chart 3.10). That could be related to the weakness in demand, since smaller businesses may be more likely to be affected by minimum staffing requirements.

**Chart 3.11** Participation rate<sup>(a)</sup>

Source: ONS (including the Labour Force Survey).

- (a) Percentage of the 16+ population. Three-month rolling measure.  
 (b) Recessions are defined as in Chart 3.7.

**Chart 3.12** Unemployment rates<sup>(a)</sup>

Source: ONS (including the Labour Force Survey).

- (a) Rolling three-month measures unless otherwise stated.  
 (b) Recessions are defined as in Chart 3.7.  
 (c) Defined as those people who have been unemployed for more than twelve months divided by the economically active population. Data prior to 1992 are based on non seasonally adjusted, annual LFS microdata. These annual observations correspond to the March-May quarter.

**Table 3.B** Selected indicators of labour market slack

	Averages			2012		
	1998–2007 <sup>(a)</sup>	2010	2011	Q1	Q2	Q3
LFS unemployment rate <sup>(b)</sup>	5.3	7.9	8.1	8.2	8.0	7.9
Claimant count unemployment rate	3.2	4.6	4.7	4.9	4.9	4.8
Weighted non-employment rate <sup>(b)(c)</sup>	7.6	9.4	9.5	9.5	9.3	9.2
Vacancies/unemployed ratio <sup>(b)(d)</sup>	0.41	0.19	0.18	0.18	0.18	0.19
<b>Recruitment difficulties for skilled employees<sup>(e)</sup></b>						
Manufacturing	12	9	13	19	21	14
Services <sup>(f)</sup>	31	13	18	17	18	15

Sources: CBI, CBI/PwC, ONS (including the Labour Force Survey) and Bank calculations.

- (a) Unless otherwise stated.  
 (b) The figure for 2012 Q3 shows data for the three months to August.  
 (c) Percentage of the 16–64 population. This measure weights together different types of non-employed by the 1998–2007 averages of quarterly transition rates of each group into employment derived from the LFS.  
 (d) Number of vacancies (excluding agriculture, forestry and fishing) divided by LFS unemployment. Average is since 2001 Q2.  
 (e) Balances of respondents to the CBI surveys expecting skilled labour to limit output/business over the next three months (in the manufacturing sector) or over the next twelve months (in the services sector). Averages are since 1998 Q4.  
 (f) Balances of respondents for the financial, business/consumer services sectors are weighted together using employee jobs shares from Workforce Jobs.

But it could also be because smaller businesses are more reliant on bank credit.

Overall, the MPC judges that much of the shortfall in productivity reflects a period of weak growth in underlying productivity, albeit with a wide variety of experiences across companies within that. But that need not imply that underlying productivity growth will remain weak (Section 5).

### 3.3 Labour supply and labour market slack

#### Labour supply

Labour supply depends, in part, on the proportion of the adult population participating in the labour market. The participation rate fell modestly after the 2008/09 recession — but by much less than following the 1990/91 recession — and it has risen since the start of 2010 (Chart 3.11).

Some people may have been discouraged from participating in the labour market by elevated unemployment. But that effect may have been smaller than in the past because the welfare system has been changed since the early 1990s to increase the incentives for those out of work to seek jobs. Other factors may also have boosted participation. For example, the weakness in households' real income growth (Section 2) may have boosted participation among people who would not normally look for work, such as potential second earners and those nearing retirement.

#### Labour market tightness

The unemployment rate — one indicator of the balance between labour demand and supply — fell to 7.9% in the three months to August, but remained well above its rate prior to 2008 (Chart 3.12). The amount of downward pressure that those seeking jobs place on wages may diminish the longer they have been unemployed, for example if they lose the skills that they need to compete effectively for jobs. But the long-term unemployment rate remained relatively low in the three months to August (Chart 3.12).

A broader indicator of labour market tightness, the weighted non-employment rate, also points to a significant margin of slack (Table 3.B). As well as the unemployed, this measure takes into account people who are not currently participating in the labour market — since they may want to work in the future — weighting different groups by the rates at which they have moved into jobs in the past.

Survey measures of recruitment difficulties provide another indicator of slack. The proportion of companies reporting recruitment difficulties in the manufacturing sector was around average in Q3. But in the service sector that proportion remained well below its historical average (Table 3.B). Overall, it is likely that a considerable amount of labour market slack remains.

## Explaining the productivity shortfall

Since mid-2010, the level of productivity has on average been around 10% below a continuation of its pre-crisis trend. This box sets out some of the factors that may help to account for that shortfall in measured productivity. The factors at the

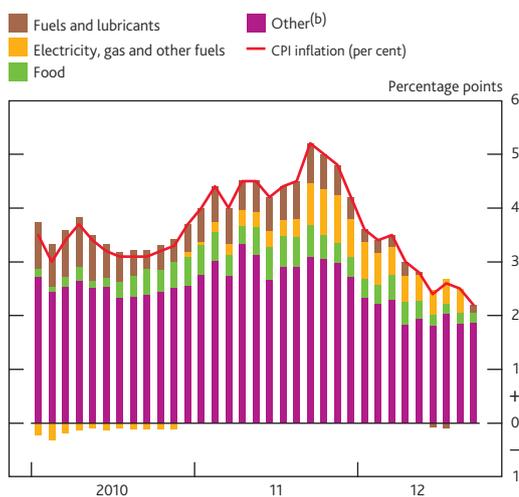
top of the table are data issues, those in the middle relate weakness in demand directly to weakness in measured productivity, while those towards the end relate to weak growth in underlying productivity.

Potential explanation	Comment
Current data exaggerate the weakness in output growth	The broad pattern of output growth is supported by other activity indicators, suggesting that any revisions are likely to be small. Based on the MPC's central backcast, this is likely to account for only around 1 percentage point of the shortfall.
Current data exaggerate the strength in employment growth	LFS data could overstate the strength of labour demand. But LFS data are corroborated by Workforce Jobs data. And even in the extreme case that the newly self-employed since mid-2010 had yet to produce any output, that would account only for about 1 percentage point of the shortfall.
Past rates of productivity growth do not provide a good guide to the future trend	A structural decline in energy extraction output and more sustainable rates of productivity growth in the financial services sector could together account for 1 to 2 percentage points of the productivity shortfall.
Retention of staff by companies, out of necessity or choice	This could account for a significant part of the fall in productivity following the 2008/09 recession, when employment fell less sharply than output. But most of the strength in employment since mid-2010 reflects greater flows into employment.
More effort being devoted to generating custom because demand is subdued	This would be consistent with the narrowing in survey indicators of spare capacity within companies since 2009, but that narrowing could also reflect weak underlying productivity growth.
Increased cost, and reduced availability, of working capital	This could have prevented some companies from producing output, or reduced the efficiency of businesses' production processes.
Weaker business investment and lower take-up of innovative products and processes	This will have adversely affected the amount of capital that people have to work with. And there is likely to have been a reduction in the pace of both innovation and companies' adoption of more innovative technologies.
Impediments to the allocation of resources to companies with the greatest potential to boost productivity, and to the reallocation of capital as the economy rebalances	Evidence on company liquidations could indicate that forbearance, coupled with the low level of Bank Rate, has allowed businesses that will face lower demand in the longer term to continue trading. And a drop in the number of company births may indicate that banks may have been less willing to lend to new or dynamic companies that have the potential to achieve higher productivity.
New and expanding companies may have used more labour-intensive methods of production	This could help to explain the rise in flows into employment since mid-2010. Companies may have been less inclined to invest in capital due to the higher cost of finance or because of the more uncertain outlook.
Misallocation of labour and skills, for example if opportunities for career progression have diminished	Evidence that occupational change is presently associated with smaller wage increases than was the case in the past could indicate that fewer people have been moving into higher-productivity occupations.
More effort being devoted to activities that are essential to the functioning of the business (eg regulation)	This is supported by some contacts of the Bank's Agents, especially financial services companies. But it is unlikely to explain more than a small part of the strength in employment and so the shortfall in productivity.

# 4 Costs and prices

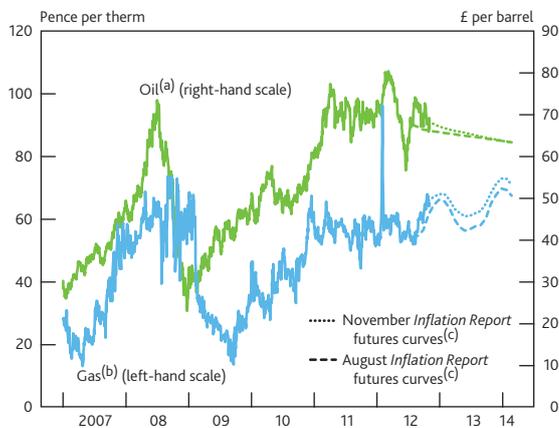
CPI inflation averaged 2.4% in 2012 Q3, significantly below its 5.2% peak in September 2011. Lower energy price inflation has accounted for part of the past fall in CPI inflation, but gas and electricity prices will add to inflation in coming months. Import price inflation fell in Q2. Earnings growth continued to be subdued, but unit labour cost growth remained more robust and companies' profit margins appeared squeezed. Indicators of longer-term inflation expectations were mixed, but most remained broadly in line with their averages.

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



(a) Contributions to annual CPI inflation. Data are non seasonally adjusted.  
 (b) Calculated as a residual. Includes a rounding residual.

**Chart 4.2 Sterling oil and wholesale gas prices**



Sources: Bank of England, Bloomberg, Thomson Reuters Datastream and Bank calculations.

(a) Brent forward prices for delivery in 10–21 days' time converted into sterling.  
 (b) One-day forward price of UK natural gas.  
 (c) The futures prices shown are averages during the fifteen working days to 1 August 2012 (dashed lines) and 7 November 2012 (dotted lines). The sterling oil futures curve is calculated by assuming that the sterling-dollar exchange rate remains at its average level during those respective fifteen-day periods.

CPI inflation edged down to 2.2% in September 2012, but is likely to pick up in coming months, in part as a result of increased tuition fees and higher household energy bills (Section 4.1). The near-term outlook for inflation is higher than was expected at the time of the *August Report*, and CPI inflation now appears likely to remain above the 2% target in the near term.

The future path of inflation will be influenced by the evolution of global costs and prices (Section 4.2). Prospects for inflation will also depend on developments in labour costs and on how companies respond to changes in costs when setting prices, both of which will be influenced by inflation expectations (Section 4.3).

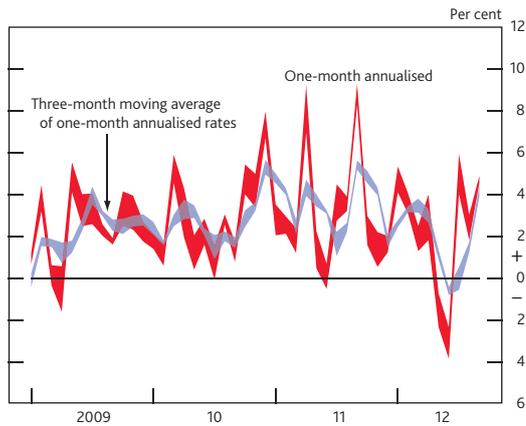
## 4.1 Consumer prices

The rate of inflation was 2.2% in September, down from 2.4% in June. That decline was more than accounted for by a lower contribution from gas and electricity prices (Chart 4.1): that contribution fell sharply as price rises that occurred in Autumn 2011 dropped out of the twelve-month comparison. Set against that was an increase in the contribution from petrol prices, reflecting higher sterling oil prices (Chart 4.2).

The MPC's target relates to the twelve-month rate of CPI inflation, but at times that rate is heavily influenced by changes in prices that occurred some time ago. Changes over shorter time horizons, adjusted to take account of price movements that are repeated at similar points each year, may therefore provide a more timely guide to current inflationary pressures.<sup>(1)</sup> These measures are volatile, but suggest that monthly consumer price inflation picked up over the three months to September — in part reflecting higher petrol prices — to annualised rates above the 2% target (Chart 4.3).

(1) See the box on page 33 of the May 2012 *Inflation Report* for more details.

**Chart 4.3** Measures of monthly CPI inflation excluding VAT<sup>(a)</sup>



Sources: ONS and Bank calculations.

(a) The swathes contain a range of estimates based on three different levels of aggregation. These are: headline CPI, twelve main divisions and 39 main groups. All estimates exclude the estimated impact of changes in VAT. X-12 is used to seasonally adjust these headline, division and group indices since 1996. Division and group indices are re-weighted into a headline index using weights in the consumer price basket. In addition, alternative measures are obtained by only seasonally adjusting those divisional or group indices that are found to display seasonal variation before re-weighting. See the box on page 33 of the May 2012 *Inflation Report* for more details.

It is likely that twelve-month CPI inflation will pick up over the next few months. In part, that reflects increases in university undergraduate tuition fees, which will add to inflation from October 2012 onwards. As the rise in fees only applies to new undergraduates, a similarly sized positive contribution is likely to persist over the next three years as the proportion of students paying the higher level of fees rises each year. But the exact impact will be sensitive to the size and composition of the student body.

In addition, the contribution from gas and electricity prices to CPI inflation is likely to pick up. The contribution from domestic energy prices is likely to increase by about 0.2 percentage points by the end of 2012, 0.3 percentage points higher than was expected three months ago. That reflects announcements by a number of major gas and electricity suppliers of price rises of between 6% and 11%, higher than the benchmark assumption of rises averaging 2.5% incorporated into the *August Report*. Higher wholesale gas prices, which increased over the past three months (**Chart 4.2**), are only part of the explanation, with most domestic energy suppliers citing increases in other costs, such as those associated with distribution, as a reason for price rises.

Overall, it is likely that inflation in the near term will be higher than was expected at the time of the *August Report*, and will remain above the 2% target.

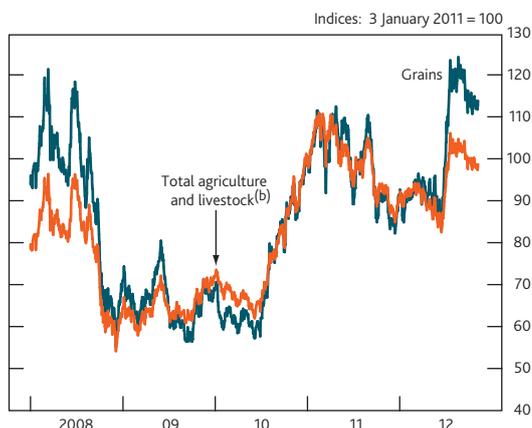
## 4.2 Global costs and prices

Energy, food and import prices have had a substantial impact on CPI inflation in recent years, and will continue to be key determinants of the path of future inflation. They affect CPI inflation directly, for example through household energy bills. In addition, they affect inflation indirectly through their impact on companies' costs.

Sterling oil prices have been volatile over the past three months. Movements in oil prices have a significant impact on CPI inflation: given the current level of oil prices, a 10% change in the sterling price of oil leads to a change in the direct contribution of petrol to inflation of around 0.2 percentage points. The oil futures curve is presently downward sloping (**Chart 4.2**). But the outlook for oil prices remains sensitive to both world demand prospects and factors affecting oil production, for example political tensions in the Middle East.

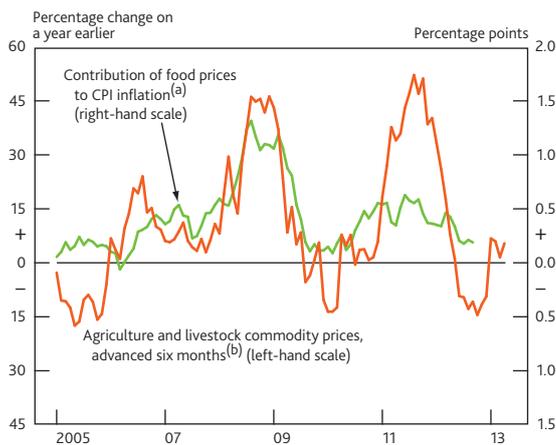
Food commodity prices have increased over the past six months (**Chart 4.4**). That largely reflects sharp rises in the prices of some grains following the adverse impact on crop yields of unusual weather patterns. Other food commodity prices are likely to be affected by the increases in grain prices in due course. For example, grains are an important

**Chart 4.4** US dollar food commodity prices<sup>(a)</sup>



Sources: S&P indices and Thomson Reuters Datastream.

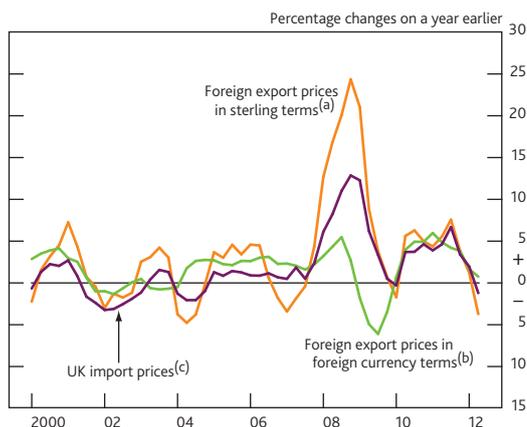
(a) Calculated using S&P US dollar commodity price indices.  
(b) Including grain prices.

**Chart 4.5** Sterling food prices

Sources: Bank of England, ONS, S&P indices, Thomson Reuters Datastream and Bank calculations.

(a) The latest observation is September 2012.

(b) Monthly average of daily S&P US dollar commodity price index, converted into sterling using the monthly average of market exchange rates. The latest observation is October 2012.

**Chart 4.6** UK import prices and foreign export prices excluding oil

Sources: Bank of England, CEIC, Eurostat, ONS, Thomson Reuters Datastream and Bank calculations.

(a) Domestic currency export prices of goods and services of 45 countries weighted according to their shares in UK imports, divided by the average sterling effective exchange rate index over the quarter. The sample does not include any major oil exporters. The observation for 2012 Q2 is an estimate. In 2012 Q2, export prices for Pakistan are assumed to grow at their 2012 Q1 rate.

(b) Domestic currency export prices of goods and services of 45 countries, as defined in footnote (a).

(c) Goods and services excluding fuels deflator, excluding the impact of MTIC fraud.

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

	Averages		2011	2012		
	2001–07	2008–10		Q1	Q2	Aug. <sup>(b)</sup>
(1) AWE regular pay	3.9	2.1	2.1	1.9	2.1	2.0
(2) Pay settlements <sup>(c)</sup>	3.3	2.6	2.1	2.3	2.2	2.2
(1)–(2) Regular pay drift <sup>(d)</sup>	0.6	-0.5	-0.1	-0.4	-0.1	-0.2
(3) Total AWE	4.3	1.5	2.6	0.5	2.2	2.0
(3)–(1) Bonus contribution <sup>(d)</sup>	0.4	-0.6	0.5	-1.4	0.1	0.0

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

(a) Based on quarterly data unless otherwise stated.

(b) Data in the two months to August.

(c) Average over the past twelve months, based on monthly data.

(d) Percentage points.

component of feed for some animals. And any additional adverse shocks to the supply of grains could lead to further marked commodity price rises, as stocks are already low.

Changes in the prices of food commodities eventually feed through into retail food prices. But the process of combining food commodities with other inputs in the supply chain means that movements in consumer food price inflation take a while to come through, and are typically smaller than movements in commodity price inflation (Chart 4.5). The rises in food commodity prices that occurred during the summer are likely to make a small positive contribution to CPI inflation during 2013. That could be offset, at least in part, by the appreciation of sterling against the euro since the summer of 2011, as a significant fraction of the food consumed in the United Kingdom is imported from the euro area, with little subsequent processing.

Increases in a wide range of commodity prices — including food — over the past few years have raised the production costs of companies around the globe, and so have been reflected in higher foreign export prices. In turn that led to higher UK import prices during 2010 and 2011 (Chart 4.6). Those past increases in import prices are probably still exerting some upward pressure on CPI inflation, but that effect is likely to be waning. Indeed, import price inflation has fallen back over the past year as foreign export price inflation has declined and sterling has appreciated modestly.

### 4.3 Domestic wage and price-setting

The path of inflation is influenced by changes in costs — both non-wage costs such as import and energy prices discussed above, and labour costs — as well as the way in which companies respond to these costs when setting prices. Wage and price-setting behaviour partly depends on the amount of spare capacity in the economy (Section 3), while inflation expectations are also an important influence.

#### Developments in labour costs and profits

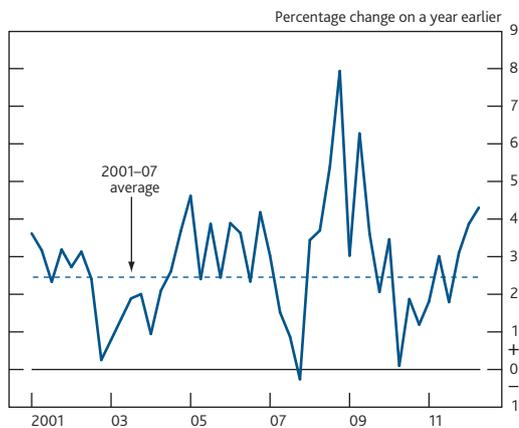
In the long run, real wages grow in line with labour productivity. But over shorter horizons, wages may not adjust completely to movements in productivity, and will also be affected by labour market slack.

Private sector nominal wage growth fell markedly during the 2008/09 recession, and has remained subdued since. Over the recent past, changes in total average weekly earnings (AWE) growth have largely reflected movements in the contribution of bonuses. Bonuses are typically linked to past performance, so are likely to contain little information about future pay pressures. Private sector wage growth excluding bonuses, referred to as regular pay growth, has remained relatively stable at around 2% over the past few years, well below its 2001–07 average rate (Table 4.A). In part, weak earnings

growth reflects the impact of elevated unemployment (Section 3).

As well as wages, companies' labour costs depend on related costs, such as National Insurance and pension contributions. The Government has introduced a requirement on employers to enrol eligible employees not currently in a workplace pension scheme into one over the next few years. That will raise some companies' labour costs, but it is possible that part of the cost of the scheme will be offset through lower pay growth. The immediate impact of the scheme on labour costs is likely to be modest, as only larger businesses — whose employees are more likely to be enrolled in a company pension scheme already — are required to participate initially.

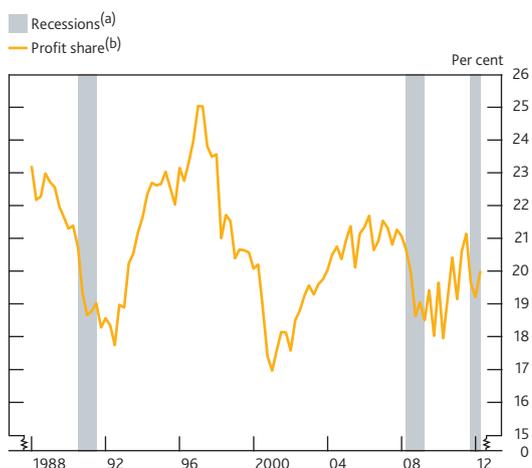
**Chart 4.7** Private sector unit labour costs<sup>(a)</sup>



Sources: ONS and Bank calculations.

(a) Calculated using private sector average weekly earnings data, adjusted using the ratio of private sector employee compensation to wages and salaries, divided by market sector output per worker. Private sector employee compensation is calculated as whole-economy compensation less central government and local authority compensation, the latter two of which have been seasonally adjusted by Bank staff.

**Chart 4.8** Private sector corporate profit share



Sources: ONS and Bank calculations.

(a) A recession is defined as at least two consecutive quarters of falling output (at constant market prices) estimated using the latest data. The recession is assumed to end once output began to rise.

(b) Private sector corporates' gross trading profits (excluding the alignment adjustment), divided by nominal gross value added at basic prices, excluding general government gross operating surplus and central government and local authority compensation of employees. Central government and local authority compensation data have been seasonally adjusted by Bank staff.

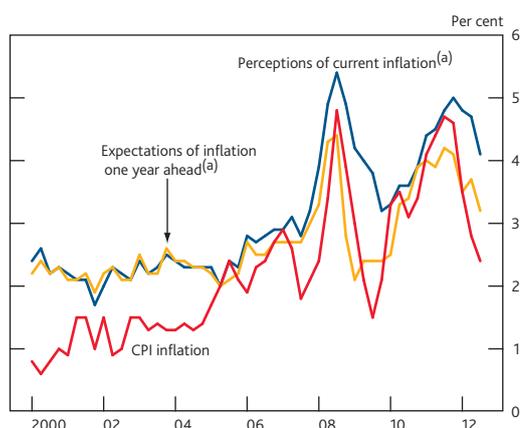
Although earnings growth has remained low, measures of labour costs that are more relevant for companies' pricing decisions have grown more rapidly. Over the recent past, wage growth has not been sufficiently low to offset weak productivity growth. Consequently, private sector unit labour costs — businesses' labour costs per unit of output produced — have grown at or above their 2001–07 average rate (Chart 4.7).

The prices companies set are influenced by changes in their labour and other costs and by demand conditions. Private sector output prices have risen over the past year, but by less than unit labour costs. As a result, companies' profit margins appear to have been compressed. For example, the profit share — one indicator of businesses' aggregate profit margins — is estimated to have been a little below its pre-recession average over recent quarters (Chart 4.8). And it is likely that margins have been compressed more for the domestic-facing companies that are more relevant for the outlook for consumer prices than for export-facing businesses, whose profits were boosted by sterling's depreciation during 2007/08.

In order for companies to attract the capital they need to do business, profit margins will probably need to recover. The required adjustment in margins could come through lower costs, through higher prices, or through some combination of the two. For example, were productivity growth to pick up relative to nominal wage growth, that would push down growth in unit labour costs. That would be more likely to happen if productivity growth has been curtailed by temporary factors and recovers strongly as the outlook improves (Section 3). Alternatively, the required adjustment to margins could come through higher prices as the economy recovers. That would be more likely to happen if companies' ability to raise prices is currently constrained by weak demand. It would also be more likely to happen if companies expect a high rate of inflation in the future.

In addition, some domestic-facing companies' profit margins could be restored as resources move towards more profitable

**Chart 4.9** Inflation and households' inflation perceptions and expectations one year ahead



Sources: Bank of England, GfK NOP and ONS.

(a) The questions ask about perceived and expected changes in prices, but do not reference a specific price index. Measures are based on the median estimated price change.

**Table 4.B** Indicators of longer-term inflation expectations<sup>(a)</sup>

Per cent	Averages <sup>(b)</sup> since 2006	2011	2012		
			H1	Q3	Q4 <sup>(c)</sup>
<b>Expectations (number of years ahead)</b>					
<b>Households</b>					
Bank/NOP (5) <sup>(d)</sup>	3.2	3.5	3.4	3.1	n.a.
Barclays Basix (5) <sup>(d)</sup>	3.9	3.9	4.0	3.7	n.a.
YouGov/Citigroup (5–10) <sup>(d)</sup>	3.4	3.6	3.4	3.4	3.7
<b>Professional forecasters</b>					
Bank forecasters' survey (3)	2.0	2.2	2.1	2.0	2.0
HMT forecasters' survey (4) <sup>(e)</sup>	2.1	2.2	2.3	2.2	n.a.
<b>Market-based</b>					
RPI implied from swaps (5–10) <sup>(f)</sup>	3.4	3.3	3.3	3.0	2.9

Sources: Bank of England, Barclays Capital, Bloomberg, Citigroup, GfK NOP, HM Treasury, YouGov and Bank calculations.

(a) Data are non seasonally adjusted.

(b) Since 2009 Q1 for Bank/NOP data. Since 2008 Q3 for Barclays Basix data.

(c) YouGov/Citigroup data are for October. RPI implied from swaps data are the average from 1 October to 7 November.

(d) The questions ask about expected changes in prices, but do not reference a specific price index. Measures are based on the median estimated price change.

(e) Taken from *Forecasts for the UK economy: a comparison of independent forecasts*. Based on the average of medium-term projections.

(f) Five-year, five-year forward RPI inflation implied from swaps.

sectors of the economy. For example, some of those with relatively low productivity and narrow margins may shift supply towards foreign markets, or might go out of business, with their resources absorbed by the export-facing sector.

### Inflation expectations

Households' wage demands and the extent to which companies feel able to raise prices will depend, in part, on the rate of inflation expected in the future. Measures of households' and companies' short-term inflation expectations have generally fallen back over the past year. That probably partly reflects the decline in CPI inflation: households' perceptions of the current rate of inflation and short-term inflation expectations tend to move quite closely with inflation outturns (Chart 4.9).

Changes in the longer-term inflation expectations of households and professional forecasters have been mixed, though most indicators remain close to their averages since 2006 (Table 4.B). Movements in longer-term inflation expectations derived from financial market measures are hard to interpret at the moment, however, as changes are also likely to reflect financial market participants' expectations about possible changes to the formulae used to calculate the retail prices index.<sup>(1)</sup>

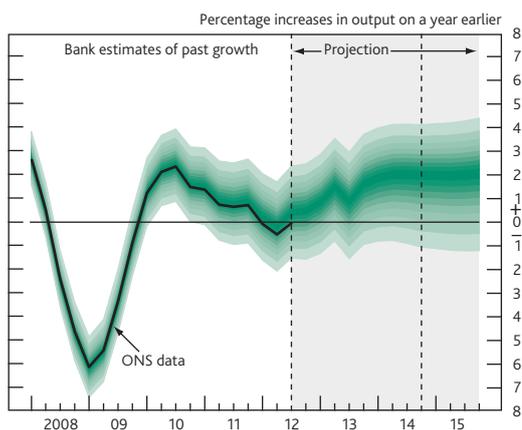
(1) For details on the options being considered, see 'National Statistician's consultation on options for improving the Retail Prices Index', [www.ons.gov.uk/ons/about-ons/user-engagement/consultations-and-surveys/national-statistician-s-consultation-on-options-for-improving-the-retail-prices-index/options-for-improving-rpi-consultation-document.pdf](http://www.ons.gov.uk/ons/about-ons/user-engagement/consultations-and-surveys/national-statistician-s-consultation-on-options-for-improving-the-retail-prices-index/options-for-improving-rpi-consultation-document.pdf).

# 5 Prospects for inflation

The economic recovery looks set to be subdued by historic standards, with significant headwinds from the global environment, especially in the euro area, and from the consequences of the financial crisis. Prospects for productivity are a key source of uncertainty, as the recent juxtaposition of strong growth in employment and weak growth in productivity is unlikely to continue indefinitely. On balance, the Committee's best collective judgement is for a sustained, but slow recovery, with output supported by the stimulus from asset purchases and the Funding for Lending Scheme. The risks to growth are judged to be to the downside.

For inflation, a key uncertainty relates to the outlook for external cost pressures, particularly commodity prices. Idiosyncratic influences, such as domestic energy prices and university tuition fees, are set to put upward pressure on inflation. On balance, the Committee's best collective judgement is that, over time, CPI inflation is likely to come down to around the 2% target as a revival in productivity growth alleviates pressures on companies' costs. The risks to inflation are judged to be broadly balanced around the 2% target for much of the second part of the forecast period.

**Chart 5.1** GDP projection based on market interest rate expectations and £375 billion asset purchases



The fan chart depicts the probability of various outcomes for GDP growth. It has been conditioned on the assumption that the stock of purchased assets financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period. 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 growth 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 10 occasions. In any particular quarter of the forecast period, GDP growth is therefore expected to lie somewhere within the fan on 90 out of 100 occasions. And on the remaining 10 out of 100 occasions GDP growth can fall anywhere outside the green area of the fan chart. Over the forecast period, this has been depicted by the light grey background. In any quarter of the forecast period, the probability mass in each pair of identically coloured bands sums to 10%. The distribution of that 10% between the bands below and above the central projection varies according to the skew at each quarter, with the distribution given by the ratio of the width of the bands below the central projection to the bands above it. In Chart 5.1, the ratios of the probabilities in the lower bands to those in the upper bands are approximately 6:4 at Years 1, 2 and 3. See the box on page 39 of the November 2007 *Inflation Report* 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.

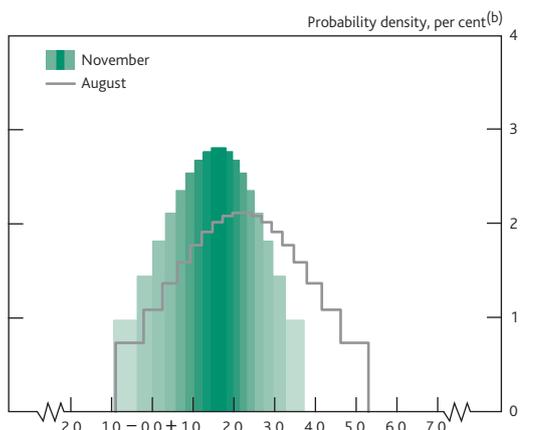
## 5.1 The projections for demand and inflation

Headline outturns for GDP in 2012 have been, and will continue to be, volatile, with the data buffeted by one-off influences such as the Jubilee and the Olympics. In Q3, output increased by 1% (Section 3). In Q4, that growth rate seems set to fall sharply as the boost from the Olympics is reversed; indeed, output may post a small decline.

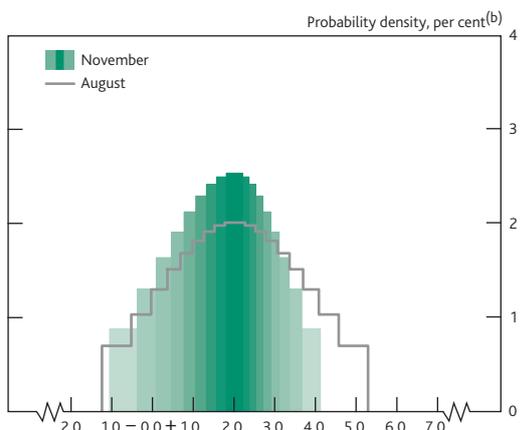
Looking through that near-term volatility, the Committee's best collective judgement is for a sustained, but slow, recovery as some of the long-standing headwinds to growth gradually abate. Credit conditions are forecast to ease, in part as a result of the Funding for Lending Scheme. Household spending power, which has been eroded for much of the past three years, is projected gradually to revive. More generally, output is supported by the stimulus from the MPC's past asset purchases.

That said, the recovery is likely to be subdued by historic standards, reflecting the broader causes and repercussions of the financial crisis. In particular, the need for a rebalancing in the global economy — especially in the euro area — looks set to cast a long shadow over growth. The UK fiscal consolidation is likely to continue to act as a headwind, but the projected gradual recovery in private sector spending reflects the supportive stance of monetary policy. Although

**Chart 5.2** Projected probabilities of GDP growth in 2013 Q4 (central 90% of the distribution)<sup>(a)</sup>



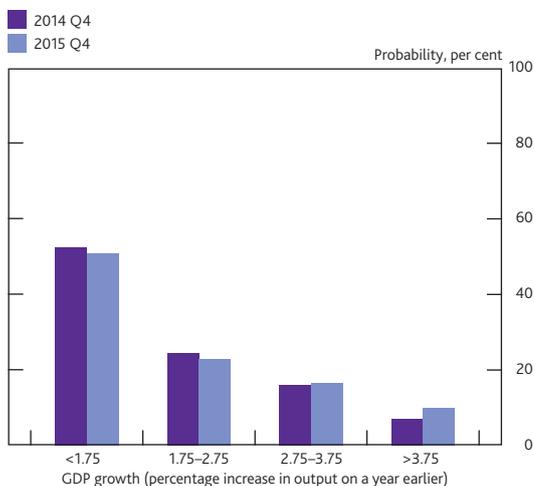
**Chart 5.3** Projected probabilities of GDP growth in 2014 Q4 (central 90% of the distribution)<sup>(a)</sup>



(a) **Charts 5.2 and 5.3** represent cross-sections of the GDP growth fan chart in 2013 Q4 and 2014 Q4 for the market interest rate projection. They have been conditioned on the assumption that the stock of purchased assets financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period. The coloured bands in **Charts 5.2 and 5.3** 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 GDP growth in 2013 Q4 and 2014 Q4 would lie somewhere within the range covered by the histogram on 90 occasions. GDP growth would lie outside the range covered by the histogram on 10 out of 100 occasions. The grey outlines in **Charts 5.2 and 5.3** represent the corresponding cross-sections of the August 2012 *Inflation Report* fan chart, which was conditioned on the assumption that the stock of purchased assets financed by the issuance of central bank reserves reached £375 billion and remained there throughout the forecast period.

(b) Average probability within each band; the figures on the y-axis indicate the probability of growth being within  $\pm 0.05$  percentage points of any given growth rate, specified to one decimal place. As the heights of identically coloured bars on either side of the central projection are the same, the ratio of the probability contained in the bars below the central projection, to the probability in the bars above it, is given by the ratio of the width of those bars.

**Chart 5.4** Frequency distribution of GDP growth based on market interest rate expectations and £375 billion asset purchases<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 the future.

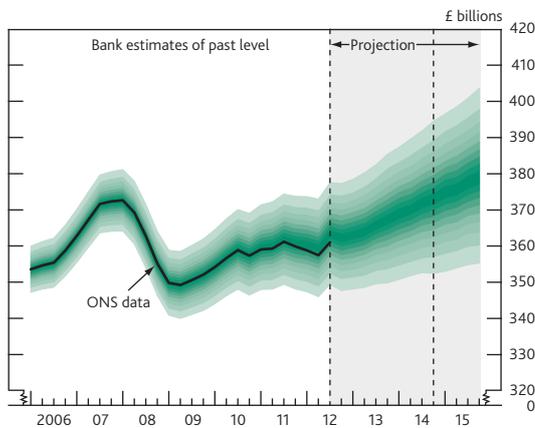
domestic credit conditions are assumed gradually to become more favourable, this is likely to take time to filter through to the real economy. Taken together, these influences are likely to weigh on both productivity and demand into the medium term, potentially materially so. Demand and output would have been significantly weaker had it not been for the MPC's asset purchases.

**Chart 5.1** shows the outlook for four-quarter GDP growth, conditioned on the assumptions that Bank Rate follows a path implied by market interest rates, and that the stock of purchased assets remains at £375 billion throughout the forecast period. In line with the usual convention, the Committee's projections are conditioned on the tax and spending plans set out in the 2012 March *Budget*. They also take account of the Government's decision to change its cash management operations so as to use the cash flow generated by the Asset Purchase Facility to pay down government debt. The use of those cash flows to pay down debt will have an effect similar to the MPC purchasing gilts of the same value.

Compared with August, the GDP profile is weaker (**Charts 5.2 and 5.3**). In the near term, that partly reflects a renewed squeeze on real incomes emanating from the imminent rises in household energy bills. It also reflects recent indications from business surveys of some softening in near-term underlying growth.

Further out, the weaker GDP profile reflects the judgement that the broader causes and repercussions of the financial crisis may bear down more forcefully on demand and productivity than assumed in previous *Reports*. There seems a greater risk that the UK economy may be in a period of persistently low growth. Compared with previous *Reports*, the Committee has

**Chart 5.5** Projection of the level of GDP based on market interest rate expectations and £375 billion asset purchases



Chained-volume measure (reference year 2009). See the footnote to Chart 5.1 for details of the assumptions underlying the projection for GDP growth. The width of this fan over the past has been calibrated to be consistent with the four-quarter growth fan chart, under the assumption that revisions to quarterly growth are independent of the revisions to previous quarters. Over the forecast, the mean and modal paths for the level of GDP are consistent with Chart 5.1. So the skews for the level fan chart have been constructed from the skews in the four-quarter growth fan chart at the one, two and three-year horizons. This calibration also takes account of the likely path dependency of the economy, where, for example, it is judged that shocks to GDP growth in one quarter will continue to have some effect on GDP growth in successive quarters. This assumption of path dependency serves to widen the fan chart.

assigned less weight to the possibility that growth will be materially above its historic average (Charts 5.2 and 5.3). The latest projection suggests a roughly three-in-four chance that growth will be below its historical average throughout the next three years (Chart 5.4). The level of GDP is more likely than not to remain below its pre-crisis level until towards the end of the forecast period (Chart 5.5).

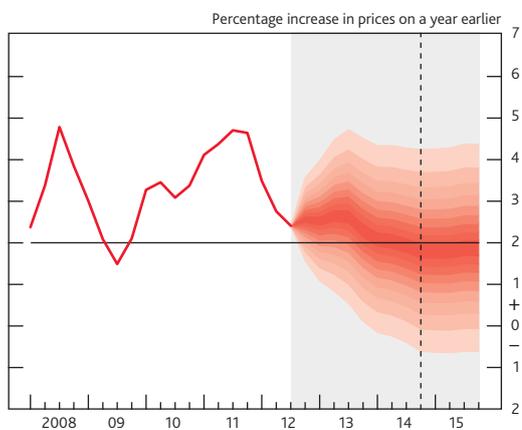
A major source of risk stems from the global environment, in particular the euro area. As in past *Reports*, the fan charts exclude the most extreme risks associated with disorderly outcomes in the euro area.<sup>(1)</sup> Other sources of risk include: the extent to which recent reductions in bank funding costs spur lending; the outlook for productivity growth; and the degree to which the highly stimulatory monetary policy stance can continue to encourage households and businesses to bring forward future spending.

Inflation has fallen sharply in the recent past. In Q3, CPI inflation was 2.4%, down more than 2 percentage points from its level a year ago. That said, the outlook for inflation in the first part of the forecast period is higher than in the *August Report*. That in part reflects higher-than-expected outturns for inflation and the impact of unexpectedly large increases in household energy prices (Charts 5.6 and 5.7).

Inflation is likely to remain a little above target for the first part of the forecast period (Chart 5.8), with household energy bills — alongside other idiosyncratic influences such as university tuition fees and food prices — imparting a degree of upwards pressure. There is uncertainty about the extent to

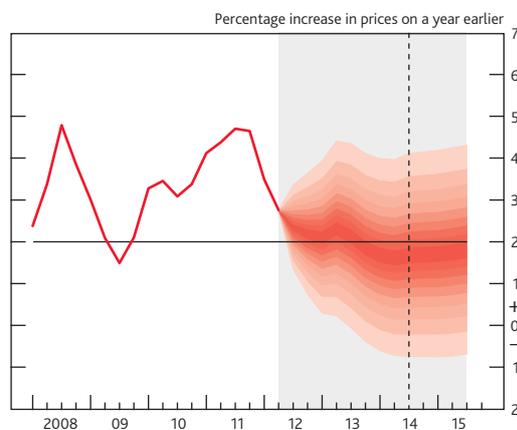
(1) See page 38 of the August 2011 *Report*.

**Chart 5.6** CPI inflation projection based on market interest rate expectations and £375 billion asset purchases

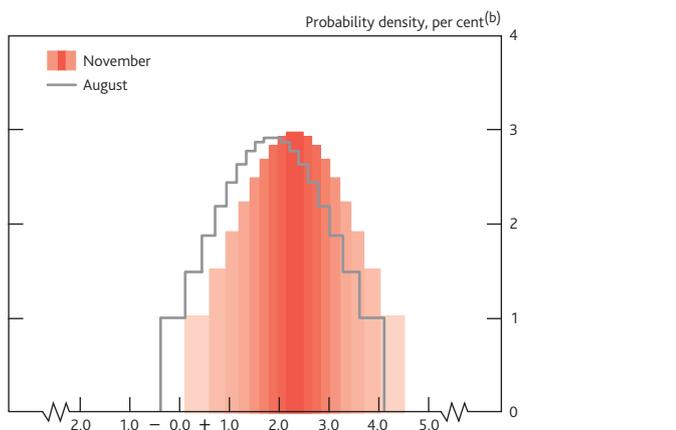


Charts 5.6 and 5.7 depict the probability of various outcomes for CPI inflation in the future. Chart 5.6 is conditioned on the assumption that the stock of purchased assets financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period. Chart 5.7 was conditioned on the assumption that the stock of purchased assets financed by the issuance of central bank reserves reached £375 billion and remained there throughout the forecast period. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that inflation in any particular quarter would lie within the darkest central band on only 10 of those occasions. The fan charts are constructed so that outturns of inflation are also expected to lie within each pair of the lighter red areas on 10 occasions. In any particular quarter of the forecast period, inflation is therefore expected to lie somewhere within the fans on 90 out of 100 occasions. And on the remaining 10 out of 100 occasions inflation can fall anywhere outside the red area of the fan chart. Over the forecast period, this has been depicted by the light grey background. In any quarter of the forecast period, the probability mass in each pair of identically coloured bands sums to 10%. The distribution of that 10% between the bands below and above the central projection varies according to the skew at each quarter, with the distribution given by the ratio of the width of the bands below the central projection to the bands above it. In Charts 5.6 and 5.7, the probabilities in the upper bands are the same as those in the lower bands at Years 1, 2 and 3. 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.

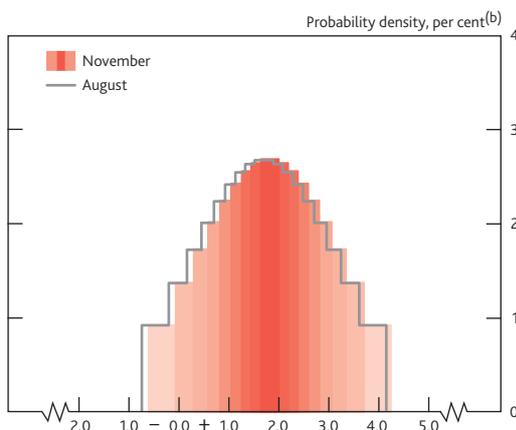
**Chart 5.7** CPI inflation projection in August based on market interest rate expectations and £375 billion asset purchases



**Chart 5.8** Projected probabilities of CPI inflation outturns in 2013 Q4 (central 90% of the distribution)<sup>(a)</sup>



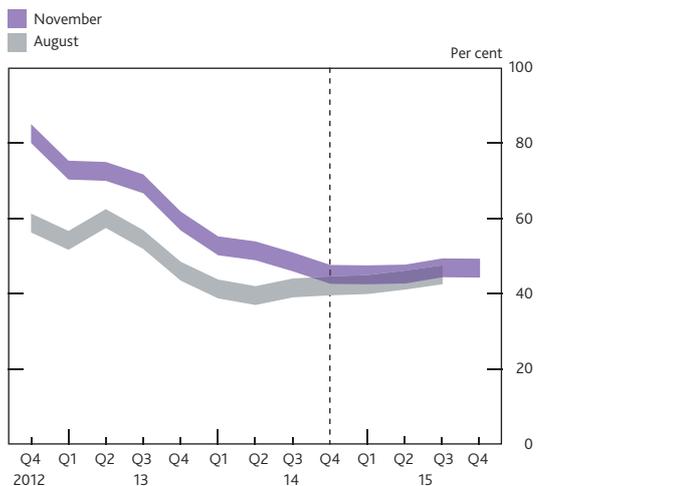
**Chart 5.9** Projected probabilities of CPI inflation outturns in 2014 Q4 (central 90% of the distribution)<sup>(a)</sup>



(a) **Charts 5.8 and 5.9** represent cross-sections of the CPI inflation fan chart in 2013 Q4 and 2014 Q4 for the market interest rate projection. They have been conditioned on the assumption that the stock of purchased assets financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period. The coloured bands in **Charts 5.8 and 5.9** 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 2013 Q4 and 2014 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. The grey outlines in **Charts 5.8 and 5.9** represent the corresponding cross-sections of the August 2012 *Inflation Report* fan chart, which was conditioned on the assumption that the stock of purchased assets financed by the issuance of central bank reserves reached £375 billion and remained there throughout the forecast period.

(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. As the heights of identically coloured bars on either side of the central projection are the same, the ratio of the probability contained in the bars below the central projection, to the probability in the bars above it, is given by the ratio of the width of those bars.

**Chart 5.10** An indicator of the probability that inflation will be above the target



The November and August swathes in this chart are derived from the same distributions as **Charts 5.6 and 5.7** respectively. They indicate the assessed probability of inflation being above target in each quarter of the forecast period. The 5 percentage points width of the swathes reflects the fact that there is uncertainty about the precise probability in any given quarter, but they should not be interpreted as confidence intervals. The dashed line is drawn at the two-year point of the November projection. The two-year point of the August projection was one quarter earlier.

which the effect of these idiosyncratic influences will endure. That said, over time, inflation is likely to come down to around the 2% target (**Chart 5.9**), in part as the impact of external price pressures ease and as a resumption of productivity growth alleviates pressures on company costs.

External cost pressures — such as commodity prices — have been the single biggest driver of inflation fluctuations in recent years. And although the impact of these pressures is assumed to wane over the forecast period, they remain a key source of risk.

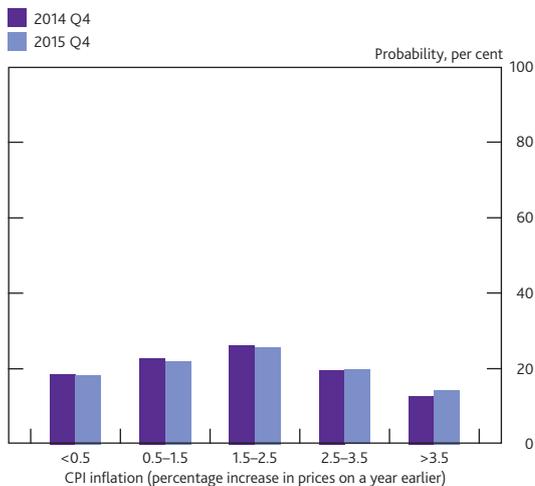
Overall, for the second part of the forecast period, the risks to inflation are broadly balanced around the target (**Chart 5.10**). But there is still a roughly three-in-four chance that inflation will be more than half a percentage point away from the target at the forecast horizon (**Chart 5.11**).

## 5.2 Key judgements and risks

### To what extent do global developments pose further risks to growth?

The future path of GDP will depend critically on developments in the global environment, in particular the euro area. The MPC's projections assume that the euro-area authorities put policies in place that will allow those countries that need to rebuild their competitiveness and reduce their indebtedness to do so gradually. A key source of risk is if policymakers in the euro area are unable to ensure that the required adjustments to the levels of both debt and competitiveness in some member countries take place in an orderly manner. The degree of requisite rebalancing and adjustment is so pronounced that there remains a risk of serious dislocation.

**Chart 5.11** Frequency distribution of CPI inflation based on market interest rate expectations and £375 billion asset purchases<sup>(a)</sup>



(a) These figures are derived from the same distribution as Chart 5.6. They represent the probabilities that the MPC assigns to CPI inflation lying within a particular range at a specified time in the future.

As in previous *Reports*, the Committee's fan charts exclude the more extreme outturns that may be associated with disorderly outcomes in the euro area: there is no meaningful way to calibrate the size and likelihood of such outcomes. That said, perceptions about the possibility of those extreme risks crystallising will be reflected in asset markets and in the level of confidence, and such influences are included in the fans.

One channel through which developments overseas affect activity at home is international trade. The Committee's GDP profile embodies a relatively subdued outlook for UK exports. However, the extent to which recent international policy actions will stimulate demand in UK export markets is uncertain. This implies risks to UK demand, in both directions. There are also risks surrounding the evolution of the exchange rate. Although sterling has been broadly stable since the middle of 2012, strains within the euro area contributed to a gradual appreciation of sterling earlier in the year. This has made it harder for UK-based companies to compete in world markets and that effect would be intensified were sterling to appreciate further.

### Will recent falls in bank funding costs feed through into lending?

Funding costs for UK banks have fallen sharply (Section 1). For example, a key component of longer-term wholesale funding costs — senior unsecured bond spreads — has dropped to around a fifth of its late-2011 peak. That in part is likely to reflect the wider impact on wholesale markets of the Funding for Lending Scheme (FLS). The FLS allows UK banks to access funding at below market rates, and that is likely to have reduced their need to issue longer-term debt on public markets.

Recent falls in bank funding costs also reflect market reaction to international policy initiatives, such as the European Central Bank's Outright Monetary Transactions (OMTs). These falls could be reversed if investor concerns about euro-area strains again intensify. The FLS will provide UK banks with a cushion against this: for at least as long as the Scheme is in operation, the funding costs facing UK banks are likely to be lower than they otherwise would have been. But the FLS cannot completely insulate UK banks from developments elsewhere.

Early signs of the impact of the FLS have been encouraging (Section 1). The current projections are conditioned on the assumption that the FLS provides a modest fillip to growth for the next year or so. Net lending is likely to be higher than it would have been in the absence of the Scheme. In an absolute sense, however, lending is likely to remain weak given the need for some banks to contract their balance sheets.

More generally, the likely magnitude, and timing, of the pass-through from lower funding costs into lending is

## Financial and energy market assumptions

As a benchmark assumption, the projections for GDP growth and CPI inflation described in **Charts 5.1** and **5.6** are conditioned on a path for Bank Rate implied by market interest rates (**Table 1**). In the period leading up to the MPC's November decision, the path implied by forward market interest rates was for Bank Rate to be a little below 0.5%, the current level of Bank Rate, in the first part of the forecast period, and then to rise gradually from 2014 Q1 onwards. The path for Bank Rate at the time of the *November Report* was, on average, 0.1 percentage points higher than that assumed in the *August Report*.

**Table 1** Conditioning path for Bank Rate implied by forward market interest rates<sup>(a)</sup>

Per cent	2012		2013				2014				2015			
	Q4 <sup>(b)</sup>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
November	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.8	
August	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6		

(a) The data are fifteen working day averages of one-day forward rates to 7 November 2012 and 1 August 2012 respectively. The curves are based on overnight index swap (OIS) rates.

(b) November figure for 2012 Q4 is an average of realised spot rates to 7 November, and forward rates thereafter.

The November projections are conditioned on an assumption that the total stock of asset purchases financed by the creation of central bank reserves remains at £375 billion throughout

the forecast period, the same total scale of purchases assumed in the August projections. The starting point for sterling's effective exchange rate index (ERI) in the MPC's projections was 83.7, the average for the fifteen working days to 7 November. That was 0.7% below the starting point for the August projections. Under the MPC's usual convention,<sup>(1)</sup> the exchange rate is assumed to remain broadly flat, and is lower throughout the forecast period than was assumed in August.

The starting point for UK equity prices in the MPC's projections was 3051 — the average of the FTSE All-Share for the fifteen working days to 7 November. That was 4.5% above the starting point for the August projection.

Energy prices are assumed to evolve broadly in line with the paths implied by futures markets over the forecast period. Average Brent oil futures prices for the next three years were around 3% higher (in US dollar terms) than at the time of the *August Report*. Wholesale gas futures prices were around 6% higher over the forecast period. Based on recent announcements by major energy suppliers, the central projection is conditioned on a benchmark assumption of increases in domestic gas and electricity prices averaging 8% around the turn of the year, although the evolution of prices further out is uncertain.

(1) The convention is that the sterling exchange rate follows a path which is half way between the starting level of the sterling ERI and a path implied by interest rate differentials.

uncertain, with risks in both directions. One possibility is that competition between banks may not be sufficiently keen to deliver the degree of credit easing implied by the central growth profile. And even if there is a marked easing in credit conditions, there is still a risk that it is associated with a relatively weak take-up of loans. For example, some companies may be particularly reluctant to take on new loans given the uncertain economic environment.

Set against that, the assumptions on pass-through of lower funding costs into credit conditions embodied in the central projection are relatively cautious. It is conceivable that there will be a greater, or longer-lasting, easing in conditions, especially given the scale of recent funding cost declines.

### How willing will households and companies be to spend?

Since the onset of the 2008/09 recession, there has been some strengthening in household and corporate balance sheets. Households have allowed income growth to outpace spending, leading to a partial reversal of the decline in the saving ratio that characterised the pre-crisis period. The UK corporate sector has run a large financial surplus for most of the past

decade, and, in aggregate, has added to that surplus during the past few years.

For the household sector, the Committee's projections embody the assumption that a pickup in real incomes filters through into consumer spending, with the saving ratio broadly stable. It is possible that spending will pick up by more than incomes if, for example, the dissipation of uncertainty about the economic outlook encourages households to run down savings. But perhaps the greater risk is that a larger proportion of the projected increases in income is saved rather than spent. In particular, some households may still be seeking to reduce their stock of debt, or to build up assets, as they continue to adjust to longer-term concerns about future credit availability, the adequacy of retirement provision, the outlook for income, or heightened uncertainty more generally.

For the corporate sector, the Committee's central view implies only a modest recovery in business investment. There are risks on either side. On the downside, companies may be less inclined to invest than currently assumed, for example given pervasive uncertainty about the global economic outlook. Set against that is the relatively strong position of corporate balance sheets. If global uncertainty dissipates and the recovery gathers momentum, companies may be increasingly willing to finance new spending, posing an upside risk to the muted outlook for business investment implied by the central GDP projection.

### How will productivity evolve?

Since 2010 Q2, output has risen only a little, but the private sector has, in aggregate, added around one million new jobs. As a consequence, productivity has been extremely weak (Section 3). A central judgement in the forecast is that a recovery in productivity and demand occurs in tandem.

The influence of the crisis on productivity is not yet well understood. Nevertheless, it is likely that factors such as bank finance and global uncertainty, as well as the weakness of demand itself, have played some role in curtailing productivity growth. There is a range of views on the Committee on the relative importance of these. And, irrespective of the causes of the past weakness in productivity, the juxtaposition of strong growth in employment with sluggish growth in output is unlikely to continue indefinitely.

On balance, the Committee's best collective judgement is that productivity is set for a prolonged period of weak growth. Reduced availability of bank credit is likely to have played some role in curbing the economy's supply capacity. As credit conditions are assumed to improve only gradually, this is associated with a muted pickup in productivity growth and output.

There are risks to this picture in both directions. On the one hand, credit conditions could be tighter than the MPC assumes, it could take longer for more favourable lending terms to filter through into productivity, or other influences (such as uncertainty about the global outlook) could impart greater downward pressure on productivity growth than currently assumed. On the other hand, productivity growth could rise rapidly if a pickup in demand is associated with a marked improvement in companies' effective supply.

It is judged more likely that the productivity puzzle will be resolved primarily through a rise in output rather than large declines in employment. But there remains a risk that companies, having been persistently overoptimistic about growth prospects, may revise down their expectations and cut back on employment sharply.

### **What is the outlook for companies' labour costs, and the pricing climate more generally?**

Differing paths for productivity are likely to have material implications for the outlook for GDP. But, as productivity growth and GDP are projected to move in tandem, differing paths for productivity are judged likely to have limited implications for spare capacity, and hence inflation, at least in the medium term.

Ultimately, real wages need to adjust in line with growth in productivity. But there are a number of ways that adjustment may take place — through nominal wages, through prices, or through some combination of the two. And it may take time for the adjustment to occur, meaning that growth in productivity may outstrip that in real wages for a period, or *vice versa*. Therefore, although the medium-term implications for inflation of different paths of productivity may be limited, the short-term inflation dynamics will be quite sensitive to the interplay between companies' costs, their prices and hence margins.

In the central projection, the recovery in productivity growth outstrips that in nominal wages for a period, meaning that growth in companies' costs falls back. That alleviation of cost pressures allows company margins slowly to be rebuilt. Even in the medium term, nominal wage growth remains muted, in part reflecting the degree of slack in the labour market that is assumed to persist through the forecast period.

There are numerous risks to those assumptions, at least in the short term. One possibility is that growth in company costs could fall by more than implied in the central projection, posing downward risks to inflation. That could occur if a turnaround in demand prompts a marked increase in supply capacity, and if nominal wage growth remains weak. On the other hand, company cost pressures could intensify if productivity growth remains exceptionally weak and

employers are either reluctant, or unable, to adjust nominal wages commensurately.

There are a number of ways in which companies could respond to any continued pressure on labour costs. One reaction could be to cut employment. Another could be to push through price rises, particularly if the recent extended period of above-target inflation were to affect expectations of future inflation.

The CPI inflation rate reflects the prices of a myriad of goods and services. Some of these prices are relatively insensitive to changes in the pressure of demand on supply. For example, during the forecast period there are likely to be upward pressures on inflation from rises in tuition fees and domestic energy prices for reasons largely unconnected with domestic capacity pressures (Section 4). As inflation is ultimately determined by the stance of monetary policy, these price rises should have few longer-run inflationary implications. But they will have a transient impact on inflation while other prices adjust to compensate, and there is a risk that this period of upward pressure on inflation will be more drawn out than implied by the Committee's central profile.

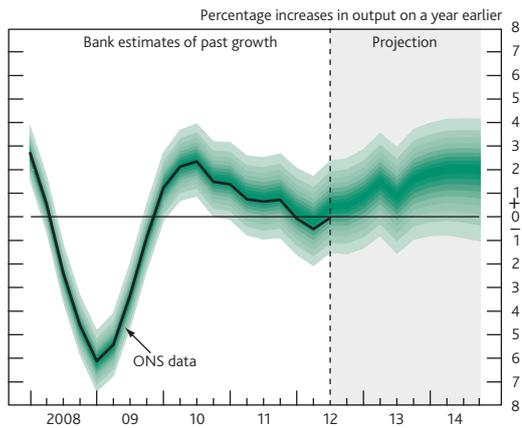
### **What will happen to commodity prices?**

The Committee's projections are conditioned on the assumption of an easing in cost pressures from the external environment — in particular commodity prices. That assumption reflects a gently downward-sloping profile for the oil futures curve, a broadly flat conditioning path for the sterling ERI and a subdued path for the export prices of the United Kingdom's major trading partners.

External cost pressures — such as commodity prices — have been the single biggest driver of inflation fluctuations in recent years, and are therefore a key judgement underpinning the forecast. These pressures could be weaker than assumed in the central projection, for example if there is a sharp slowdown in demand from emerging economies. Alternatively, commodity prices could again rise sharply if growth in emerging economies picks up, or if supply concerns intensify — due, for example, to tensions in the Middle East.

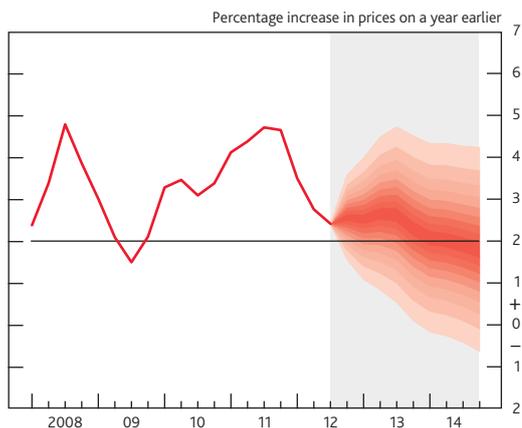
One source of commodity price risk relates to food. World crop prices rose sharply in the middle of the year (Section 4), largely reflecting the adverse impact of global weather patterns on supply. It is possible that agricultural commodity prices will be a greater source of upward inflationary pressure than currently assumed. For example, relatively low agricultural stocks may mean that further supply problems have a pronounced impact on prices.

**Chart 5.12** GDP projection based on constant nominal interest rates at 0.5% and £375 billion asset purchases



See footnote to Chart 5.1.

**Chart 5.13** CPI inflation projection based on constant nominal interest rates at 0.5% and £375 billion asset purchases



See footnote to Chart 5.6.

### 5.3 Summary and the policy decision

Some near-term volatility notwithstanding, the outlook for GDP growth is for a sustained, but slow, recovery. CPI inflation is projected to come down from the second half of next year. **Charts 5.12** and **5.13** show the projections for demand and inflation over the next two years under the alternative conditioning assumption that Bank Rate is held constant at 0.5%.

For GDP, the global economic outlook in general — and the strains in the euro area in particular — remains a key source of risk. Prospects for productivity growth are another source of uncertainty, as the recent juxtaposition of strong employment and weak productivity is unlikely to continue indefinitely. For inflation, a central risk stems from external costs — in particular, commodity prices. There is also uncertainty about the extent to which idiosyncratic influences such as tuition fees and domestic energy bills will continue to impart upward inflationary pressure. There is a range of views among Committee members about the relative importance of these factors. Overall, the risks to growth are judged to be on the downside; the risks to inflation are judged to be broadly balanced.

In evaluating the outlook for growth, the Committee will focus on indicators of: prospects for the world economy, and in particular, developments in the euro area; the exchange rate; the impact of the FLS on credit conditions and net lending; households' and businesses' uncertainty; the evolution of underlying productivity growth; and the impact of the MPC's asset purchases on demand.

In evaluating the outlook for inflation, the Committee will in addition focus on indicators of: commodity prices; the degree of spare capacity in the economy; unit labour costs; and companies' price-setting behaviour.

At its November meeting, the Committee noted that a slow recovery in GDP growth was likely as some of the headwinds holding back demand in recent years abated, although there was a material risk that growth could remain weaker for longer. The near-term inflation outlook was higher than in August, but further out inflation was likely to fall back to around the target. Against that backdrop, the Committee decided that it was appropriate to maintain Bank Rate at 0.5% and the size of the asset purchase programme at £375 billion in order to meet the 2% CPI inflation target over the medium term.

## Other forecasters' expectations

Every three months, the Bank asks a sample of external forecasters for their latest economic projections. This box reports the results of the most recent survey, carried out during October. On average, forecasters expected annual CPI inflation to fall back to 2.1% by 2013 Q4 and be at the 2% target thereafter (Table 1). Forecasters' central projections for four-quarter GDP growth one year ahead were unchanged on average, but were markedly lower than at the time of the *May Report* (Chart A). The average central projections at the two and three-year horizons were also broadly similar to August.

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

	2013 Q4	2014 Q4	2015 Q4
CPI inflation <sup>(b)</sup>	2.1	2.0	2.0
GDP growth <sup>(c)</sup>	1.2	1.9	2.0
Bank Rate (per cent)	0.5	0.7	1.3
Stock of purchased assets (£ billions) <sup>(d)</sup>	426	438	433
Sterling ERI	83.5	83.8	84.0

Source: Projections of outside forecasters as of 1 November 2012.

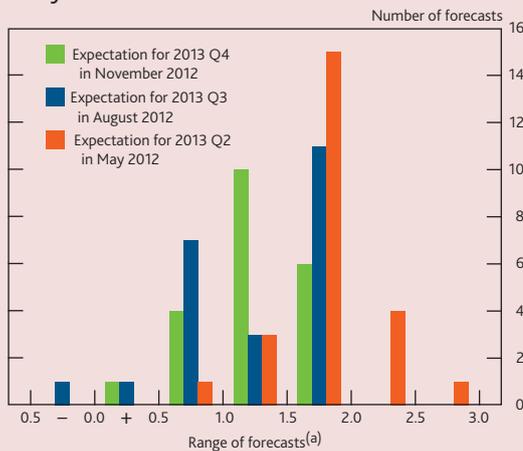
(a) For 2013 Q4, there were 23 forecasts for CPI inflation, 21 for GDP growth, 24 for Bank Rate, 20 for the stock of purchased assets and 18 for the sterling ERI. For 2014 Q4 and 2015 Q4, there were 19 forecasts for CPI inflation and GDP growth, 20 for Bank Rate, 16 for the stock of purchased assets and 16 for the sterling ERI.

(b) Twelve-month rate.

(c) Four-quarter percentage change.

(d) Original purchase value. Purchased via the creation of central bank reserves.

**Chart A** Distribution of GDP growth central projections one year ahead



Sources: Projections of 24 outside forecasters as of 1 May 2012, 23 outside forecasters as of 1 August 2012 and 21 outside forecasters as of 1 November 2012.

(a) A projection that is on the boundary of these ranges is classified in the higher bucket. For example, a 1.5% projection is included within the 1.5% to 2.0% bucket.

These forecasts assumed slightly more monetary stimulus than was assumed three months ago. By the three-year horizon, the stock of asset purchases financed by central bank reserves was, on average, expected to be £18 billion higher than projected three months ago. The average projection for Bank Rate was a little lower over the three-year forecast horizon. The level of the sterling ERI was expected, on average, to be slightly lower over the next three years.

The Bank also asks forecasters for their assessment of the risks around their central projections for CPI inflation and GDP growth (Table 2). The average probability assigned to inflation being below target one year ahead had fallen a little compared to three months ago and the risks around the inflation target were judged to be balanced (Chart B). Forecasters also judged that inflation was broadly as likely to be above the target as below it at the three-year horizon, similar to the August survey.

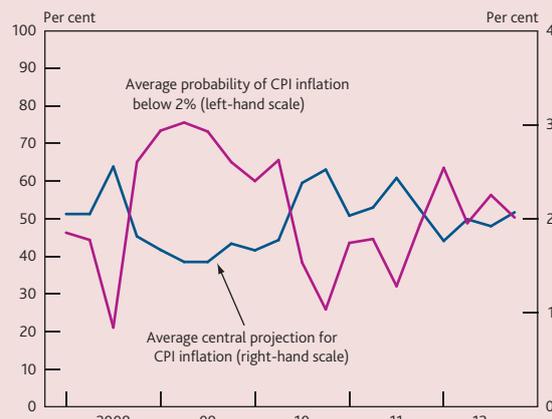
**Table 2** Other forecasters' probability distributions for CPI inflation and GDP growth<sup>(a)</sup>

CPI inflation		Range:						
Probability, per cent		<0%	0–1%	1–1.5%	1.5–2%	2–2.5%	2.5–3%	>3%
2013 Q4		1	5	14	30	27	15	7
2014 Q4		3	7	16	26	24	15	9
2015 Q4		3	8	15	25	24	15	11
GDP growth		Range:						
Probability, per cent		<-1%	-1–0%	0–1%	1–2%	2–3%	>3%	
2013 Q4		4	10	30	36	15	5	
2014 Q4		3	7	18	33	26	12	
2015 Q4		4	8	15	28	30	15	

Source: Projections of outside forecasters as of 1 November 2012.

(a) For 2013 Q4, 23 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 2014 Q4 and 2015 Q4, 19 forecasters provided assessments for CPI and GDP. The table shows the average probabilities across respondents. Rows may not sum to 100 due to rounding.

**Chart B** Average of other forecasters' central projections for CPI inflation and probabilities of CPI inflation below 2% one year ahead



Sources: Projections of outside forecasters provided for *Inflation Reports* between February 2008 and November 2012.

Consistent with only small revisions to the central projections for GDP growth, forecasters attached similar probabilities to GDP growth remaining low as they did three months ago. The average probability of four-quarter GDP growth being below 1% one year ahead was 44%, while the likelihood of growth being less than 1% at the three-year horizon was 27%.

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### **Text of Bank of England press notice of 6 September 2012**

#### **Bank of England maintains Bank Rate at 0.5% and the size of the Asset Purchase Programme at £375 billion**

The Bank of England's Monetary Policy Committee today voted to maintain the official Bank Rate paid on commercial bank reserves at 0.5%. The Committee also voted to continue with its programme of asset purchases totalling £375 billion, financed by the issuance of central bank reserves.

The Committee expects the announced programme of asset purchases to take another two months to complete. The scale of the programme will be kept under review.

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 2012**

#### **Bank of England maintains Bank Rate at 0.5% and the size of the Asset Purchase Programme at £375 billion**

The Bank of England's Monetary Policy Committee today voted to maintain the official Bank Rate paid on commercial bank reserves at 0.5%. The Committee also voted to continue with its programme of asset purchases totalling £375 billion, financed by the issuance of central bank reserves.

The Committee expects the announced programme of asset purchases to take another month to complete. The scale of the programme will be kept under review.

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 2012**

#### **Bank of England maintains Bank Rate at 0.5% and the size of the Asset Purchase Programme at £375 billion**

The Bank of England's Monetary Policy Committee today voted to maintain the official Bank Rate paid on commercial bank reserves at 0.5%. The Committee also voted to maintain the stock of asset purchases financed by the issuance of central bank reserves at £375 billion.

The Committee's latest inflation and output projections will appear in the *Inflation Report* to be published at 10.30 am 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

**AWE** – average weekly earnings.

**CDS** – credit default swap.

**CPI** – consumer prices index.

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

**ERI** – exchange rate index.

**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.

**OIS** – overnight index swap.

**RPI** – retail prices index.

**RPI inflation** – inflation measured by the retail prices index.

## Abbreviations

**BCC** – British Chambers of Commerce.

**CBI** – Confederation of British Industry.

**CEIC** – CEIC Data Company Ltd.

**CFO** – chief financial officer.

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

**ECB** – European Central Bank.

**EU** – European Union.

**FLS** – Funding for Lending Scheme.

**FSA** – Financial Services Authority.

**FTSE** – Financial Times Stock Exchange.

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

**HMRC** – Her Majesty's Revenue and Customs.

**HMT** – Her Majesty's Treasury.

**LTV** – loan to value.

**MFIs** – monetary financial institutions.

**MPC** – Monetary Policy Committee.

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

**OBR** – Office for Budget Responsibility.

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

**OFCs** – other financial corporations.

**OMTs** – Outright Monetary Transactions.

**ONS** – Office for National Statistics.

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

**PwC** – PricewaterhouseCoopers.

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

**S&P** – Standard & Poor's.

**SMEs** – small and medium-sized enterprises.

**VAT** – Value Added Tax.

## 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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