

# Inflation Report

February 2015



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 economic policy, including its objectives for 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, output and unemployment, as well as 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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The Overview of this *Inflation Report* is available in PDF at [www.bankofengland.co.uk/publications/Documents/inflationreport/2015/febo.pdf](http://www.bankofengland.co.uk/publications/Documents/inflationreport/2015/febo.pdf).

The entire *Report* is available in PDF at [www.bankofengland.co.uk/publications/Pages/inflationreport/2015/feb.aspx](http://www.bankofengland.co.uk/publications/Pages/inflationreport/2015/feb.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/2015/feb.aspx](http://www.bankofengland.co.uk/publications/Pages/inflationreport/2015/feb.aspx).



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# Overview

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CPI inflation was 0.5% in December 2014, well below the 2% target. The main reason for this was the steep fall in wholesale energy prices during the second half of last year. Inflation is likely to fall further in the near term, and could temporarily turn negative, as falls in energy prices continue to be passed through. Inflation is likely to rebound around the turn of the year as these effects drop out of the annual rate.

The fall in oil prices, together with monetary policy measures taken abroad, should support global demand. Lower energy prices will also boost UK real income growth. That, along with a lower expected path for Bank Rate than in November, should help to sustain the recent robust expansion in UK domestic demand. As slack is absorbed, inflation is projected to rise back to levels consistent with the inflation target. The Committee judges that it is currently appropriate to set policy so that it is likely that inflation will return to the 2% target within two years. Under the assumption that Bank Rate rises gradually over the forecast period, that is judged likely to be achieved.

## Recent economic developments

### Supply, costs and prices

CPI inflation was 0.5% in December, down from 1.2% three months ago and 1½ percentage points below the Monetary Policy Committee's (MPC's) 2% target. That triggered an open letter from the Governor to the Chancellor of the Exchequer. A large part of the weakness in inflation can be accounted for by falls in energy prices. The sterling price of Brent crude oil has fallen by around 50% since mid-2014, leading to sharp decreases in petrol prices. Falls in the prices of food and other imports, in part a consequence of the past appreciation of sterling, have also weighed on inflation. Overall, the MPC judges that around two thirds of the undershoot in inflation, relative to target, can be explained by lower energy, food and other goods prices.

Weak domestic cost growth has also continued to pull down inflation. Unit labour costs grew by only 0.5% in the year to 2014 Q3, as subdued productivity growth was only just outpaced by pay growth. There are some signs pay growth may be picking up. If sustained, that should contribute to a steady rise in unit labour cost growth. The rise in pay growth probably reflects the narrowing in slack since mid-2013: the unemployment rate fell to 5.8% in the three months to November and average hours worked have risen to around pre-crisis levels. But participation in the labour market was weaker than expected in November. The central view of most MPC members is that slack has continued to narrow, and is broadly in the region of ½% of GDP.

An important influence on households' and companies' wage and price-setting behaviour is inflation expectations. Survey measures

of household and company inflation expectations have fallen over the past year, at both short and longer-term horizons. More recently, financial market measures have also fallen at all horizons, but they are close to pre-crisis averages. On balance, inflation expectations remain broadly consistent with the 2% inflation target.

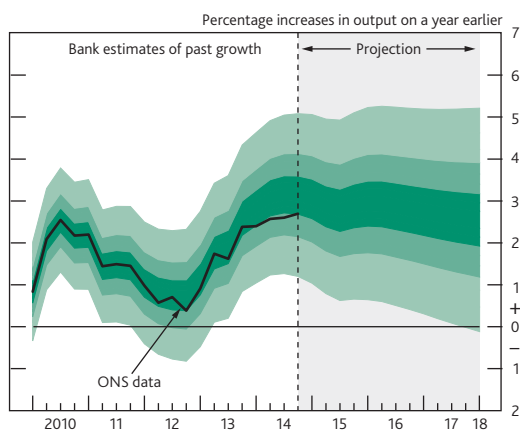
### Demand

US GDP continued to grow solidly in Q4, but euro-area output growth remained sluggish. Growth has also slowed in many emerging economies, including China. The fall in oil prices seen since mid-2014 is, in part, likely to reflect a slowing in the outlook for global activity, but a larger influence appears to have been news in oil supply. That, along with a range of monetary policy easing measures taken by central banks, including the European Central Bank (ECB), is likely to support global demand.

The difference between paths for monetary policy implied by market interest rates remains large across countries: euro-area interest rates remain close to 0% over the next three years, whereas in the United States they pick up to a little under 2%. In the United Kingdom, market-implied short-term interest rates reach a little over 1% over the next three years, almost  $\frac{3}{4}$  of a percentage point lower than in November. Sterling has appreciated by 1% since the November *Report*. Despite weak activity abroad, export growth picked up in Q4.

Private sector domestic demand growth has remained robust over the past year. Consumer spending grew strongly in Q3, supported by an increase in household real income growth. In the near term, the boost to real incomes from the fall in energy prices is likely to support consumption growth further. In contrast, activity in the housing market remains muted and housing investment fell in Q3. House prices continued to rise, but at a slower rate than earlier in 2014. Business investment also fell in Q3, but the data are volatile and survey indicators continue to point to robust investment growth.

**Chart 1** GDP projection based on market interest rate expectations and £375 billion purchased assets



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 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 30 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 30 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. 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 outlook for GDP and inflation

Chart 1 shows the MPC's best collective judgement for the outlook for four-quarter GDP growth under the assumptions that: Bank Rate rises gradually to a little above 1%, in line with the path implied by market interest rates; the stock of purchased assets remains at £375 billion; and the price of oil rises gradually to around US\$70, in line with the path implied by futures prices. The path for Bank Rate is lower than in November, when Bank Rate was expected to reach just under 1 $\frac{3}{4}$ % over the forecast period. The robust pace of growth over 2014 is projected to be sustained in the near term, before slowing to around historical average growth rates.

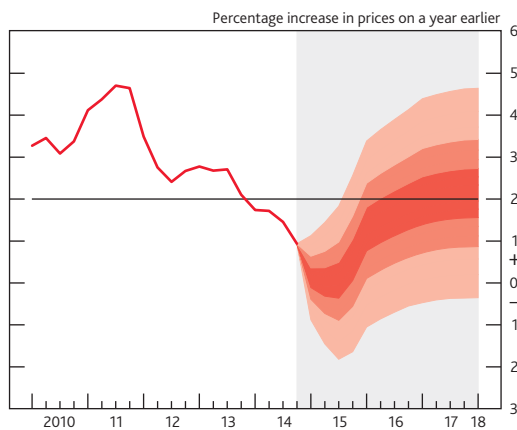
The projection assumes that world GDP growth gradually recovers over the forecast period, supported by the fall in oil prices. There are downside risks from euro-area activity being more persistently weak, from potential market disruption as and



when US interest rates rise, and from the economic challenges faced by major commodity exporters. On the upside, the recent policy actions by the ECB may provide greater stimulus to growth than is incorporated in the central projection and the drop in oil prices may boost demand in oil-importing countries by more than expected.

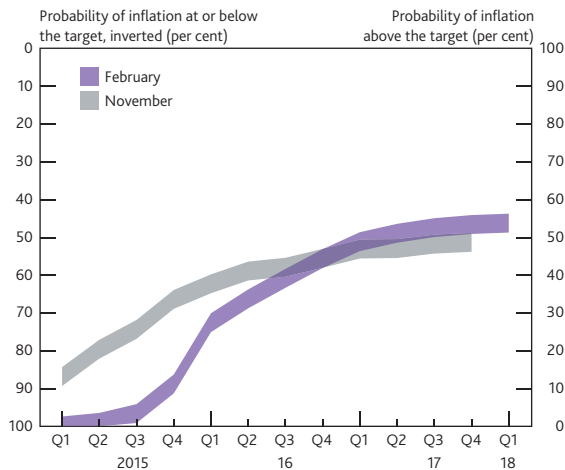
Domestically, the projection is for solid consumption growth as the fall in energy prices and rising wage growth supports growth in households' real incomes. Business investment grows at a similar rate to that projected in November, reflecting the past easing in credit conditions and the recovery in demand. There is a risk that further falls in household interest rates stimulate spending by more than anticipated, balanced against which is the risk that households do not spend the windfall from lower energy prices. Further out, growth is underpinned by a gradual revival in productivity growth. But there remains considerable uncertainty around that judgement.

**Chart 2** CPI inflation projection based on market interest rate expectations and £375 billion purchased assets



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 30 of those occasions. The fan chart is constructed so that outturns of inflation are also expected to lie within each pair of the lighter red areas on 30 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. 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.

**Chart 3** Inflation probabilities relative to the target



The February and November swaths in this chart are derived from the same distributions as Charts 5.1 and 5.2 respectively. They indicate the assessed probability of inflation relative to the target in each quarter of the forecast period. The 5 percentage points width of the swaths reflects the fact that there is uncertainty about the precise probability in any given quarter, but they should not be interpreted as confidence intervals.

**Chart 2** shows the Committee's best collective judgement for the outlook for CPI inflation on the same basis as in **Chart 1**. Inflation is projected to fall further in the near term, as the recent falls in energy prices continue to be passed through to petrol prices and utility bills. Inflation begins to rise in the second half of 2015, as those effects and the recent fall in food and other goods prices drop out of the twelve-month comparison. As the remaining margin of domestic slack continues to be absorbed, inflation is projected to return to target at the two-year point before rising a little further.

The MPC judges there to be a risk that the temporary period of low inflation may persist for longer — if, for example, wages react by more than expected to the recent weakness in inflation. There are, however, also upside risks — for example, if labour market tightness leads to greater-than-expected pressure on wages. Furthermore, inflation will be sensitive to large movements in either direction in energy and other commodity prices, as well as in the exchange rate.

In the near term, the MPC considers that on balance these factors point to downside risks to the inflation outlook, relative to the central path. But by the two-year point, the MPC judges that inflation is as likely to be above as below the target (**Chart 3**).

### The policy decision

The UK expansion has continued, but inflation has fallen to 0.5%, well below the MPC's 2% target. The MPC judges that around two thirds of the undershoot in inflation reflects unusually low contributions from energy, food and other goods prices, which will continue to bear down on annual inflation for the next year or so. The remainder is accounted for by weak domestic cost growth: although it has been diminishing, there remains a degree of slack in the economy.

The MPC's inflation target is symmetric: deviations of inflation below the target are to be treated with the same importance as deviations above it. Given the nature of the shocks affecting inflation, the MPC judges it appropriate to set policy so that it is likely that inflation will return to the 2% target within two years. Inflation is below the target while unemployment is above its long-run sustainable rate. There is therefore no immediate trade-off between returning inflation to the target and supporting economic activity. In fact, to return inflation to the target it is necessary to eliminate the remaining degree of economic slack. It is therefore appropriate to aim to return inflation to the target as quickly as possible after the effects of energy and food price movements have abated.

At its meeting on 5 February, the MPC noted that conditional on interest rates following the path currently implied by market yields, it was likely that slack in the economy would be absorbed and inflation would return to the 2% target within two years.

As set out in this *Report*, there are risks to the inflation outlook in both directions. Were downside risks to materialise, market expectations of the future path of interest rates could adjust to reflect an even more gradual and limited path for Bank Rate increases than is currently priced. The Committee could also decide to expand the Asset Purchase Facility or to cut Bank Rate further towards zero from its current level of 0.5%. The scope for prospective downward adjustments in Bank Rate reflects, in part, the fact that the United Kingdom's banking sector is operating with substantially more capital now than it did in the immediate aftermath of the crisis. Reductions in Bank Rate are therefore less likely to have undesirable effects on the supply of credit to the UK economy than previously judged by the MPC. Were upside risks to materialise, it would be appropriate for Bank Rate to increase more quickly than embodied in current market yields but the likelihood is that those increases would still be more gradual and limited than in previous tightening cycles.

The MPC stands ready to take whatever action is needed, as events unfold, to ensure inflation remains likely to return to target in a timely fashion. Under the central case, the MPC judges it more likely than not that Bank Rate will increase over the forecast period.

In the light of the economic outlook, the Committee voted to maintain Bank Rate at 0.5% and the stock of purchased assets at £375 billion.

# 1 Money and asset prices

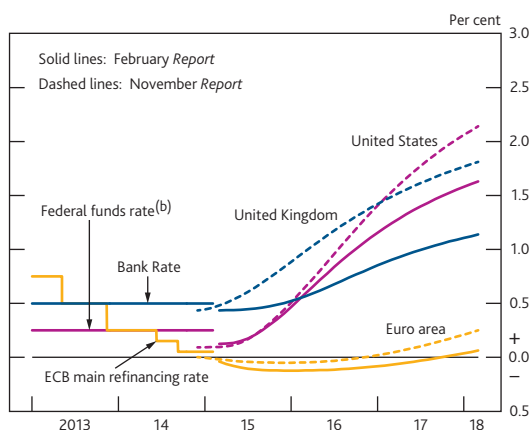
Official interest rates in the United Kingdom remained at historically low levels. The European Central Bank announced details of an expanded asset purchase programme. And a number of other central banks cut their benchmark interest rates. Short and long-term interest rates fell across many advanced economies. In the United Kingdom, past falls in market rates have fed through into lower interest rates on household borrowing. Unsecured lending to households rose. Mortgage approvals for house purchase, however, were weaker than expected. Bank lending to businesses fell a little in Q4, although total net external finance raised increased.

**Table 1.A** Monitoring the MPC's key judgements

Developments anticipated in November	Developments since November
<b>Cost of credit</b>	<b>Broadly as expected</b>
<ul style="list-style-type: none"> <li>• Credit spreads to continue to decline.</li> </ul>	<ul style="list-style-type: none"> <li>• Credit spreads ticked up in Q4, but expected to decline slightly in 2015.</li> </ul>
<b>Mortgage approvals</b>	<b>Weaker than expected</b>
<ul style="list-style-type: none"> <li>• Mortgage approvals for house purchase to rise to around 70,000 a month in 2015 Q2.</li> </ul>	<ul style="list-style-type: none"> <li>• Mortgage approvals averaged 60,000 a month in 2014 Q4.</li> </ul>
<b>House price inflation</b>	<b>Broadly as expected</b>
<ul style="list-style-type: none"> <li>• Rises in the main indices of national house prices to average around ¼% a month by 2015 H1.</li> </ul>	<ul style="list-style-type: none"> <li>• Average of Halifax and Nationwide indices rose by around ½% per month in Q4, and by 1.2% in January.</li> </ul>
<b>PNFC lending</b>	<b>Weaker than expected</b>
<ul style="list-style-type: none"> <li>• PNFC net lending to be positive in 2014 H2, and to pick up in 2015.</li> </ul>	<ul style="list-style-type: none"> <li>• PNFC net lending fell a little in 2014 Q4.</li> </ul>
<b>Evolution of sterling</b>	<b>Slightly higher than expected</b>
<ul style="list-style-type: none"> <li>• Sterling ERI to evolve in line with the conditioning assumption.</li> </ul>	<ul style="list-style-type: none"> <li>• Sterling appreciated by around 1%.</li> </ul>

**Chart 1.1** Markets pricing a more gradual increase in Bank Rate

International forward interest rates<sup>(a)</sup>



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

(a) The November 2014 and February 2015 curves are estimated using instantaneous forward overnight index swap rates in the fifteen working days to 5 November 2014 and 4 February 2015 respectively.

(b) Upper bound of the target rate range of 0% to 0.25%.

## 1.1 Monetary policy and financial markets

### Monetary policy

At its January meeting, the European Central Bank's (ECB's) Governing Council announced that it would extend its asset purchase programme, purchasing €60 billion of public and private sector assets per month. Purchases are intended to last until the end of September 2016, or until a sustained adjustment is seen in the path of inflation, consistent with the ECB's aim of inflation below, but close to, 2% over the medium term. The ECB has left its benchmark interest rates unchanged since September, but in January it cut the interest rate applicable to the remaining six targeted longer-term refinancing operations that offer participating banks direct finance. Market participants expect ECB policy rates to remain close to zero for the next three years (**Chart 1.1**).

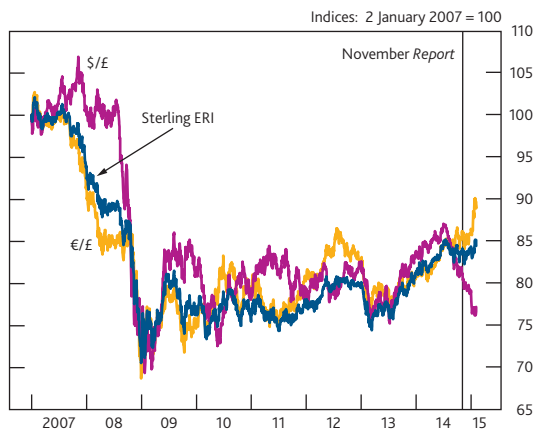
In the United Kingdom, the Monetary Policy Committee (MPC) maintained Bank Rate at 0.5% and the stock of purchased assets at £375 billion. The reasons behind the MPC's recent policy decisions are discussed in the box on page 15. Market interest rates imply that Bank Rate is expected to increase from mid-2016 to a little over 1% in three years' time, materially lower than had been implied three months ago (**Chart 1.1**).

In the United States, the Federal Open Market Committee (FOMC) reaffirmed its view that the target range for the federal funds rate of 0% to 0.25% remained appropriate. The FOMC noted that recent data outturns supported the view that economic activity was expanding at a solid pace. Market prices imply that the federal funds rate is expected to increase from late 2015 to a little over 1½% in three years' time, lower than in the run-up to the November Report (**Chart 1.1**).

The Swiss National Bank discontinued its exchange rate floor and lowered its interest rate on sight deposits. Several other

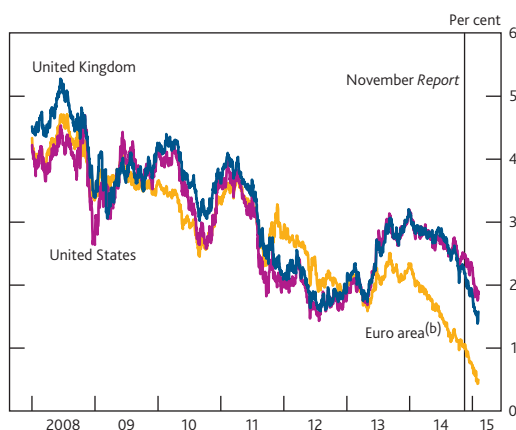
**Chart 1.2 Large and broadly offsetting moves underlie a small appreciation in sterling since November**

Sterling exchange rates



**Chart 1.3 Longer-term interest rates have been falling since late 2013**

International ten-year government bond yields<sup>(a)</sup>



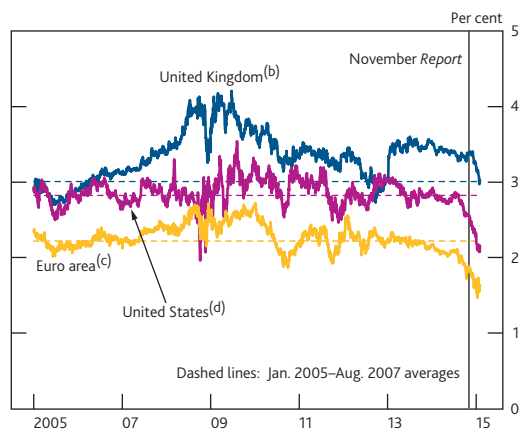
Sources: Bloomberg and Bank calculations.

(a) Zero-coupon yields on ten-year benchmark government bonds.

(b) An estimate based on French and German government bonds.

**Chart 1.4 Implied inflation rates down internationally, but remain around pre-crisis average in the United Kingdom**

Five-year, five-year forward implied inflation rates<sup>(a)</sup>



Sources: Bloomberg and Bank calculations.

(a) Derived from the Bank's government liability curves using inflation swap rates.

(b) Implied inflation rates for RPI.

(c) An estimate based on French and German inflation swap rates. Implied inflation rates for HICP.

(d) Implied inflation rates for CPI.

central banks — including those in Australia, Canada, Denmark and Norway — also cut their benchmark interest rates. The People's Bank of China cut its reserve requirement ratio.

### Exchange rates

The sterling effective exchange rate (ERI) was around 1% higher in the run-up to the February *Report* than three months earlier (**Chart 1.2**), and remains above the range observed between 2009 and 2013. Sterling depreciated by around 6% against the US dollar, as part of a generalised strengthening in the dollar. This was more than offset by a 4% appreciation against the euro, reflecting broader weakness in the euro. Those movements are likely to reflect changes in relative growth and policy expectations, and accompanying changes in relative market interest rates, as investors seek to equalise expected risk-adjusted returns on assets in different currencies.

### Long-term interest rates

Long-term interest rates have continued to fall across many advanced economies. Interest rates on government borrowing in Greece, however, have risen since November, partly reflecting increased political uncertainty.

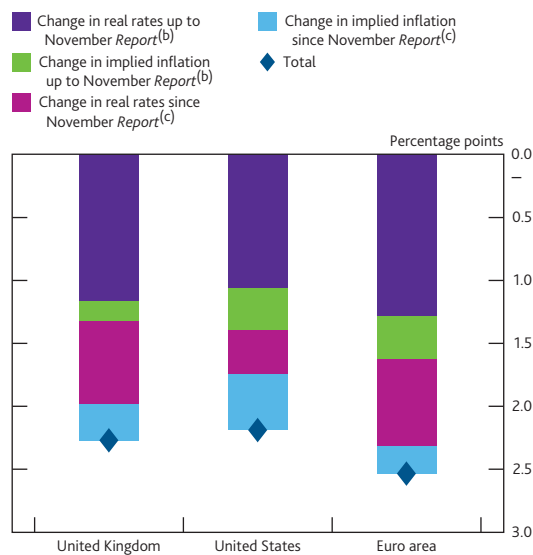
The nominal cost of government borrowing for the next ten years — the ten-year spot rate — has fallen by  $\frac{3}{4}$  of a percentage point in the United Kingdom since the November *Report*, and by just over  $\frac{1}{2}$  a percentage point in the United States and euro area (**Chart 1.3**). These falls reflected declines in both real interest rates and implied inflation, although the relative importance of these differed across countries. In the United Kingdom, most of the fall reflected lower real interest rates.

The decline in implied inflation rates might, in part, reflect common factors. Recent falls in the oil price (Section 4) have probably reduced near-term inflation expectations and hence market-implied inflation rates. But implied inflation is also lower at longer horizons. Over the past three months, the implied inflation rate for five to ten years ahead has fallen by almost  $\frac{1}{2}$  a percentage point in the United States, and by around  $\frac{1}{4}$  of a percentage point in the euro area and the United Kingdom (**Chart 1.4**). Market contacts suggest some of the recent falls could reflect increased concerns about the long-term sustainability of world growth, which might weigh on inflation expectations globally.

Some of the moves in longer-term implied inflation might reflect more country-specific factors. In the United States, longer-term implied inflation rates have been correlated with those at shorter horizons. In the euro area, the fall in implied inflation rates could reflect expectations of persistent weakness in euro-area inflation beyond the near-term drag from lower oil prices.

### Chart 1.5 Lower real rates the predominant factor behind lower long-term interest rates

Contributions to the fall in five-year, five-year forward nominal interest rates since the start of 2014<sup>(a)</sup>

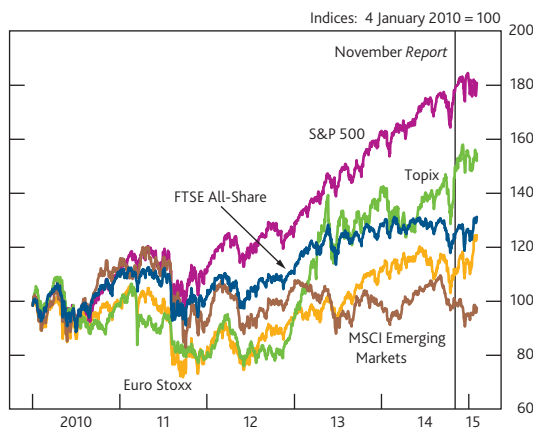


Sources: Bloomberg and Bank calculations.

- (a) Derived from the Bank's government liability curves. The contribution of real rates and implied inflation to the change in nominal rates is calculated using inflation swap rates.  
 (b) Change between 31 December 2013 and the fifteen working days to 5 November 2014.  
 (c) Change between the fifteen working days to 5 November 2014 and the fifteen working days to 4 February 2015.

### Chart 1.6 Advanced-economy equity prices have risen since the November Report

International equity prices<sup>(a)</sup>



Source: Thomson Reuters Datastream.

- (a) In local currency terms, except MSCI Emerging Markets, which is in US dollar terms.

While the UK implied inflation rate five to ten years ahead has fallen to close to its pre-crisis average, in the euro area and United States implied inflation rates have fallen below their averages (**Chart 1.4**). This could suggest that genuine expectations of future inflation have declined by less in the United Kingdom than in other countries, but it is possible that declines are being masked by idiosyncratic factors supporting implied inflation. In particular, investors such as defined benefit pension funds have increased their demand for assets that hedge their inflation-linked liabilities, such as index-linked bonds. That increases the prices of these bonds, reducing real rates and increasing implied inflation rates. Liability-driven investors bought almost half of the net issuance of index-linked bonds by the Debt Management Office in the first three quarters of 2014, compared with less than a third in 2013. Market contacts suggest that net demand from these investors declined relative to net issuance in early 2015, and so it may be providing less support to UK implied inflation rates.

Long-term real interest rates have also fallen since the November Report (**Chart 1.5**). Since the start of 2014, lower real rates account for the majority of the fall in the cost of government borrowing five to ten years ahead in the United Kingdom, United States and euro area. In part, that may reflect an increase in perceptions among market participants of downside risks to long-term growth in those economies. The fall in real rates could also reflect the effects of increased expectations of asset purchases by the ECB and Bank of Japan. As well as reducing rates in the euro area and Japan, asset purchases may reduce the rates on assets that are seen as good substitutes by investors, such as UK and US government bonds.

The falls in real interest rates could also reflect greater investor demand for advanced-economy assets in response to an increase in the perceived risk of holding other assets, such as those from some emerging economies. Capital inflows to emerging economies weakened in 2014 H2, according to estimates from the Institute of International Finance.

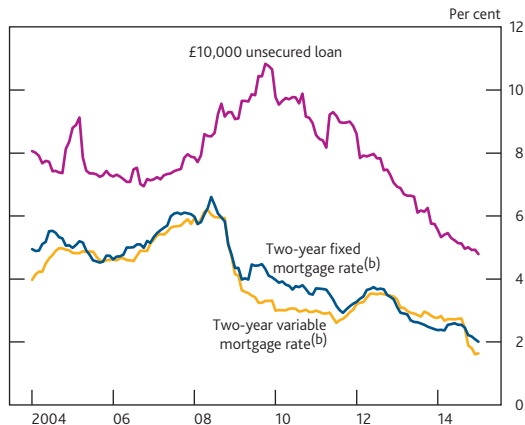
### Corporate capital markets

Equity prices in advanced economies have risen over the past three months: UK and US equity prices are around 5% higher, while euro-area equity prices have risen by almost 12% (**Chart 1.6**). Those rises are despite large falls in oil company equity prices following the decline in the oil price. Equity prices are likely to have been supported, in part, by the falls in global interest rates. But partly offsetting that, an increase in uncertainty around the outlook appears to have weighed on asset prices. Measures of the equity risk premia, for example, have risen across countries.

In contrast to advanced economies, emerging market equity prices have fallen by 2% since the run-up to the

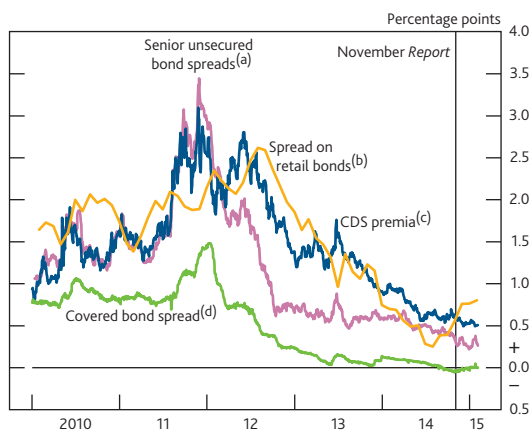
**Chart 1.7 Lending rates have fallen over the past three months**

Average quoted household interest rates<sup>(a)</sup>



(a) Sterling-only end-month average quoted rates. The Bank's quoted 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)). Data are non seasonally adjusted.  
(b) On mortgages with a loan to value ratio of 75%.

**Chart 1.8 Spreads on bank funding remain low**  
UK banks' indicative longer-term funding spreads



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

(a) Constant-maturity unweighted average of secondary market spreads to swaps for the major UK lenders' five-year euro senior unsecured bonds or a suitable proxy.  
(b) Sterling average of two and three-year spreads on retail bonds, over relevant swap rates.  
(c) Unweighted average of the five-year senior CDS premia for the major UK lenders.  
(d) Constant-maturity unweighted average of secondary market spreads to swaps for the major UK lenders' five-year euro-denominated covered bonds or a suitable proxy.

November Report (Chart 1.6). Emerging market corporate bond prices have also fallen.

## 1.2 Credit conditions

Falls in market interest rates have contributed to declines in bank funding costs and in the interest rates faced by households (Chart 1.7) and businesses. The extent to which lower interest rates will lead to an increase in net lending depends on whether households and businesses increase their demand for bank credit in response.

### Bank funding

Conditions in a range of funding markets available to banks remain benign, having improved markedly in recent years. Since mid-2012, banks have been able to access the Bank of England and HM Treasury's Funding for Lending Scheme (FLS). In December 2014, the FLS was extended until January 2016, with incentives focused towards lending to small and medium-sized enterprises.

Banks have been able to raise funds at low cost in wholesale and deposit funding markets during 2014, limiting the need to draw from the FLS. The fall in short-term interest rates over the past three months (Section 1.1) has meant that reference rates, which constitute part of banks' wholesale funding costs, have fallen. Meanwhile, the spread over reference rates that banks pay is little changed (Chart 1.8). Similarly, although retail deposit rates have not fallen as much as wholesale rates, they remain at historically low levels.

One factor that has probably contributed to the fall in wholesale funding costs since 2012 is increased confidence in the resilience of the UK banking sector. Results of a UK stress test assessing that resilience were published in December 2014.<sup>(1)</sup> The Financial Policy Committee judged that, as at end-2013, no system-wide macroprudential actions were necessary to improve the resilience of the banking sector.

### Mortgage lending and the housing market

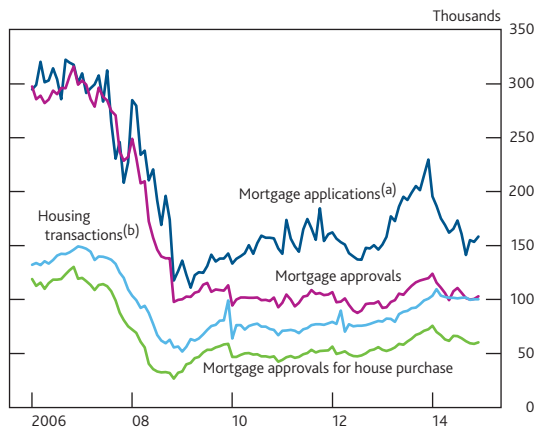
Interest rates on secured lending to households have fallen significantly over the past three months (Chart 1.7), reflecting the fall in bank funding costs. The average two-year fixed mortgage rate, for example, is at a record low. Those falls in interest rates should support mortgage market activity, but the level of mortgage applications remains low (Chart 1.9). Mortgage approvals for house purchase averaged 60,000 per month in Q4, weaker than expected at the time of the November Report (Table 1.A). The level of overall housing transactions remains muted.

(1) For a detailed discussion of the results of the stress test see the December 2014 *Financial Stability Report*; [www.bankofengland.co.uk/publications/Documents/fsr/2014/fsrfull1412.pdf](http://www.bankofengland.co.uk/publications/Documents/fsr/2014/fsrfull1412.pdf).



### Chart 1.9 Mortgage applications and approvals remain weak

Mortgage applications, mortgage approvals and housing transactions



Sources: Bank of England, HM Revenue and Customs and National Hunter.

(a) Seasonally adjusted by Bank staff.

(b) Number of residential property transactions for values of £40,000 or above.

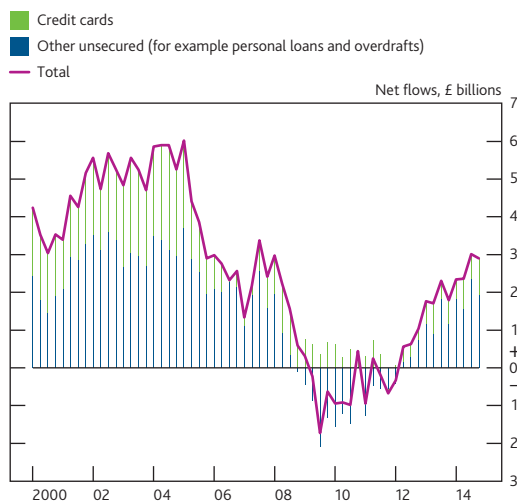
Weak housing market activity is, in part, likely to reflect subdued demand. Demand for secured credit was reported to have fallen in 2014 Q4, according to respondents to the *Credit Conditions Survey (CCS)*, having also fallen in Q3. New mortgage demand among existing homeowners appears to have been particularly weak during 2014 as a whole, with approvals for homeowners significantly below pre-crisis levels, according to estimates based on data from the Council of Mortgage Lenders. Some homeowners may have been discouraged from putting their house on the market and moving home because the terms on a new mortgage were more expensive than those on their existing mortgage.<sup>(1)</sup>

Mortgage approvals are projected to average 60,000 a month in 2015 Q1. They are expected to pick up very gradually during 2015, with falls in mortgage interest rates contributing to a gradual increase in mortgage demand. To the extent that falls in interest rates narrow the gap between pre-crisis mortgage arrangements and new mortgage products, homeowners may become more willing to move. In addition, reforms to stamp duty announced in the Autumn Statement have reduced the cost of buying a house for the majority of transactions and that should provide some support to mortgage activity in the near term.

House price inflation has remained steady since the November *Report*. In January, the average of the Halifax and Nationwide house price indices increased by 1.2% on the month. That follows an average monthly increase of 0.4% in 2014 Q4, broadly in line with expectations in the November *Report*. The continued rise in house prices in the face of weak transactions is likely to reflect weakness in the supply of houses on the market: the net balance for new instructions to sell has been negative since the autumn, according to the Royal Institution of Chartered Surveyors' survey. House price inflation is projected to average around ¼% per month in 2015 Q1.

### Chart 1.10 Strength in unsecured credit driven by personal loans

Contributions to unsecured lending<sup>(a)</sup>



(a) Excludes student loans.

### Unsecured lending to households

Some quoted interest rates on unsecured lending have fallen over the past year (Chart 1.7). For example, the average quoted interest rate on a £10,000 personal loan was 4.8% in January, around ¾ of a percentage point lower than a year earlier.

The fall in personal loan rates has been associated with an increase in loans (Chart 1.10), which will have helped households finance consumption (Section 2). The net flow of unsecured credit was around £3 billion in Q4. And in the year to December, unsecured credit grew by 6.7%, close to its average rate between 2000 and 2007. Much of this was accounted for by non credit card unsecured lending, such as

(1) For a fuller discussion of some of the reasons for the weakness in mortgage demand see pages 13–14 of the November 2014 *Report*; [www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14nov.pdf](http://www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14nov.pdf).

personal loans: the majority of that lending in 2014 was for car finance. While net unsecured lending has increased, the outstanding stock of consumer credit remains around 20% lower than its peak in 2008 Q3, largely reflecting write-offs of previously advanced loans.

### Corporate credit conditions

Overall credit conditions for companies improved a little in Q4. The spreads charged on loans were reported to have fallen for large and medium-sized enterprises, according to respondents to the CCS. Spreads for smaller businesses were broadly unchanged. Contacts of the Bank's Agents also reported that credit availability for companies improved a little in Q4. Despite improvements in credit conditions, borrowing from banks remained weak: net lending to private non-financial corporations (PNFCs) fell in Q4, below expectations at the time of the November *Report*. Some measures of net lending to businesses outside the real estate sector continued to increase compared with a year earlier but at a slightly slower pace. Net lending to the real estate sector has continued to decline at a marked pace.

PNFCs have been increasing their use of non-bank sources of finance, which may have reduced their demand for bank credit (Table 1.B). Net external finance raised during 2014 was £14 billion. Much of that increase was accounted for by strong corporate bond issuance, which was £13 billion in 2014, supported by low corporate bond rates. That was broadly in line with its historical average. Net equity issuance was also strong in 2014, with more equity issued than in any year since 2010.

The stock of loans extended to small and medium-sized enterprises (SMEs) — which are less likely to have access to bond or equity markets — changed little in 2014. This may partly reflect less marked improvements in credit conditions for SMEs than for larger businesses. But some of this weakness is also likely to reflect weak credit demand as profitability has improved. According to the 2014 Q3 *SME Finance Monitor*, around three quarters of small and medium-sized companies either did not want, or need, to access bank credit.

**Table 1.B Bond and equity issuance have been strong during 2014**  
Net external finance raised by PNFCs<sup>(a)</sup>

£ billions	Quarterly averages					
	2003–08	2009–12	2013	2014 H1	2014 Q3	2014 Q4
Loans	11.5	-6.2	-2.2	-2.6	1.9	-2.1
Bonds <sup>(b)(c)</sup>	3.4	3.2	3.1	-0.1	7.5	6.0
Equities <sup>(b)</sup>	-2.1	1.3	-1.2	2.2	0.7	1.1
Commercial paper <sup>(b)</sup>	0.0	-0.4	0.0	-1.8	1.6	-0.4
Total <sup>(d)</sup>	12.7	-2.0	-0.4	-2.9	13.5	3.6
Memo: PNFC loan growth <sup>(e)</sup>	2.8	-0.7	-0.1	-0.9	-0.3	-1.1

(a) Includes sterling and foreign currency funds.

(b) Non seasonally adjusted.

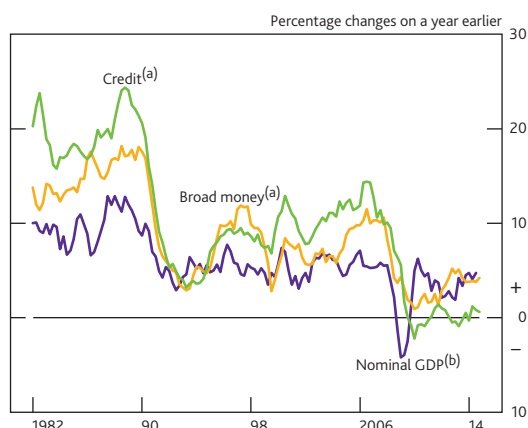
(c) Includes stand-alone and programme bonds.

(d) As component series are not all seasonally adjusted, the total may not equal the sum of its components.

(e) Sterling net lending excluding the effects of securitisations. Percentage change on a quarter earlier.

**Chart 1.11 Broad money grew at a similar rate as GDP in 2014**

Broad money, nominal GDP and credit



(a) M4 and M4 lending (excluding securitisations) growth prior to 1998 Q4, and equivalent measures excluding the deposits of, and borrowing by, intermediate other financial corporations thereafter.

(b) At current market prices. The latest observation is 2014 Q3.

## 1.3 Money

Annual broad money growth was 4.2% in 2014 Q4 (Chart 1.11). Within that, money holdings by other financial institutions were broadly flat, but flows into household and PNFC deposits remained robust. Broad money has typically grown more quickly than nominal GDP. But recently broad money has grown at a similar pace to nominal GDP. That is likely to reflect, in part, credit growth — one of the main sources of money creation — having been historically weak since the financial crisis.<sup>(1)</sup>

(1) For a detailed discussion of the determinants of money creation see McLeay, M, Radia, A and Thomas, R (2014), 'Money creation in the modern economy', *Bank of England Quarterly Bulletin*, Vol. 54, No. 1, pages 14–27; [www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q102.pdf](http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q102.pdf).



## Monetary policy since the November Report

The MPC's central projection in the November *Report*, under the assumptions that Bank Rate followed a path implied by market interest rates and that the stock of purchased assets remained at £375 billion, was that four-quarter GDP growth would be close to its historical average rate for much of the next three years. Inflation was expected to remain subdued for the next year or so before returning towards the 2% target.

When the MPC met on 3–4 December, the price of Brent crude oil had fallen by 15% in sterling terms since the previous MPC meeting and by 35% since mid-June. As a consequence, CPI inflation was expected to dip below 1% in the near term, probably in the December data, and the near-term profile for inflation was somewhat weaker than had been assumed at the time of the November *Report*. Near-term activity in both the United Kingdom and the United States appeared a touch stronger than previously thought, although the outlook for the euro area remained subdued. The UK unemployment rate had fallen by 0.3 percentage points to 6.0% in Q3, and recent signs of a pickup in domestic wage growth were promising.

For most members, the outlook justified maintaining the current level of Bank Rate. For two members, economic circumstances continued to justify an immediate rise in Bank Rate. The continued fall in the unemployment rate was consistent with the rapid absorption of slack, and since monetary policy could be expected to operate only with a lag, it was desirable to anticipate labour market pressures by raising Bank Rate in advance of them. Seven members of the Committee voted to maintain Bank Rate at 0.5%, and two members voted to increase Bank Rate by 25 basis points. The Committee voted unanimously to keep the stock of asset purchases at £375 billion.

By the time the Committee met on 7–8 January, oil prices had fallen to US\$50 per barrel. UK market interest rates had declined. The one-year sterling rate one year ahead had fallen by close to 20 basis points and was 40 basis points lower than

at the time of the November *Report*. There had, however, been relatively little news on activity.

In line with the usual pre-release arrangements, an advance estimate for CPI inflation of 0.5% for December had been provided via the Governor to the MPC, ahead of publication. As set out in the Committee's remit, this would necessitate an exchange of letters between the Governor and the Chancellor of the Exchequer.

Inflation was now expected by Bank staff to reach a trough of close to zero in March, as lower oil prices fed through to petrol prices. There was, therefore, a roughly even chance that CPI inflation would temporarily dip below zero at some time during the first half of 2015.

In the view of all members, the outlook justified maintaining the current level of Bank Rate. It was possible that the risks to CPI inflation in the medium term might have, if anything, shifted to the upside given the pickup in wage growth and support from lower oil prices and market interest rates. All members, however, were alert to the downside risk of current low inflation becoming entrenched.

For the two members who had voted in the previous month for an increase in Bank Rate, the decision in January was finely balanced. They believed that the sharp fall in inflation to below the 2% target was driven largely by temporary factors and that wage growth was more buoyant than they had expected. Nevertheless, they noted the risk that low inflation might persist for longer than the temporary factors implied and concluded that this risk would be intensified by an increase in Bank Rate at the current juncture. The Committee voted unanimously to maintain Bank Rate at 0.5% and to keep the stock of asset purchases at £375 billion.

At its meeting on 4–5 February, the MPC voted to maintain Bank Rate at 0.5%, and the stock of purchased assets at £375 billion.

## 2 Demand

GDP growth remained solid in 2014 Q3, and continued to be accounted for by rising private sector domestic demand. Household spending growth was robust. Business investment contracted in Q3, although survey indicators point to a recovery in Q4. UK-weighted world demand growth was subdued in Q3, and is expected to pick up only gradually. The trade deficit narrowed slightly, but the current account deficit widened in Q3, equalling its record high of 6% of GDP.

**Table 2.A** Monitoring the MPC's key judgements

Developments anticipated in November	Developments since November
<b>Consumer spending</b>	<b>Stronger than expected; outlook broadly unchanged</b>
<ul style="list-style-type: none"> <li>Quarterly consumer spending growth of a little below ¾%.</li> <li>Household saving ratio to fall further.</li> </ul>	<ul style="list-style-type: none"> <li>Grew by 1% in Q3; around ¾% expected in Q4.</li> <li>Saving ratio fell slightly in Q3.</li> </ul>
<b>Investment</b>	<b>Weaker than expected</b>
<ul style="list-style-type: none"> <li>Quarterly business investment growth of around 2½%.</li> <li>Quarterly housing investment growth to average 1% in 2015 H1.</li> </ul>	<ul style="list-style-type: none"> <li>Fell by 1.4% in Q3, although initial estimates are uncertain, and expected to recover in Q4.</li> <li>Fell by 1.1% in Q3, outlook for Q4 weaker than expected.</li> </ul>
<b>Other advanced economies</b>	<b>Euro area on track; US stronger than expected</b>
<ul style="list-style-type: none"> <li>Quarterly euro-area GDP growth averaging a little above ¼%, with credit conditions improving slightly. Inflation broadly stable for rest of 2014, picking up in 2015 H1.</li> <li>Average quarterly US GDP growth a little above ½%; non-farm payrolls increasing by a little more than 200,000 per month.</li> </ul>	<ul style="list-style-type: none"> <li>Growth in Q3 as expected. Headline inflation fell further to -0.6% in January, in part reflecting falls in oil prices.</li> <li>GDP growth 0.7% in Q4; non-farm payrolls stronger than expected.</li> </ul>
<b>Rest of the world</b>	<b>Broadly on track</b>
<ul style="list-style-type: none"> <li>Average four-quarter PPP-weighted emerging-economy growth of around 4½%. Chinese GDP growth slightly above 7%.</li> </ul>	<ul style="list-style-type: none"> <li>Emerging-economy GDP growth was 4.7% in Q3. Chinese GDP growth was 7.3% in Q4.</li> </ul>
<b>Exports</b>	<b>Broadly on track</b>
<ul style="list-style-type: none"> <li>Average quarterly growth in UK exports of around 1%.</li> </ul>	<ul style="list-style-type: none"> <li>Exports grew by 0.7% in Q3. Monthly goods exports picked up in Q4.</li> </ul>

GDP grew by 0.7% in 2014 Q3, unchanged from the estimate available at the time of the *November Report*. Demand growth continued to be largely accounted for by private final domestic demand, and that is expected to have continued in Q4 (Section 2.1). In contrast, UK-weighted world demand growth remained subdued in Q3, broadly as expected in November (Section 2.2).

Solid domestic demand growth in recent years has been associated with declines in households' and companies' financial saving rates (**Chart 2.1**). The principal counterpart to that has been a narrowing in the fiscal deficit, reflecting continued consolidation (Section 2.1). But the current account deficit has also widened and, in 2014 Q3, was equal to its record high. This reflected a further deterioration in net investment income (Section 2.2).

A key development for the outlook has been the fall in oil prices (Section 4). That is expected to support domestic demand by boosting real incomes. The external demand outlook is judged to be broadly unchanged since November, as the boost from the fall in oil prices is offset by a weaker projection for emerging economies and commodity-exporting countries.

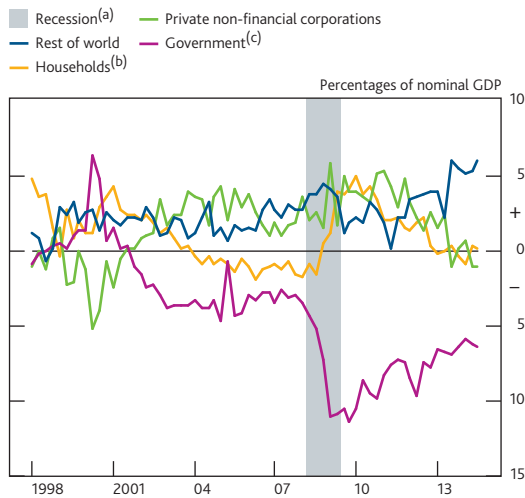
### 2.1 Domestic demand

#### Household spending

Household spending grew by 1% in Q3 (**Table 2.B**), its highest quarterly rate since 2010 Q2 and stronger than had been anticipated in the *November Report* (**Table 2.A**). That reflected robust growth in spending on both durables and non-durables, with a particularly large contribution from the purchase of vehicles (**Table 2.C**). The strength in car purchases is unlikely to persist in Q4, but broader indicators of household spending, such as retail sales volumes and survey measures of retailers' sales and orders, remained strong. Consumption growth in Q4 is expected to have been robust at around ¾%.

**Chart 2.1 Private domestic financial saving has fallen since 2012; external deficit has widened**

Net financial accounts by sector



- (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 begins to rise.  
 (b) Includes non-profit institutions serving households.  
 (c) Excludes public corporations. The series has been adjusted by Bank staff to exclude the impact of Asset Purchase Facility transfers, which are non seasonally adjusted.

**Table 2.B Household consumption growth robust in Q3; private sector investment fell**

Expenditure components of demand<sup>(a)</sup>

Percentage changes on a quarter earlier

	Averages				2014		
	1998–2007	2008–09	2010–12	2013	Q1	Q2	Q3
Household consumption <sup>(b)</sup>	0.9	-0.6	0.1	0.5	0.6	0.6	1.0
Private sector investment	0.6	-3.8	1.3	2.0	1.5	3.8	-1.3
of which, business investment <sup>(c)</sup>	0.5	-1.9	1.5	1.7	0.7	3.2	-1.4
of which, private sector housing investment	0.9	-8.1	1.4	2.8	3.7	5.3	-1.1
<b>Private sector final domestic demand</b>	<b>0.9</b>	<b>-1.2</b>	<b>0.4</b>	<b>0.7</b>	<b>0.8</b>	<b>1.1</b>	<b>0.6</b>
Government consumption and investment <sup>(c)</sup>	0.8	0.8	-0.1	0.0	0.8	0.1	1.2
<b>Final domestic demand</b>	<b>0.9</b>	<b>-0.7</b>	<b>0.3</b>	<b>0.5</b>	<b>0.8</b>	<b>0.9</b>	<b>0.7</b>
Change in inventories <sup>(d)(e)</sup>	0.0	0.1	0.0	0.3	-0.2	0.0	-0.2
Alignment adjustment <sup>(e)</sup>	0.0	-0.1	0.1	-0.1	0.0	-0.4	0.5
<b>Domestic demand</b>	<b>0.8</b>	<b>-0.7</b>	<b>0.3</b>	<b>0.7</b>	<b>0.6</b>	<b>0.5</b>	<b>1.0</b>
'Economic' exports <sup>(f)</sup>	1.2	-1.0	0.9	0.1	0.7	-0.8	0.7
'Economic' imports <sup>(f)</sup>	1.4	-1.2	0.8	0.5	0.5	-1.7	1.3
<b>Net trade<sup>(e)(f)</sup></b>	<b>-0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>-0.1</b>	<b>0.0</b>	<b>0.3</b>	<b>-0.2</b>
<b>Real GDP at market prices</b>	<b>0.7</b>	<b>-0.7</b>	<b>0.3</b>	<b>0.6</b>	<b>0.6</b>	<b>0.8</b>	<b>0.7</b>
Memo: nominal GDP at market prices	1.3	0.0	0.8	1.1	1.0	1.3	1.3

- (a) Chained-volume measures unless otherwise stated.  
 (b) Includes non-profit institutions serving households.  
 (c) Investment data 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 by Bank staff for MTIC fraud by an amount equal to the ONS import adjustment.

Solid household consumption growth in recent years has been funded by both a pickup in incomes and a decline in the saving ratio. Much of the rise in consumption growth prior to 2014 was accompanied by a fall in the saving ratio, as income growth stagnated (Table 2.C). The household saving ratio is 2 percentage points lower than in 2012 Q3, and household saving as a proportion of income available to spend, which excludes household income recorded as going directly to pension funds, is similarly lower (Chart 2.2). Households may have chosen to save less as they became more optimistic about future income growth, or as they became less worried about the risk of unemployment. Improvements in credit conditions will also have made it easier for households to fund spending through borrowing.

Since the start of 2014, aggregate household income growth has picked up, reflecting the rise in employment, and has broadly kept pace with rises in consumption (Table 2.C). A key determinant of the near-term outlook is the extent to which consumption growth continues to be funded by rises in real income. Wage growth has continued to recover, and large falls in food and energy prices (Section 4) are likely to increase households' resources available to spend on other goods and services. Spending on food and energy accounts for around 15% of overall consumer spending and falls in prices are likely to have boosted real incomes by around  $\frac{3}{4}\%$  in December, compared with a year ago. Reflecting that, the current rate of household spending growth is likely to be sustainable without a marked fall in the saving ratio (Section 5). Overall, Bank staff project solid consumption growth in 2015 H1.

### Housing investment

Housing investment, which comprises spending on newly built dwellings, improvements to existing dwellings and spending on services associated with property transactions, has grown strongly since 2013, but fell in 2014 Q3 (Table 2.B). While housing market activity is likely to have been supported by the recovery in households' optimism and credit availability, transactions and mortgage market activity have been subdued for much of 2014 (Section 1). That will have weighed on spending on services associated with housing transactions, such as estate agents' fees, which fell in Q3. In addition, following a sharp rise in 2013, spending on new dwellings also declined in Q3.

The near-term outlook for housing investment is weaker than at the time of the November Report. Continued weakness in mortgage approvals suggests that the number of transactions — and therefore associated spending — will remain subdued in the near term (Section 1). And the number of housing starts has declined in recent quarters (Chart 2.3), which is likely to feed through to lower recorded investment in new homes in coming quarters. Bank staff expect housing investment to be broadly flat over the first half of 2015.

**Table 2.C Real labour income growth has kept pace with the rise in consumption in 2014**

Consumption and income

	Averages			2014		
	1998–2007	2010–12	2013	Q1	Q2	Q3
<b>Percentage changes on a quarter earlier</b>						
Consumption <sup>(a)</sup>	0.9	0.1	0.5	0.6	0.6	1.0
<i>of which:</i>						
Non-durable consumption (81%) <sup>(b)(c)</sup>	0.5	0.1	0.1	0.2	0.3	0.5
Vehicles and spare parts (4%) <sup>(b)</sup>	0.0	-0.1	0.1	0.2	0.0	0.3
Other durable goods (15%) <sup>(b)(d)</sup>	0.3	0.1	0.3	0.2	0.3	0.1
<b>Percentage changes on a year earlier</b>						
Real post-tax income <sup>(e)</sup>	3.1	0.1	0.0	1.7	2.8	2.4
Real post-tax labour income <sup>(f)</sup>	3.2	-0.9	0.4	3.0	3.4	2.2
Consumption <sup>(a)</sup>	3.7	0.5	1.7	1.9	2.0	2.5

(a) Chained-volume measures. Includes non-profit institutions serving households. Components may not sum to total due to chain-linking.

(b) Percentage point contribution to total consumption growth. Figures in parentheses are shares in total consumption spending in 2011.

(c) Includes spending on non-durable goods and consumer services, spending by non-profit institutions serving households and net tourism.

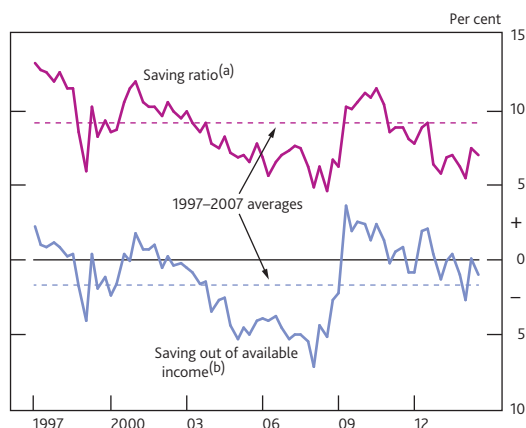
(d) Includes semi-durables.

(e) Total available household resources divided by the consumer expenditure deflator.

(f) Wages and salaries plus mixed income less taxes plus net transfers, deflated by the consumer expenditure deflator.

**Chart 2.2 The household saving ratio has fallen**

Household saving



(a) Percentage of household post-tax income.

(b) Percentage of household post-tax income excluding income flowing into employment-related pension schemes.

## Business investment

Business investment has risen robustly since 2010, reflecting an improvement in demand and companies' credit conditions, and accompanied by reduced saving by companies. Although business investment was weaker in Q3 than expected at the time of the November *Report* (Table 2.A), initial estimates are uncertain and prone to revision. Survey indicators of investment intentions continue to suggest robust growth.

Aggregate investment growth can be heavily influenced by changes in spending by capital-intensive sectors, even if they have a small share in overall investment. During 2011 and 2012, for example, investment growth was largely driven by energy-related sectors such as oil and gas extraction and utilities (Chart 2.4), which together account for less than a fifth of total business investment. Intelligence from the oil industry suggests that North Sea energy companies are likely to cut back capital spending, partly in response to the fall in oil prices. That is likely to exert a drag on overall investment growth in coming years. This drag may be offset to some extent by a further pickup in investment in other sectors, albeit with a longer lag, as the fall in oil prices improves the demand outlook (Section 5).

Overall, investment growth is expected to be robust in the near term, supported in part by the favourable demand outlook. Survey balances of expected orders are above average levels. And as businesses appear, on average, to be operating at slightly above normal levels of capacity (Section 3), they are likely to need to undertake investment in order to satisfy the expected rise in orders. Past improvements in companies' access to finance and reductions in uncertainty about demand are also likely to continue to support growth. According to the Confederation of British Industry (CBI), the proportion of companies citing access to finance and demand uncertainty as constraints on future investment plans remains below its historical average.

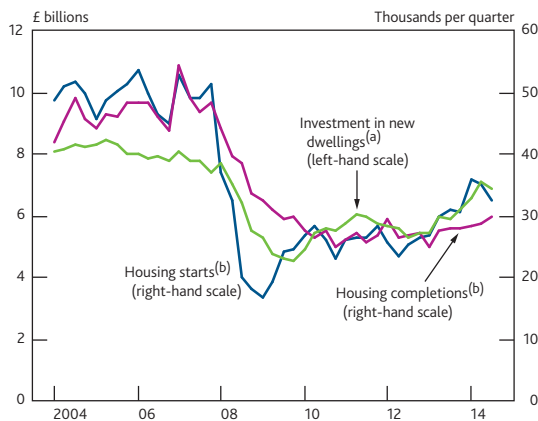
## Government spending

The fiscal consolidation, which has been associated with a reduction in the government deficit since 2010 (Chart 2.1), is set to continue. The Institute for Fiscal Studies estimates that around half of the Government's fiscal consolidation, relative to the March 2008 *Budget*, will have been achieved by the end of the 2014/15 financial year. Most of the tax and investment measures relative to the 2008 baseline have already been implemented. But more than half of the reductions in other government expenditure, such as departmental spending, are yet to take place.

The Office for Budget Responsibility forecasts at the time of the Autumn Statement included significant downward revisions to income tax receipts in coming years. That was driven by downward revisions to projected effective tax rates, reflecting the shift in the composition of employment growth

**Chart 2.3 Fewer housing starts likely to mean lower investment in new homes**

House building and investment in new dwellings

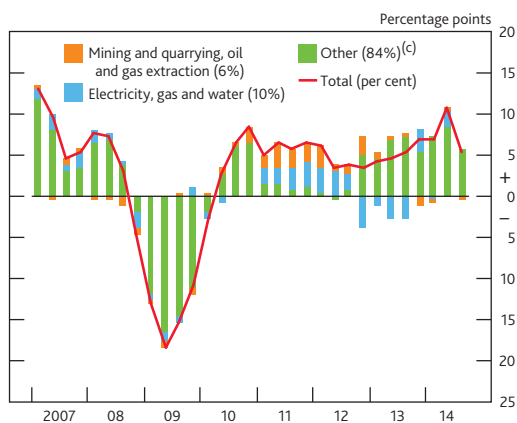


Sources: Department for Communities and Local Government, ONS and Bank calculations.

- (a) Chained-volume measure. Excludes improvements to existing dwellings.  
 (b) Number of permanent dwellings financed and built by private developers. Permanent dwelling starts in Wales are assumed to grow in line with Welsh total permanent dwelling starts since 2011 Q2. UK data for 2014 Q2 and 2014 Q3 have been grown in line with data for England. Data have been seasonally adjusted by Bank staff.

**Chart 2.4 Energy-related sectors influenced investment growth heavily in 2011–12**

Contributions to four-quarter business investment growth<sup>(a)(b)</sup>



- (a) Chained-volume measures. Contributions prior to 2011 are indicative estimates.  
 (b) Figures in parentheses are shares in total business investment in 2011.  
 (c) Total business investment growth less contributions from the mining and quarrying, oil and gas extraction and electricity, gas and water sectors.

**Table 2.D UK-weighted world GDP growth was broadly steady in Q3**

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

Percentage changes on a quarter earlier, annualised

	Averages			2014			
	1998–2007	2012	2013	Q1	Q2	Q3	Q4
United Kingdom	3.0	0.4	2.4	2.5	3.3	3.0	2.0
Euro area (39%)	2.3	-0.9	0.4	1.3	0.3	0.6	n.a.
United States (18%)	3.0	1.6	3.1	-2.1	4.6	5.0	2.6
China (3%) <sup>(b)</sup>	10.0	7.8	7.7	7.4	7.5	7.3	7.3
Japan (2%)	1.1	0.0	2.3	5.8	-6.7	-1.9	n.a.
UK-weighted world GDP <sup>(c)</sup>	3.0	1.1	2.2	1.6	2.1	2.5	n.a.

Sources: Eurostat, IMF *World Economic Outlook (WEO) Update* January 2015, Japanese Cabinet Office, National Bureau of Statistics of China, OECD, ONS, Thomson Reuters Datastream, US Bureau of Economic Analysis and Bank calculations.

- (a) Real GDP measures. Figures in parentheses are shares in UK exports in 2013 from the 2014 *Pink Book*.  
 (b) The earliest observation for China is 2000 Q1. Data are non seasonally adjusted.  
 (c) Constructed using data for the real GDP growth rates of 147 countries weighted according to their shares in UK exports. The observation for 2014 Q3 is an estimate. Where national accounts data for 2014 Q3 are not yet available, data are assumed to be consistent with projections in the IMF *WEO Update* January 2015.

towards less well-paid occupations and industries, and sluggish wage growth (Section 4). The impact of lower receipts on government borrowing is projected to be broadly offset by reduced public spending, particularly on debt interest payments, reflecting lower market interest rates (Section 1).

## 2.2 External demand and UK trade

UK-weighted world GDP has grown at below-average rates in recent years (Table 2.D), largely reflecting subdued growth in the euro area. That is likely to have weighed on UK exports (Table 2.B).

A key development in the global economy since the summer has been the decline in oil prices. While some of the fall in oil prices is likely to reflect subdued global demand and weaker prospects for activity, the majority of the fall is likely to have reflected upside news on oil supply (Section 4). That should provide some boost to demand from oil consumers in coming years, while weighing on activity in some commodity-exporting economies (Section 5).

### The euro area

Euro-area GDP has grown only sluggishly since the first quarter of 2014 (Table 2.D). Within that, growth has been weak in France and Italy, while it picked up in Spain and Ireland (Table 2.E). Euro-area GDP growth was 0.2% in Q3, and activity indicators suggest a broadly similar pace in Q4.

Headline inflation weakened throughout 2014 and, according to the flash estimate, stood at -0.6% in January (Table 2.D). Much of the weakness reflected lower food and energy prices, which are likely to provide some boost to real incomes. But core inflation — which excludes volatile components such as food and energy — has also fallen, with negative rates in some periphery countries towards the end of 2014. According to the flash estimate, euro-area core inflation fell to 0.6% in January. Low core inflation is likely to reflect significant spare capacity in the region: unemployment rates, for example, remain high (Table 2.E), particularly in periphery countries. Weaker domestic price pressures may make rebalancing in the region even more difficult, by making it harder to improve relative competitiveness and to reduce debt positions.

On 22 January, the ECB announced an expanded asset purchase programme (Section 1), which will support euro-area GDP growth and inflation. Growth is expected to pick up gradually, supported by the easing in policy and lower oil prices (Section 5).

### The United States

US GDP growth was robust in the second half of 2014 (Table 2.D), with GDP rising by 0.7% in Q4. That followed upwardly revised quarterly growth of 1.2% in Q3, which in part reflected temporary factors such as a pickup in



**Table 2.E Euro-area activity remained subdued; inflation weakened further**

Euro-area indicators

	Averages		2014				2015
	2000-07	2013	Q1	Q2	Q3	Q4	Jan.
<b>Four-quarter GDP growth<sup>(a)</sup></b>							
Euro area	2.2	-0.4	1.1	0.8	0.8	n.a.	n.a.
France	2.1	0.4	0.8	0.0	0.4	n.a.	n.a.
Germany	1.7	0.2	2.3	1.4	1.2	n.a.	n.a.
Italy	1.5	-1.9	-0.3	-0.4	-0.5	n.a.	n.a.
Spain	3.8	-1.2	0.7	1.3	1.6	2.0	n.a.
Ireland	5.6	0.2	5.1	6.2	3.6	n.a.	n.a.
<b>Euro-area indicators<sup>(b)</sup></b>							
Consumer confidence <sup>(c)</sup>	-9	-19	-11	-8	-10	-11	-9
HICP inflation <sup>(d)</sup>	2.2	1.4	0.6	0.6	0.4	0.2	-0.6
Core HICP inflation <sup>(d)</sup>	1.7	1.1	0.8	0.8	0.8	0.7	0.6
Unemployment	8.6	12.0	11.8	11.6	11.5	11.4	n.a.

Sources: European Commission and Eurostat.

(a) Per cent. Chained-volume measure.

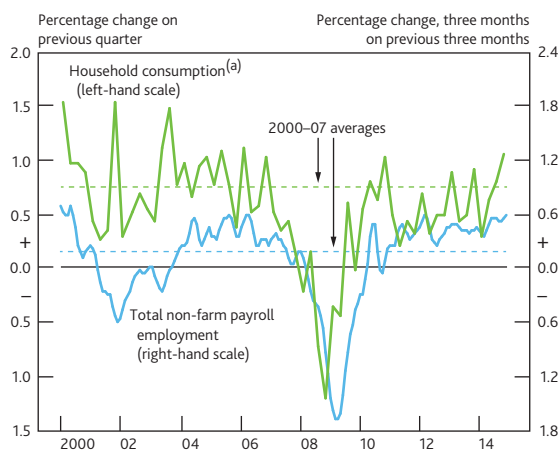
(b) Figures from 2014 Q1 onwards are quarterly averages of monthly data.

(c) European Commission seasonally adjusted measure.

(d) Data are non seasonally adjusted. Core HICP excludes food, energy, alcoholic beverages and tobacco. Data point for January 2015 is a flash estimate.

**Chart 2.5 US household spending and employment growth picked up in Q4**

US household consumption and non-farm payrolls



Sources: Bureau of Economic Analysis and Bureau of Labor Statistics.

(a) Chained-volume measure.

government defence spending. Household consumption was robust in the second half of 2014, following several years of below-average growth (Chart 2.5). Alongside that, labour market indicators have been strong. Non-farm payrolls rose by a monthly average of 290,000 in Q4, stronger than expected in November. The unemployment rate fell to 5.6% in December, around 1 percentage point lower than a year ago, against the backdrop of a broadly flat participation rate.

The near-term outlook for US activity is stronger than expected in November, with consumption and labour market outturns pointing to greater underlying momentum (Table 2.A). Oil price falls are also likely to boost activity this year. But the 15% appreciation in the dollar effective exchange rate since the summer may act as a drag on activity (Section 1).

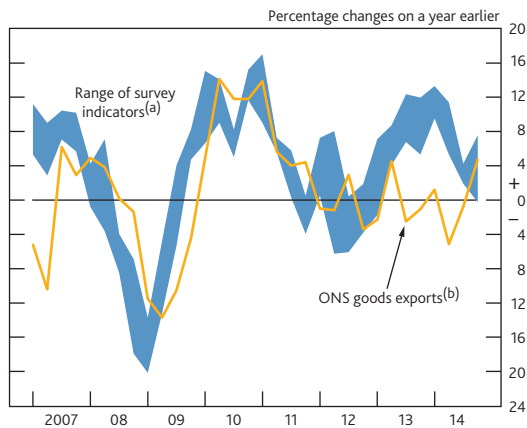
### Rest of the world

Chinese GDP growth moderated in 2014 (Table 2.D), accompanied by a slowdown in the property market and a deceleration in credit growth. GDP grew by 7.4% in 2014, close to the government's target of 7.5%. As in November, growth is expected to remain at similar rates in the first half of 2015. That is consistent with monthly activity indicators such as the HSBC PMI survey. The pace of property price falls has stabilised in recent months, suggesting that policy measures are starting to have an effect. The fall in oil prices is also likely to support growth in coming quarters, which may allow the authorities greater scope to address vulnerabilities in the financial system.

Downside risks to Chinese activity remain, however. The property market continues to pose a risk to financial stability. Another risk relates to China's continuing challenge of rebalancing from investment towards consumption. Some indicators of activity suggest a sharper investment slowdown may be under way, and consumption may not pick up quickly enough to offset that slowing.

The growth outlook in other emerging economies has weakened a little. Although activity was broadly in line with expectations in November (Table 2.A), growth has remained well below rates seen over the past decade. That could indicate weaker medium-term growth prospects than previously anticipated. Activity is also likely to be influenced by the recent decline in oil prices, which will affect oil consumers and the owners of oil production differently. Demand in energy-importing economies is likely to be boosted, but the fall in prices is likely to weigh on activity in oil-exporting economies, particularly in vulnerable countries such as Russia. Taken together, Bank staff project weaker growth rates in emerging economies and commodity exporters (Section 5).

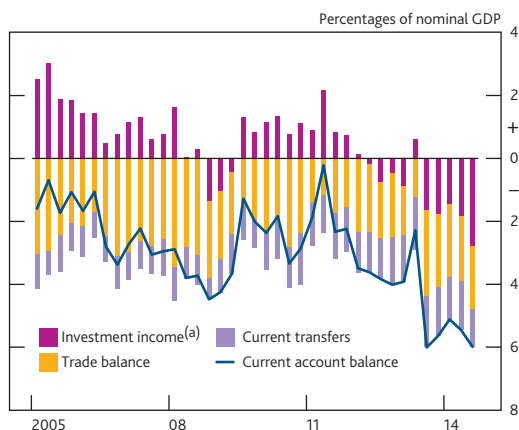
**Chart 2.6 Goods export growth picked up in Q4**  
Exports of goods and survey indicators



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

- (a) Includes measures of manufacturing export orders from BCC, CBI and Markit/CIPS scaled to match the mean and variance of quarterly goods export growth since 2000. BCC data are non seasonally adjusted.  
(b) Excludes the estimated impact of MTIC fraud. Includes oil and erratics.

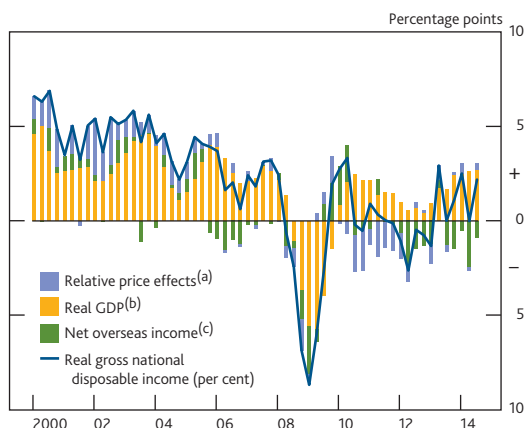
**Chart 2.7 The UK current account deficit equalled its record high in Q3**  
UK current account



(a) Includes compensation of employees.

**Chart 2.8 Net investment income has weighed on national gross disposable income growth**

Contributions to four-quarter growth in a measure of gross national disposable income



- (a) Real GDP less nominal GDP deflated by the final consumption expenditure deflator.  
(b) Chained-volume measure at market prices.  
(c) Includes net investment income and current transfers. Deflated by the final consumption expenditure deflator.

## UK trade and the current account

Export growth has been very weak in recent years (Table 2.B). That is likely to reflect muted global demand growth, the continuing effects of the crisis on financial sector exports, and, since 2013, the appreciation of sterling. Import growth remained solid in Q3, and, as a result, net trade detracted from overall GDP growth.

Goods exports grew robustly in Q4, largely reflecting a pickup in exports to countries outside the European Union. Some of this strength could reflect volatility: the data move sharply from quarter to quarter (Chart 2.6). Indeed, goods exports excluding erratic factors such as oil and precious metals rose at a more modest pace in Q4. Bank staff continue to expect a gradual rise in overall export growth as global demand growth recovers.

Although the trade deficit has narrowed slightly, the UK current account deficit has remained wide since late 2013, equalling its record high of 6% of nominal GDP in 2014 Q3 (Chart 2.7). That has largely reflected further deterioration in the net investment income balance. As discussed in a box on pages 22–23 of the May 2014 Report, the driver of that deterioration has been a decline in income earned by UK private non-financial corporations on their direct investments abroad.

Changes in net investment income will affect the total resources available to UK residents to spend. That effect can be captured by a measure of real gross national disposable income. This measure is comprised of three elements: income earned domestically by UK residents, or GDP; net overseas income, which includes income earned by UK residents on investments abroad and current transfers; and the change in consumer prices relative to other prices in the economy, which reflects the extent to which consumption becomes more or less affordable. Prior to the financial crisis, disposable income outpaced GDP growth, reflecting increases in net investment income and changes in relative prices (Chart 2.8). More recently, however, falls in net investment income have detracted from national disposable income growth.

A deterioration in net investment income will, by itself, decrease the United Kingdom's net international investment position (NIIP), which reflects cumulated current account flows and previous changes in the values of the stocks of external assets and liabilities. But the NIIP has remained broadly steady over the past year, as negative net investment income has been offset by rises in the value of net external assets. Estimates of the NIIP vary, depending on how assets and liabilities are valued. While the ONS's official measure, which largely uses purchase prices to estimate the stock of foreign direct investment, was around -25% of GDP in Q3, market-value measures suggest that the NIIP remained at over 20% of GDP.<sup>(1)</sup>

(1) For further discussion, see the box on pages 18–19 of the November 2014 Report; [www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14nov.pdf](http://www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14nov.pdf), and pages 29–31 of the December 2014 Financial Stability Report; [www.bankofengland.co.uk/publications/Documents/fsr/2014/fsrfull1412.pdf](http://www.bankofengland.co.uk/publications/Documents/fsr/2014/fsrfull1412.pdf).

# 3 Output and supply

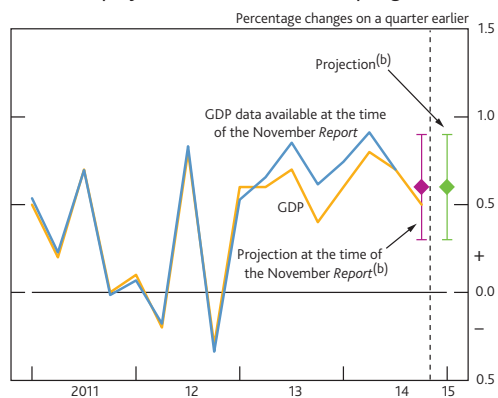
Output growth slowed slightly in 2014 Q4. Unemployment fell, broadly in line with expectations at the time of the previous *Report*, but both participation and employment growth were lower than expected. Average hours nevertheless continued to rise and indicators of labour demand remained strong. Overall, the margin of slack in the economy appears to have narrowed further. Four-quarter hourly productivity growth turned moderately positive in Q3.

**Table 3.A** Monitoring the MPC's key judgements

Developments anticipated in November	Developments since November
<b>Unemployment</b>	<b>Broadly on track</b>
<ul style="list-style-type: none"> <li>Headline LFS unemployment rate to decline to around 5½% by mid-2015.</li> </ul>	<ul style="list-style-type: none"> <li>Unemployment rate fell to 5.8% in the three months to November; expected to be around 5½% by Q2.</li> </ul>
<b>Participation</b>	<b>Lower than expected</b>
<ul style="list-style-type: none"> <li>The labour market participation rate to pick up to around 63½% by 2015 H1.</li> </ul>	<ul style="list-style-type: none"> <li>Participation rate fell to 63.2% in the three months to November.</li> </ul>
<b>Average hours</b>	<b>Higher than expected</b>
<ul style="list-style-type: none"> <li>Average hours worked to increase by around ¼% in the six months to 2015 Q2.</li> </ul>	<ul style="list-style-type: none"> <li>Average hours rose by 0.4% in the three months to November.</li> </ul>
<b>Capacity utilisation</b>	<b>Slightly higher than expected</b>
<ul style="list-style-type: none"> <li>Indicators of spare capacity within companies to show little intensification of capacity pressures.</li> </ul>	<ul style="list-style-type: none"> <li>Survey indicators suggest a slight increase in capacity pressures in Q4.</li> </ul>
<b>Productivity</b>	<b>Broadly on track</b>
<ul style="list-style-type: none"> <li>Hourly labour productivity to increase by around ½% in 2015 H1.</li> </ul>	<ul style="list-style-type: none"> <li>Hourly labour productivity growth was slightly stronger than expected in Q3. Outlook broadly unchanged.</li> </ul>

**Chart 3.1** GDP growth slowed in Q4

Bank staff projections for near-term output growth<sup>(a)</sup>



Sources: ONS and Bank calculations.

(a) Chained-volume measures. GDP is at market prices.

(b) The magenta diamond shows Bank staff's central projection for the preliminary estimate of GDP growth for Q4 at the time of the November Report. The green diamond shows the current staff projection for the preliminary estimate of GDP growth for Q1. The bands on either side of the diamonds show uncertainty around those projections based on one root mean squared error of staff forecasts for quarterly GDP growth made since 2004. As the staff projections are for the preliminary estimates of GDP, they can differ from those used to construct the GDP fans in Section 5, because those fans are based on the MPC's best collective judgement of the final estimate of GDP.

## 3.1 Recent developments in output

According to the ONS preliminary estimate, quarterly output growth was 0.5% in 2014 Q4, slightly weaker than anticipated at the time of the November *Report* (Chart 3.1). The final estimate of Q4 growth incorporated in the MPC's GDP fan chart is 0.6%. Taken together with downward revisions to previous GDP estimates up to 2014 Q2, the latest data suggest that output growth in 2014 as a whole was close to its long-run average.

Despite slowing slightly, robust service sector growth drove the expansion in output in Q4 (Chart 3.2). Construction output is estimated to have contracted, following the slowdown in housing market activity earlier in the year (Section 1), although non-housing construction also appears to have weakened. Measured construction output can be volatile, however, and early estimates are prone to revision. Intelligence from the Bank's Agents continues to suggest fairly solid growth in the sector, despite continuing skills shortages. Manufacturing output, which was flat in Q4, is likely to have been adversely affected by the slowdown in the euro area and the appreciation of sterling since early 2013. The Bank's Agents also report that a reduction in North Sea oil related investment has diminished the demand for capital equipment.

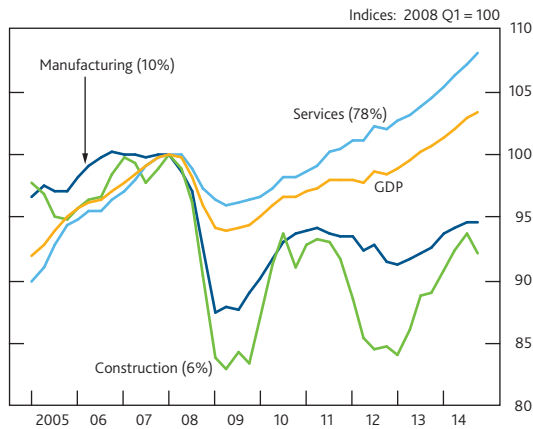
As yet, there is little sign that recent falls in oil prices have significantly affected North Sea oil extraction output. But low oil prices are likely to mean that some extraction activity has become unprofitable, which could reduce North Sea oil output over time.

The near-term outlook is for output growth to pick back up to around its long-run average rate, with growth driven by further robust expansion in the service sector. That is in line with forward-looking survey indicators, some of which had softened prior to the November *Report*, but have since firmed. Bank staff expect the ONS to publish a preliminary estimate for Q1 GDP growth of 0.6%, and anticipate a final estimate of 0.7%, which is incorporated in the MPC's GDP fan chart.



**Chart 3.2 Output growth in 2014 Q4 was driven by the service sector**

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 2011 weights in gross value added.

**Table 3.B Employment growth has slowed, employment intentions remain strong**

Employment growth, vacancies and survey indicators of employment intentions

	Averages				2014	
	2000–07 <sup>(a)</sup>	2010–12	2013	2014 H1	Q3	Q4
<b>Employment growth<sup>(b)</sup></b>	70	67	95	196	113	38
of which, employees <sup>(b)</sup>	55	33	62	102	196	80
of which, self-employed and other <sup>(b)(c)</sup>	16	35	33	94	-83	-42
<b>Vacancies<sup>(d)</sup></b>	622	469	538	637	681	700
<b>Surveys of employment intentions<sup>(e)</sup></b>						
BCC <sup>(f)</sup>	19	8	22	29	30	28
CBI <sup>(f)</sup>	5.4	-0.4	13.8	27.3	26.2	26.2
Agents <sup>(g)</sup>	0.8	0.3	0.4	1.2	1.4	1.2

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

(a) Unless otherwise stated.

(b) Changes relative to the previous quarter in thousands. Figures for employment in 2014 Q4 show data for the three months to November 2014.

(c) Other comprises unpaid family workers and those on government-supported training and employment programmes classified as being in employment.

(d) Excludes vacancies in agriculture, forestry and fishing. Average is 2001 Q2 to 2007.

(e) Measures for the Bank's Agents (manufacturing and services), the BCC (non-services and services) and the CBI (manufacturing, financial services and business/consumer/professional services) are weighted together using employee jobs shares from Workforce Jobs. The BCC data are non seasonally adjusted.

(f) Net percentage balance of companies expecting their workforce to increase over the next three months.

(g) End-quarter observation. The scores refer to companies' employment intentions over the next six months. The scores are on a scale of -5 to +5.

## 3.2 Labour market developments and slack in the economy

Labour market developments can help to shed light on the extent of slack in the economy, which is a key determinant of inflationary pressure. Since mid-2013, several indicators — including a significant fall in the unemployment rate — suggest that labour market slack has shrunk substantially. Since the November *Report*, unemployment has fallen broadly as anticipated (Table 3.A). But this masked offsetting news in employment growth and participation, which were both weaker than expected. The slowdown in employment growth appears to be consistent with the slight slowdown in output growth (Section 3.1) and a softening in labour demand growth. But the degree of slack in the labour market has continued to diminish further.

### Employment

Having expanded rapidly during the first half of 2014, employment growth slowed markedly over the second half of 2014, with growth in the three months to November materially weaker than expected at the time of the November *Report*. Although growth in the number of employees probably slowed in 2014 Q4 following strong growth in Q3, the fall in overall employment growth was largely accounted for by a reduction in self-employment, unpaid family work and those in government training schemes (Table 3.B).

Consistent with indicators of companies' employment intentions, employment growth is expected to return to an above-average rate in Q1. These indicators, together with the continuing strength of employee jobs growth and a historically high level of vacancies, suggest that any softening in labour demand growth may be short-lived (Table 3.B).

Continuing strength in labour demand is also consistent with recent developments in average hours worked, which have risen a little more than expected at the time of the November *Report*. As a result, and despite softer growth in the number of people employed than expected, growth in total hours worked remained above its average rate, albeit a little lower than anticipated in November. Increases in average hours may be a signal that employers are reacting to increased labour market tightness by increasing the hours of existing staff as it becomes more costly to recruit additional people. Indeed, several survey indicators suggest that recruitment difficulties remain at or above their pre-crisis averages (Table 3.C).

There will be a limit to how far companies can increase average hours in the face of tightening labour market conditions without putting upward pressure on wage costs. At present, desired hours reported in the Labour Force Survey

**Table 3.C Most indicators of recruitment difficulties increased during 2014 H2**

Survey indicators of recruitment difficulties<sup>(a)</sup>

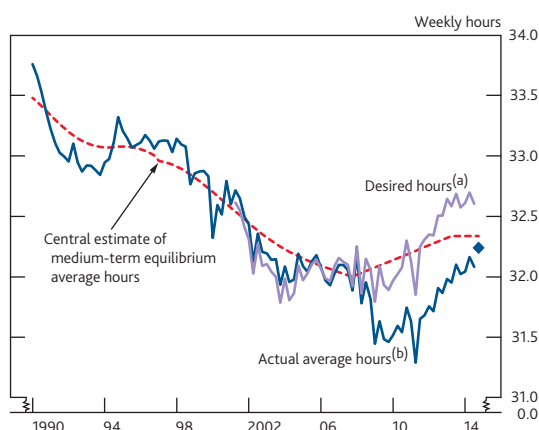
	Averages				2014	
	1998–2007 <sup>(b)</sup>	2010–12	2013	2014 H1	Q3	Q4
Agents <sup>(c)</sup>	0.5	-1.1	-0.4	0.7	1.7	1.7
BCC <sup>(d)</sup>	62	51	53	59	59	57
CBI, skilled <sup>(e)</sup>	27	16	19	24	32	30
CBI, other <sup>(e)</sup>	8	2	2	3	5	7
REC (availability) <sup>(f)</sup>	48	52	46	37	30	35

Sources: Bank of England, BCC, CBI, CBI/PwC, KPMG/REC and Labour Force Survey (LFS).

- (a) Measures for the BCC (non-services and services) and the CBI (manufacturing, financial services and business/consumer/professional services) are weighted together using employee jobs shares from Workforce Jobs.
- (b) Average for Agents' scores is 2005 Q1 to 2007. Averages for CBI data are 1998 Q4 to 2007.
- (c) End-quarter observations on a scale of -5 to +5, with positive scores indicating greater recruitment difficulties in the most recent three months compared with a year earlier.
- (d) Percentage of firms reporting recruitment difficulties over the previous three months. Non seasonally adjusted.
- (e) Balances of respondents expecting skilled or other labour to limit output over the next three months in the manufacturing sector or business over the next twelve months in the financial, business and consumer services sectors, weighted by shares in employment. Non seasonally adjusted.
- (f) Indices relating to the recruitment of permanent employees. A balance above 50 indicates rising labour market availability. Quarterly estimates are averages of the monthly observations.

**Chart 3.3 Average hours worked have risen strongly**

Average weekly hours: actual, 'desired' and Bank staff's estimate of the medium-term equilibrium



Sources: Labour Force Survey and Bank calculations.

- (a) Number of hours that the currently employed report that they would like to work, on average per week calculated from LFS microdata, which have been seasonally adjusted by Bank staff. Calculation based on Bell, D and Blanchflower, D (2013), 'How to measure underemployment?', *Peterson Institute for International Economics Working Paper No. 13-7*. Data available up to 2014 Q3.
- (b) The diamond shows Bank staff's projection for 2014 Q4, based on official data up to November 2014.

remain above actual average hours and the proportion of part-time staff who report that they would prefer a full-time job remains high. But at least some of the strength in desired hours is likely to reflect households wishing to work more to make up for the past squeeze in their real income. If so, then as real incomes rise, they may be less keen to work these extra hours. It may also be the case that some people would be satisfied by smaller increases in hours than they report. Bank staff's estimate of medium-term equilibrium average hours attempts to capture the number of hours people are likely to want to work, abstracting from short-term factors such as cyclical fluctuations in income. This estimate has risen by only around half of the increase in reported desired hours since the financial crisis (**Chart 3.3**). Since the previous *Report*, Bank staff have raised their estimate of medium-term equilibrium average hours slightly in response to the greater-than-expected increases in actual average hours.

The average hours gap — the difference between actual average hours and Bank staff's estimate of the medium-term equilibrium level — is one component of slack that the MPC considers when judging the extent of slack in the labour market. As a result of the rise in average hours in the three months to November, the average hours gap is judged to have narrowed further. And it is anticipated that average hours will continue to grow robustly in the near term, moving to a level only slightly below the estimated medium-term equilibrium in Q1. It remains possible, however, that more of the rise in reported desired hours since the recession will prove persistent. That would imply a higher medium-term equilibrium and hence more slack.

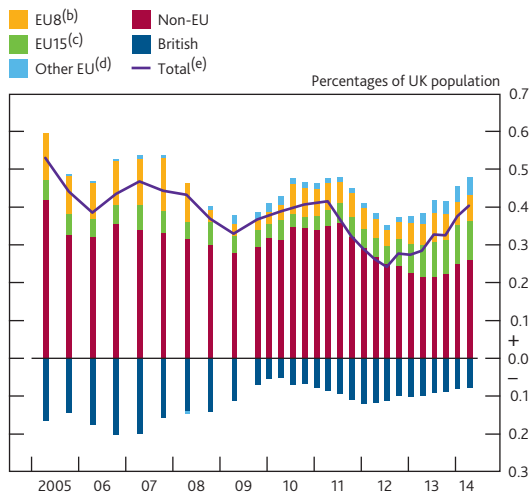
### Participation and labour supply

Changes in the number of people who want to work also affect the ease with which employers can fill vacancies, and hence the amount of slack in the labour market. As well as population growth, the size of the economically active population will be determined by the age mix and the proportion of the population who want a job, all of which can be affected by migration flows. The number of people coming to the United Kingdom has increased gradually since the start of 2013, with net migration totalling around 260,000 in the year to June 2014 — equivalent to around 0.4% of the population (**Chart 3.4**).

Labour force participation has been weaker than expected over the second half of 2014. In the three months to November, the participation rate fell to 63.2% of the population, around 0.3 percentage points weaker than expected at the time of the previous *Report*. Bank staff anticipate that a little of the recent weakness in the participation rate will unwind in the near term.<sup>(1)</sup>

(1) For a discussion of the factors affecting participation, see the box on pages 30–31 of the November 2014 *Inflation Report*; [www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14nov.pdf](http://www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14nov.pdf).

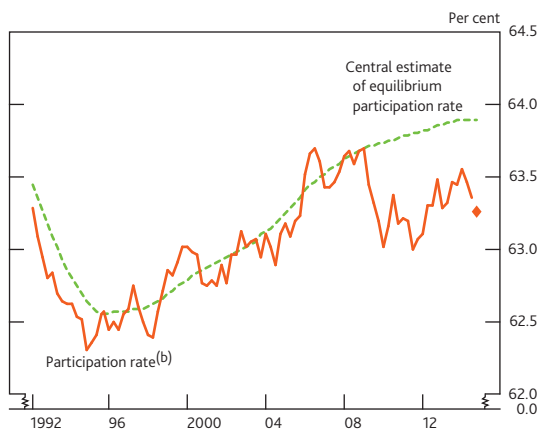
**Chart 3.4 Net migration has increased in recent years**  
Net inward migration by nationality<sup>(a)</sup>



Sources: ONS and Bank calculations.

- (a) Rolling four-quarter data, as a proportion of population. Data are half-yearly until December 2009 and quarterly thereafter, unless otherwise specified. Quarterly population figures based on ONS mid-year estimates and have been interpolated by Bank staff.  
 (b) Includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.  
 (c) Includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Luxembourg, Netherlands, Portugal, Republic of Ireland, Spain and Sweden. Excludes the United Kingdom.  
 (d) EU countries less EU15 and EU8. These are Bulgaria, Croatia, Cyprus, Malta and Romania.  
 (e) Data are half-yearly up to December 2011 and quarterly thereafter.

**Chart 3.5 Participation has fallen**  
Actual participation rate and Bank staff's estimate of the medium-term equilibrium participation rate<sup>(a)</sup>



Sources: Labour Force Survey and Bank calculations.

- (a) Percentages of 16+ population.  
 (b) The diamond shows Bank staff's projection for 2014 Q4, based on official data up to November 2014.

A fall in participation implies a greater number of people who are not actively looking for work. Some of those people may, however, move into work in the future: in recent years, almost as many inactive people as unemployed moved into employment. The MPC's measure of slack therefore includes the difference between participation and its estimated medium-term equilibrium rate. Bank staff's estimate of that equilibrium level is supported by factors such as the desire by older people to work longer than in the past and changes in the benefits system over many years, which act against the demographic drag from an ageing population. There is, however, considerable uncertainty about that medium-term equilibrium. The recent weakness in participation has led Bank staff to judge that the equilibrium level of participation is likely to be a little lower than previously estimated. But in terms of overall labour market slack, that judgement broadly offsets the upward revision to Bank staff's estimate of the medium-term equilibrium level of average hours.

The participation rate remains well below Bank staff's estimate of its medium-term equilibrium, implying a material contribution to slack (**Chart 3.5**). It is possible, however, that more of the weakness in the recent participation data reflects structural factors than implied by Bank staff's current estimates. That would mean less slack.

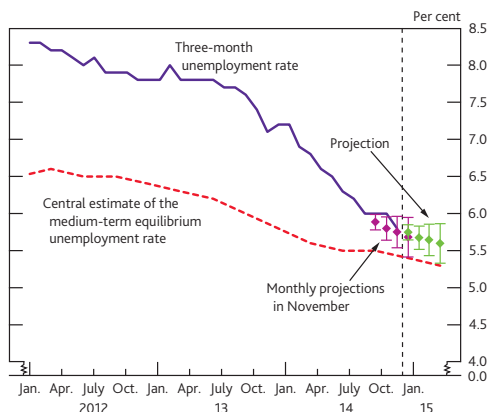
## Unemployment

Unemployment has continued to fall, broadly as anticipated at the time of the previous *Report*, with the headline three-month unemployment rate reaching 5.8% in the three months to November (**Chart 3.6**). That fall occurred despite the slowdown in employment growth, due to lower-than-expected labour market participation. Further falls in the unemployment rate are likely in the near term (**Chart 3.6**), consistent with the anticipated pickup in employment growth. Indeed, the claimant count — a timely indicator of the unemployment rate — fell to 2.6% in December. Bank staff project an unemployment rate of 5.6% by the end of 2015 Q1 (**Chart 3.6**).

Bank staff's estimate of equilibrium medium-term unemployment reflects the ability of the unemployed to put downward pressure on wages. And because people who have been out of work for longer tend to be less effective at finding jobs, this estimate is affected by the composition of unemployment, in terms of time spent out of work. Short-term unemployment has fallen sharply since mid-2013, to below its long-run average rate (**Chart 3.7**). That could be one reason why employers are reporting increased recruitment difficulties (**Table 3.C**), as people who have been out of employment for shorter periods are, on average, more likely to have the skills employers require. In contrast to short-term unemployment, the long-term unemployment rate remains well above its long-run average (**Chart 3.7**).

### Chart 3.6 Unemployment fell broadly as expected

Bank staff's near-term unemployment rate projection and estimate of medium-term equilibrium unemployment rate<sup>(a)</sup>

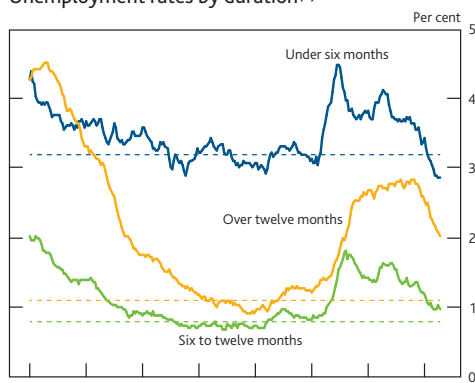


Sources: Labour Force Survey and Bank calculations.

(a) The magenta diamonds show Bank staff's central projections for the headline unemployment rate for September, October, November and December 2014, at the time of the November Report. The green diamonds show the current staff projections for the headline unemployment rate for December 2014, January, February and March 2015. The bands on either side of the diamonds show uncertainty around those projections based on one root mean squared error of past staff forecasts.

### Chart 3.7 Long-term unemployment remains well above its pre-crisis average

Unemployment rates by duration<sup>(a)</sup>

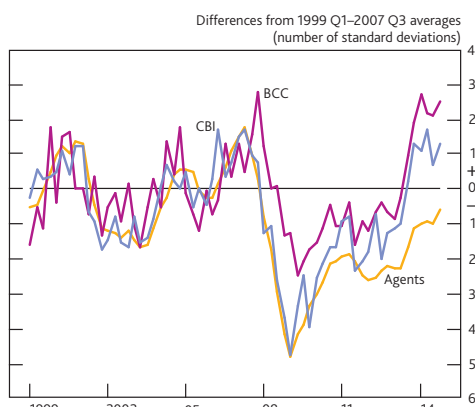


Sources: Labour Force Survey and Bank calculations.

(a) The number of people unemployed in each duration category, divided by the economically active population. Dashed lines are averages from 2002 to 2007.

### Chart 3.8 Companies' capacity utilisation picked up slightly in Q4

Survey indicators of capacity utilisation<sup>(a)</sup>



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

(a) 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/professional services and distributive trades) using nominal shares in value added. The surveys are adjusted to have a mean of zero and a variance of one over 1999 Q1 to 2007 Q3. The BCC data are non-seasonally adjusted.

Bank staff's estimate of medium-term equilibrium unemployment remains above the estimated natural (or long-term equilibrium) rate, which is determined by structural features of the labour market such as out-of-work benefits. Nevertheless, the recent decline in long-term unemployment has led to falls in the estimate of medium-term equilibrium unemployment, which stood at just under 5½% in 2014 Q4. This estimate is likely to continue to fall as long-term unemployment declines further.

The difference between the unemployment rate and its medium-term equilibrium level — the unemployment gap — is another component of the MPC's measure of labour market slack. The modest fall in unemployment since the November Report, combined with a small decline in the estimated medium-term equilibrium rate, mean that the unemployment gap is likely to have narrowed only marginally in 2014 Q4.

### Spare capacity within companies

On average, survey indicators of businesses' capacity utilisation are close to, but marginally above, normal levels. These indicators picked up slightly in Q4, having dipped in Q3 (Chart 3.8). There continues to be considerable uncertainty about the extent of spare capacity within companies, however, evident from the range of signals across the different surveys. This uncertainty makes a precise mapping from the survey indicators to estimates of capacity utilisation difficult.

The Bank's Agents continue to report that capacity constraints are most prevalent in the construction sector, although there are also some signs of an increase in capacity constraints in the business services sector. In contrast, capacity constraints in the manufacturing sector have eased slightly since the November Report, although they remain around normal levels.

### Overall slack in the economy

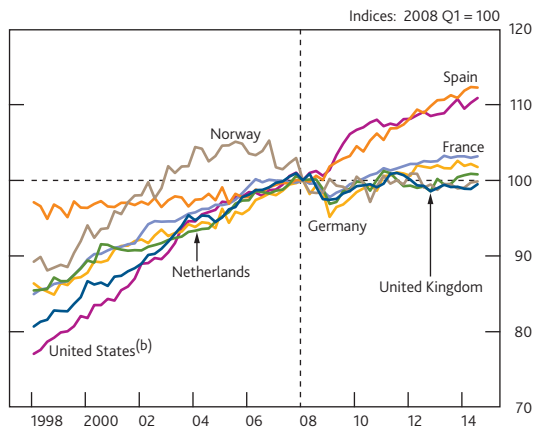
Judging the precise degree of slack in the economy is difficult, and the MPC will continue to monitor evidence on the likely medium-term equilibrium levels of labour market variables such as participation and average hours. Based on developments in companies' capacity utilisation together with those in the labour market, the MPC's best collective judgement is that slack is currently broadly in the region of ½% of GDP, largely as expected in November. There is considerable uncertainty around both the current degree of slack and its likely evolution, and there is a wide range of views on the Committee.

## 3.3 Productivity

Labour productivity has barely grown since the start of 2010, contrasting with the long-run norm of annual growth around 2% prior to the crisis. But although the United Kingdom's recent productivity performance has been weak relative to its

**Chart 3.9 Post-crisis UK productivity experience not unique internationally**

Hourly labour productivity in selected countries<sup>(a)</sup>

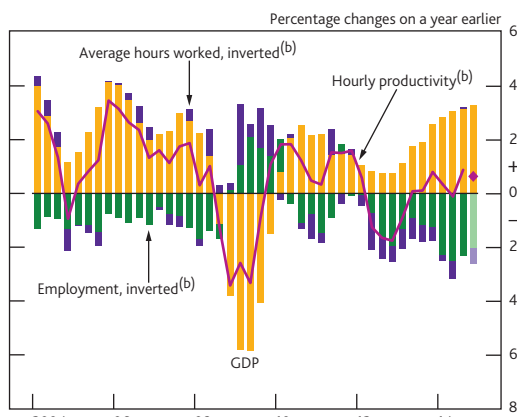


Sources: Eurostat, ONS, Statistics Norway, Thomson Reuters Datastream and Bank calculations.

- (a) Whole-economy unless otherwise stated.  
(b) US non-farm output per hour.

**Chart 3.10 Moderate productivity growth likely in 2014 H2**

Decomposition of hourly labour productivity<sup>(a)</sup>



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

- (a) Whole-economy output per hour. GDP is based on the MPC's best collective judgement of the final estimate of GDP. Contributions may not sum to total due to seasonal adjustment.  
(b) The final observations are based on Bank staff's projections for 2014 Q4. The error bands around those projections are wide.

peers, it is not the only economy to have observed a marked break in productivity growth around 2008. The fact that many other economies have observed a similar stagnation suggests that the crisis itself, and the depth of the associated recession, have had a lasting impact (**Chart 3.9**). Previous analysis by Bank staff has identified several factors, such as the misallocation of capital, that are likely to have contributed to the weakness of productivity growth in the United Kingdom. The precise importance of different possible explanations, however, remains uncertain.<sup>(1)</sup>

Output per hour worked picked up strongly in 2014 Q3, reflecting weaker-than-anticipated total hours. Nevertheless, revisions to ONS output estimates mean that the level of productivity was lower than expected. And four-quarter hourly productivity growth remains well below its historical average. Based on the final estimate for Q3 GDP growth incorporated in the MPC's GDP fan chart, hourly labour productivity rose by 0.9% in the four quarters to Q3 (**Chart 3.10**). Data for Q4 suggest that four-quarter hourly labour productivity growth is likely to remain modestly positive.

The MPC continues to expect productivity growth to pick up gradually over the forecast period as the effects of the financial crisis wane further (Section 5). Past improvements in credit conditions are expected to continue to boost investment and improve the allocation of resources across companies. Increases in demand should allow companies to use their staff more productively, with the incentive to do so increasing as the labour market tightens.

(1) For previous Bank analysis see Barnett, A, Batten, S, Chiu, A, Franklin, J and Sebasti -Barriel, M (2014), 'The UK productivity puzzle', *Bank of England Quarterly Bulletin*, Vol. 54, No. 2, pages 114–28; [www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q201.pdf](http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q201.pdf).



# 4 Costs and prices

CPI inflation was 0.5% in December and is likely to fall further in the near term. To a large extent, the undershoot in inflation, relative to target, can be explained by lower energy, food and other goods prices. In particular, the sterling oil price has fallen by more than 50% since mid-2014. But it also reflects weak growth in domestic costs. Recently, earnings and unit labour cost growth have picked up. Indicators of inflation expectations have fallen. But, on balance, inflation expectations remain consistent with the MPC's 2% target.

**Table 4.A** Monitoring the MPC's key judgements

Developments anticipated in November	Developments since November
<b>Inflation expectations</b>	<b>Broadly on track</b>
<ul style="list-style-type: none"> <li>Medium-term inflation expectations consistent with the 2% target.</li> </ul>	<ul style="list-style-type: none"> <li>Measures of medium-term expectations have fallen but, on balance, still appear to be consistent with the 2% target.</li> </ul>
<b>Earnings growth</b>	<b>Stronger than expected</b>
<ul style="list-style-type: none"> <li>Four-quarter AWE growth of around 2% in 2015 Q2.</li> </ul>	<ul style="list-style-type: none"> <li>Whole-economy wage growth picked up to 1.7% in the three months to November.</li> </ul>
<b>Unit labour costs</b>	<b>Stronger than expected</b>
<ul style="list-style-type: none"> <li>Four-quarter whole-economy unit labour cost growth to rise to around ½% in 2015 H1.</li> </ul>	<ul style="list-style-type: none"> <li>Unit labour costs grew by ½% in the four quarters to 2014 Q3.</li> </ul>
<b>The exchange rate, utility bills and commodities</b>	<b>Lower than expected</b>
<ul style="list-style-type: none"> <li>Sterling ERI, domestic energy bills and commodity prices evolve in line with conditioning assumptions.</li> </ul>	<ul style="list-style-type: none"> <li>Oil and gas futures lower. Domestic energy bills to fall over 2015 H1. Sterling ERI rose by around 1%.</li> </ul>
<b>Import prices</b>	<b>Broadly on track</b>
<ul style="list-style-type: none"> <li>Annual rate of decline of import prices of around 2½% by 2015 H1.</li> </ul>	<ul style="list-style-type: none"> <li>In part due to the fall in oil prices, import prices estimated to have fallen by just over 4¼% in the four quarters to 2014 Q4.</li> </ul>

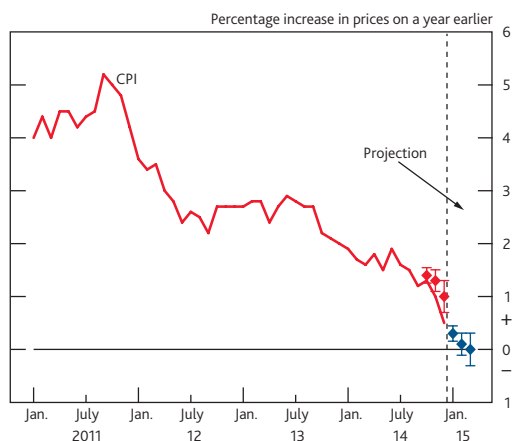
CPI inflation was 0.5% in December, more than 1 percentage point away from the MPC's 2% target. That triggered an open letter from the Governor to the Chancellor of the Exchequer, as required by the monetary policy remit.<sup>(1)</sup> Falls in energy and food prices, as well as the impact of the appreciation of sterling on other import prices, have weighed on inflation. Domestic price pressures have also remained muted.

CPI inflation is likely to fall further in the near term (**Chart 4.1**) and could briefly turn negative as energy and food price inflation continues to weigh on the headline rate. A temporary period of falling prices driven by large adjustments in a few specific components of the CPI would not, however, be the same as persistent and generalised deflation.<sup>(2)</sup>

The speed at which CPI inflation returns to the MPC's 2% target will depend on a number of factors: developments in global costs and prices and those in the oil market in particular (Section 4.2), domestic cost pressures (Section 4.3), and inflation expectations (Section 4.4).

**Chart 4.1** CPI inflation expected to fall further in Q1

Bank staff projection for near-term CPI inflation<sup>(a)</sup>



(a) The red diamonds show Bank staff's central projection for CPI inflation in October, November and December 2014 at the time of the November Report. The blue diamonds show the staff projection for January, February and March 2015. The bands on either side of the diamonds show uncertainty around these projections based on one root mean squared error of projections for CPI inflation one, two and three months ahead made since 2004.

## 4.1 Consumer prices

### Recent developments in CPI inflation

CPI inflation fell to 0.5% in December (**Chart 4.1**), its lowest rate since 2000 and 1.5 percentage points below the inflation target. The open letter from the Governor to the Chancellor sets out the factors weighing on the current CPI inflation rate. These are explained below.

The MPC judges that roughly two thirds of the weakness in CPI inflation relative to the target, so around 1 percentage point, can be attributed to unusually low

(1) The letter is available on the Bank's website at [www.bankofengland.co.uk/monetarypolicy/Documents/pdf/cpiletter120215.pdf](http://www.bankofengland.co.uk/monetarypolicy/Documents/pdf/cpiletter120215.pdf).

(2) For a discussion of the economic effects of falls in prices, see the box on page 33 of the February 2009 Report; [www.bankofengland.co.uk/publications/Documents/inflationreport/ir09feb.pdf](http://www.bankofengland.co.uk/publications/Documents/inflationreport/ir09feb.pdf).

**Table 4.B Energy, food and other goods inflation explain around two thirds of the inflation undershoot**

Contributions to December 2014 CPI inflation relative to the pre-crisis average

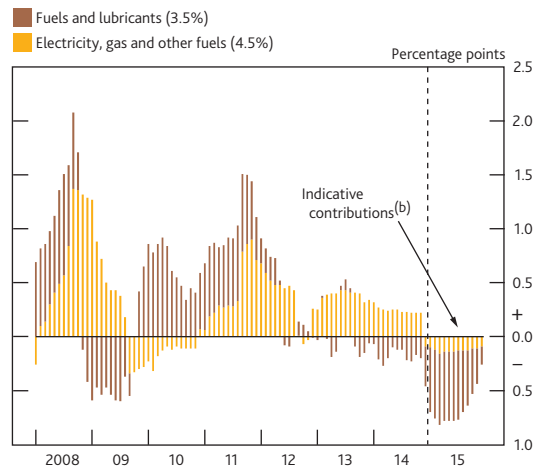
Percentage points	1997–2007 average	December 2014	Difference
Energy, food and other goods <sup>(a)</sup>	0.4	-0.5	-0.9
Services	1.6	1.1	-0.5
<b>Total<sup>(a)(b)</sup></b>	<b>2.0</b>	<b>0.5</b>	<b>-1.4</b>

Sources: ONS and Bank calculations.

(a) Adjusted for the 0.37 percentage point downward bias from clothing that existed until 2010.  
 (b) Totals may not sum exactly due to rounding.

**Chart 4.2 Energy prices are likely to continue to weigh on CPI inflation**

Direct contribution of energy prices to CPI inflation<sup>(a)</sup>



Sources: Bloomberg, Department of Energy and Climate Change, ONS and Bank calculations.

(a) Contributions to annual CPI inflation. Data are non seasonally adjusted.  
 (b) Bank staff estimates. Electricity, gas and other fuels estimates are conditioned on the assumption that utilities companies reduce gas and electricity prices by an average of 4¼% by the end of May 2015. Fuels and lubricants estimates use Department of Energy and Climate Change petrol price data for January 2015 and are then based on the February 2015 sterling oil futures curve shown in Chart 4.4. The CPI weights used to produce these contributions are 2014 weights, shown in parentheses.

contributions from movements in energy, food and other goods prices (Table 4.B). Around one third of the deviation of inflation from target, around ½ a percentage point, is judged to reflect more generalised subdued inflationary pressures resulting from weak growth in domestic costs.

The most important single factor behind below-target inflation over the past year is energy prices. This includes the effects of the sharp fall in oil prices since the summer (Section 4.2), which has pushed down petrol prices (Chart 4.2). It also reflects a lower contribution from utility prices: utilities prices were broadly unchanged over 2014, in contrast to rises in previous years.

Falls in food prices also contributed to the weakness in CPI inflation in December: food price inflation was at its lowest rate since 2002. That reflects a combination of factors. Bumper harvests in 2014 pushed down UK farm prices, while global agricultural prices also fell (Section 4.2). Intense competition within the supermarket sector has also weighed on food price inflation.

Adding to these developments is the wider effect of the appreciation of sterling since March 2013. The increase in the value of sterling has pushed down import prices, including those for non-energy imports (Section 4.2). Lower import prices are likely to have a larger impact on the prices of goods than on the prices of services, given that goods typically have a larger import content. Within the CPI basket, goods price inflation excluding food and energy fell to 0.3% in December.

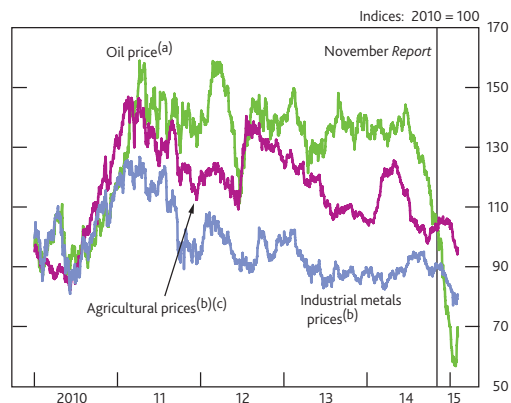
In addition to the drag from external factors on inflation, growth in domestic costs, particularly wages, has also been weak (Section 4.3). That weakness reflects the result of a long period after the crisis during which unemployment has been high and there has been significant slack in the economy. This effect on inflation is evident in the contribution of services prices to annual CPI inflation, which was ½ a percentage point below its historical average in December (Table 4.B).

### The near-term outlook for CPI inflation

CPI inflation is expected to fall further in the near term (Chart 4.1). Past falls in oil prices are likely to be passed through to further falls in petrol prices (Chart 4.2). Gas futures prices have also declined (Section 4.2), leading utilities companies to announce cuts to their standard gas prices: the average 4¼% cut to household gas prices is expected to reduce CPI inflation by an additional 0.1 percentage points by the end of May (Chart 4.2). Competition between supermarkets is likely to exert further downward pressure on food prices. The drag on CPI inflation from the appreciation of sterling is also likely to increase a little in the near term as more of the fall in import prices is passed through to consumer prices. Even if there were no further falls in energy and food prices, these components would continue to drag on the annual CPI inflation rate before starting to drop out of the

**Chart 4.3 Global commodity prices, particularly oil prices, have fallen**

US dollar oil and commodity prices

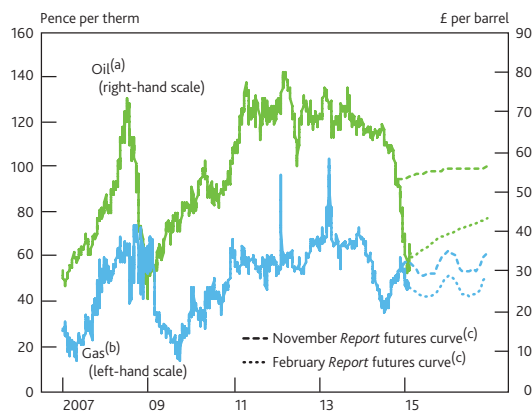


Sources: Bloomberg, S&P indices and Thomson Reuters Datastream.

- (a) US dollar Brent forward prices for delivery in 10–21 days' time.
- (b) Calculated using S&P US dollar commodity price indices.
- (c) Total agriculture and livestock S&P commodity index.

**Chart 4.4 Wholesale gas prices have also fallen, but by much less than oil prices**

Sterling oil and wholesale gas prices



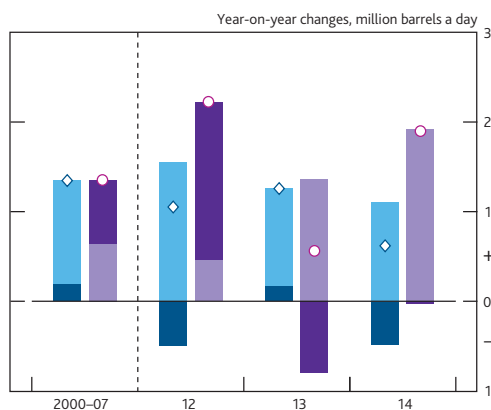
Sources: Bank of England, Bloomberg, Thomson Reuters Datastream and Bank calculations.

- (a) Brent forward prices for delivery in 10–21 days' time converted into sterling.
- (b) One-day forward price of UK natural gas.
- (c) Futures prices at the time of the November Report are averages during the fifteen working days to 5 November 2014. Futures prices at the time of the February Report are averages during the fifteen working days to 4 February 2015.

**Chart 4.5 Oil supply growth increased in 2014**

Growth in oil supply and demand

- OECD demand
- OPEC supply
- Non-OECD demand
- Non-OPEC supply
- ◇ Total demand
- Total supply



Sources: International Energy Agency Oil Market Report© OECD/IEA 2015 and Bank calculations.

twelve-month comparison in the second half of 2015; Chart 4.2 shows this for energy prices.

Beyond the near term, as the impact on CPI inflation from the falls in commodity prices diminishes, domestic price pressures are expected to normalise so that inflation returns to the MPC's 2% target (Section 5). Indeed, wage growth began to pick up in the second half of 2014 (Section 4.3).

## 4.2 Developments in global costs and prices

As described above, the falls in global commodity prices (Chart 4.3) and the sterling exchange rate are currently pulling down CPI inflation, with some further downward pressure still to come. The extent to which CPI inflation remains weak will, in part, depend on the evolution of global prices, as well as the sterling exchange rate.

### Global commodity prices

The main influence of oil prices on UK CPI inflation is through their impact on petrol prices. The Brent crude spot oil price was around US\$48 per barrel in the fifteen working days to 4 February, slightly higher than its trough of around US\$45 in late January. In sterling terms, this translates into a fall of more than 50% since mid-2014 (Chart 4.4). Further movements in oil prices would have implications for the inflation outlook, as discussed in the box on pages 32–33.

The outlook for oil prices will depend, in part, on why they have fallen. Oil prices reflect current and expected oil supply and demand. The fall in oil prices since mid-2014 is likely in large part to reflect an increase in oil supply growth (Chart 4.5). Production has been unexpectedly high in Libya and the United States since mid-2014, for example, and supply increases have not been offset by cuts by other producers, such as OPEC members. The decision by OPEC members not to cut production has, according to market contacts, led to a reassessment by market participants of the outlook for OPEC supply. But weakening demand for oil (Chart 4.5), reflecting subdued global demand growth (Section 2), will also have played a role. The International Energy Agency's estimate for global oil demand in 2014 Q4, for example, is now lower than projected in June, when prices began to fall; forecasts for 2015 have also been revised down.

The futures curve points to a gradual rise in oil prices over the next few years (Chart 4.4). Prices could rise more rapidly than implied by the futures curve if, for example, the reduced profitability of high-cost producers, such as those of US shale oil, leads to a greater slowing in oil supply growth than market participants currently expect. But there are also downside risks to oil prices. Oil demand growth could slow further, if downside risks to global growth materialise: in the absence of any changes to supply growth, this would imply further downward pressure on oil prices as inventories build up.



Wholesale gas prices also influence inflation, predominantly through their impact on households' and businesses' utility bills. Gas futures prices — which make up around half of utilities companies' costs — have fallen (**Chart 4.4**). Since the November *Report*, the six largest utility companies have announced cuts of between 1¼% and 5% to their standard gas prices, which will come into CPI between January and May.

Having picked up at the end of 2014, agricultural prices have since fallen back and are now below their 2014 lows. Past falls in global agricultural commodities prices have weighed on consumer food prices (Section 4.1), which are likely to fall a little further in the near term.

### Non-energy import prices

Import prices have a direct effect on UK consumer prices through their impact on the cost of finished goods bought by households, as well as an indirect effect through their impact on the cost of inputs for businesses.

Import prices (excluding fuel) fell by 3% in the year to 2014 Q3 (**Chart 4.6**). The fall, which was smaller than expected in November in part due to revisions to past data, was primarily driven by the appreciation of sterling. But tradeables inflation in foreign currency terms was also muted: annual world export price inflation, weighted according to countries' shares in UK imports, was close to zero in Q3 (**Chart 4.6**). The prices of internationally traded goods are likely to have been affected by weaker global activity (Section 2), as well as by falls in commodity prices, which reduce production and transport costs.

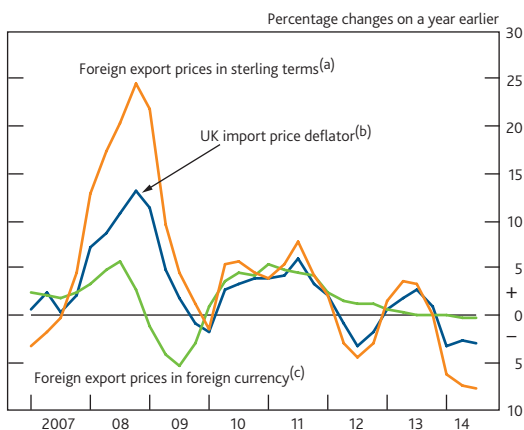
Bank staff estimate that the recent falls in import prices are likely to be more than offsetting the upward pressure from past rises such that, currently, non-energy import prices are weighing slightly on CPI inflation. There is more uncertainty than three months ago about the extent to which the past rise in sterling is dampening import prices and hence CPI inflation: the latest data show a smaller fall in import prices than was expected following the rise in the exchange rate. In the MPC's central projection, the appreciation of sterling since early 2013 is assumed to reduce the level of UK import prices by a little less than projected in November. But there are risks around that assumption in both directions (Section 5).

## 4.3 Domestic influences on inflation

The fall in CPI inflation to 0.5% cannot be fully accounted for by developments in energy, food and other global prices (Section 4.1). This suggests that domestic influences, above all companies' labour cost growth and pricing decisions, are also weighing on inflation.

**Chart 4.6 Sterling's appreciation has weighed on UK import prices**

UK import and foreign export prices excluding fuel



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

- (a) Domestic currency non-oil export prices of goods and services of 49 countries weighted according to their shares in UK imports, divided by the sterling effective exchange rate. The sample does not include any major oil exporters. In 2014 Q3, export prices for Bulgaria, Croatia, Czech Republic, Denmark, Hungary, Iceland, Lithuania, Pakistan, Philippines, Poland, Sweden, Switzerland and Turkey are assumed to grow at the same rate as export prices in the rest of the world excluding the euro area and the United States.
- (b) Goods and services deflator excluding fuels and the impact of MTIC fraud.
- (c) Domestic currency non-oil export prices as defined in footnote (a).

## The impact of lower oil prices on the UK economy

Since mid-2014, the sterling price of oil has fallen by more than half, taking oil prices back to around the level last observed in 2009. Oil supply news is likely to have been the biggest driver of that drop in prices (Section 4), although a weakening outlook for world demand is also likely to have played a material role (for a fuller discussion of the drivers, see page 30). Looked at in isolation, this drop in oil prices is likely to dampen global inflation materially and to boost activity (Section 2), with this boost to growth offsetting at least some of the recent weakening in the world demand outlook. This box illustrates how an oil price shock feeds through to UK GDP growth and inflation, illustrating this with the use of a model-based simulation of the impact of a further 10% fall in oil prices.

### A supply chain framework: the transmission of lower oil prices through to inflation and output

#### Direct effects on inflation

A fall in oil prices feeds directly into CPI through reductions in the prices of highly oil-intensive items. These direct effects tend to come through fairly quickly, dropping out of the annual inflation rate twelve months after entering the CPI (Section 4). The most significant direct effect is on petrol prices, which have a weight of 3.5% in the CPI basket. But because petrol duties are fixed in pence and account for a large portion of retail petrol prices, the magnitude of this direct effect depends in part on the starting level of oil prices: the lower the oil price, the smaller the impact of moves in oil prices on inflation. To the extent that changes in oil prices are accompanied by changes in other wholesale energy prices such as natural gas, falls in oil prices could, in turn, also influence household energy bills, which account for another 4.5% of the CPI basket (Section 4).

#### Indirect effects and other domestic effects

Oil is also an input in the production of other finished goods and services — in aggregate, the share of oil and other energy-related commodities in UK production costs is around 2.5%. UK producers will therefore benefit from lower fuel and energy costs, as well as lower costs for other imported inputs that are influenced by oil prices. This indirect effect will be larger the easier it is for companies to switch to more oil-intensive inputs to take advantage of the fall in oil prices relative to other input prices, although the scope to do so is likely to be limited in the short term.

A fall in oil prices should boost real incomes in aggregate, and hence domestic demand. The main channel through which this happens is household consumption, as lower oil prices enable greater spending on non-oil items, raising the real value

of wages (Section 2). This increase in demand may allow nominal wages and profit margins to rise outside the oil sector and so put upward pressure on prices over the medium term. The probable impact on business investment is less clear: while increased household demand and a reduction in energy costs might encourage investment in some industries, investment in the North Sea oil sector is likely to be lower (Section 2).

As well as providing a fillip to domestic demand, a fall in oil prices may also boost potential supply, for example by helping to raise productivity growth. But overall, the balance of domestic demand and supply effects following a drop in oil prices is thought likely to put some upward pressure on inflation over the medium term.

The likely net positive impact of the domestic demand and supply effects on inflation will probably therefore work against the impact of the indirect effects, which will weigh on inflation. In the medium term, the overall impact of these opposing inflationary pressures will, in part, depend on the response of monetary policy to falling oil prices. That said, any monetary policy response may be limited, particularly if the direct effects on CPI are likely to be relatively short-lived and inflation expectations are expected to remain well anchored.

#### International demand and other potential effects

Lower oil prices are likely to generate higher aggregate world demand as oil consumers benefiting from lower prices are likely to increase their spending by more than the owners of oil production cut theirs. Bank staff estimate that the fall in oil prices since mid-2014 could boost the level of UK-weighted world GDP by around 0.8%, offsetting some of the negative news in world demand since the summer, and helping to support UK exports.

Uncertainty around the likely global impact is, however, large. One downside risk is that growth is held back if lower oil prices contribute to greater financial market turbulence. But on the upside, the spending of those gaining from lower oil prices may respond by more than anticipated. The precise impact on the United Kingdom will also depend on how foreign monetary policy responds to lower oil prices, and related to that, how the exchange rate is affected. Exchange rate moves are difficult to predict, and will depend on several factors including inflation outcomes internationally.

#### An illustration of the impact of a 10% fall in oil prices

One way to illustrate the impact on inflation and output of a fall in oil prices is to simulate what a given shock to oil prices — in this case a persistent 10% fall — might imply using a model that incorporates an oil sector along with some of the

key mechanisms through which oil shocks are transmitted, as described above.<sup>(1)</sup> A rise in oil prices would work through the same mechanisms, but have opposite effects.

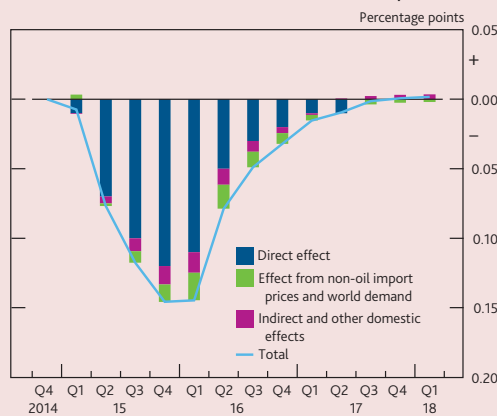
As with any model-based simulation, however, there is a great deal of simplification relative to the real world. In the scenario presented here, assumptions include:

- inflation expectations remain well anchored;
- monetary policy responds to the net impact of indirect and relative price effects on inflation, but not to the direct effects of the shock; and
- the fall in oil prices wholly reflects positive oil supply news, rather than negative demand news.

While there is uncertainty about the precise impact of such a scenario, the model simulation suggests that a 10% fall in oil prices would, at its peak, take around 0.15 percentage points off annual inflation after one year. The impact then falls fairly rapidly during the second year of the simulation, ending close to zero (Chart A). The majority of that impact comes about via the direct effect — broadly through lower petrol prices — with the estimated net impact of indirect and other domestic effects small and relatively short-lived. The most long-lived impact comes through lower non-oil import prices, although this is also small. In the long run, the effect on inflation is broadly neutral.

**Chart A The impact of a fall in oil prices on inflation would be short-lived**

Contributions to inflation of a 10% fall in oil prices

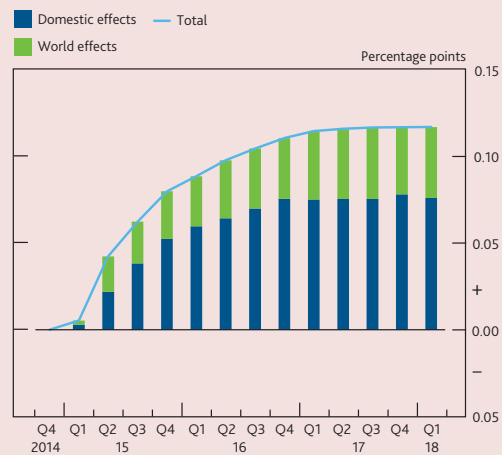


In this simulation, the level of GDP is estimated to be just over 0.1% higher after two years (Chart B). The boost to domestic demand comes mainly as a result of higher real wages. The boost to GDP from higher world demand, which increases UK exports, is slightly smaller than the domestic effect.

Nominal interest rates, which in this simulation are set according to a policy rule estimated on historical data, are broadly unchanged. That reflects the relatively small net estimated impact of the indirect and other domestic effects, as well as the assumption that inflation expectations remain well anchored. However, were there a material risk to inflation

**Chart B Demand is boosted by both domestic and international factors**

Contributions to GDP of a 10% fall in oil prices



expectations, policy may need to loosen in order to bring inflation back to the target. Similarly, policymakers may respond if spillovers from any adverse impact on financial markets weakened demand prospects.

A fall in oil prices stemming from a weakening in world demand for oil, rather than positive news about supply, would be expected to have different implications — in particular, the overall impact on the United Kingdom would reflect both a weaker world outlook and also the lower oil price. In this case, the boost to demand will come mainly via domestic channels, and hence the overall boost to UK GDP is likely to be less marked.

### The impact of the fall in oil prices since mid-2014

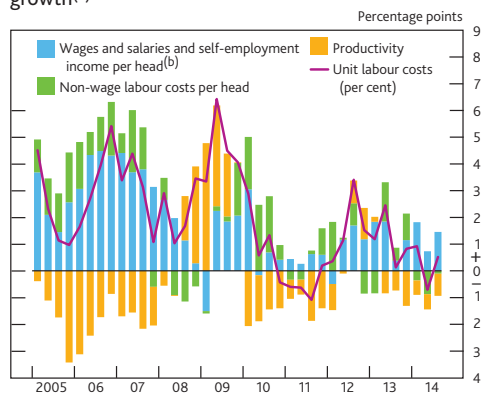
Since mid-2014, spot oil prices have fallen by over 50% in sterling terms, and by around 35% on average across the futures curve over the MPC's three-year forecast period. Based on falls in energy prices since June 2014, the direct impact of these falls is likely to pull down annual inflation by around 0.8 percentage points in 2015 Q2. This is broadly in line with the simulations presented above.

It is more difficult to estimate precisely what impact the fall in oil prices is likely to have on output, not least because the transmission of the shock is much less direct than for CPI. That said, Bank staff's central estimate, conditioned on the path for Bank Rate implied by the market curve, is that the fall in oil prices since mid-2014 will, all else equal, boost the level of UK GDP by around ½% over the MPC's three-year forecast period (Section 5).

(1) This simulation has been produced using a suite model based on the Bank's central forecasting model, COMPASS, adapted to incorporate explicitly the channels through which changes in oil prices affect the economy. More details of this suite model can be found in section 5.2.1 of Burgess *et al* (2013), 'The Bank of England's forecasting platform: COMPASS, MAPS, EASE and the suite of models', *Bank of England Working Paper No. 471*; [www.bankofengland.co.uk/research/Documents/workingpapers/2013/wp471.pdf](http://www.bankofengland.co.uk/research/Documents/workingpapers/2013/wp471.pdf). The impact on world activity is based on evidence from a range of empirical models and is broadly consistent with estimates from the International Monetary Fund.

**Chart 4.7 Unit labour cost growth picked up slightly in 2014 Q3**

Decomposition of four-quarter whole-economy unit labour cost growth<sup>(a)</sup>



Sources: ONS and Bank calculations.

- (a) Unit labour costs are calculated as labour costs divided by GDP. GDP is based on the MPC's best collective judgement of the final estimate of GDP.  
 (b) Self-employment income is calculated from mixed income, assuming that the share of employment income in that is the same as the share of employee compensation in nominal GDP less mixed income.

**Table 4.C Wage growth has picked up**

Whole-economy earnings

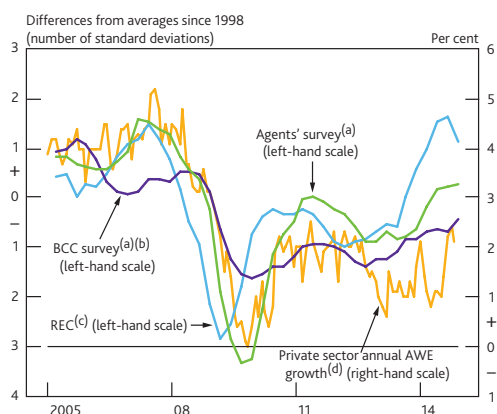
	Averages				2014			
	2001–07	2008 Q3–2010 Q2	2010 Q3–2012	2013	Q1	Q2	Q3	Q4
<b>Official estimates (percentage changes on a year earlier)</b>								
(1) Total AWE <sup>(a)</sup>	4.3	1.4	1.9	1.2	1.9	-0.1	1.0	1.7
(2) AWE regular pay <sup>(a)(b)</sup>	4.0	2.1	1.9	0.9	1.3	0.7	1.2	1.9
(1)–(2) Bonus contribution <sup>(a)(c)</sup>	0.3	-0.7	0.0	0.3	0.6	-0.8	-0.2	-0.2
Pay settlements <sup>(d)</sup>	3.2	2.5	1.8	1.8	1.9	1.8	1.8	1.8
Memo: Three-month on three-month annualised AWE regular pay <sup>(a)</sup>								
	4.0	1.7	1.8	0.9	1.2	0.3	3.0	3.0

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

- (a) Figures for 2014 Q4 are estimates based on data for October and November and Bank staff's projections for December.  
 (b) Whole-economy total pay excluding bonuses and arrears of pay.  
 (c) Percentage points. The bonus contribution does not always equal the difference between total AWE growth and AWE regular pay growth due to rounding.  
 (d) Average over the past twelve months, based on monthly data.

**Chart 4.8 Survey indicators point to further pickup in pay growth**

Private sector earnings and indicators of pay growth



Sources: Bank of England, BCC, Incomes Data Services, KPMG/REC/Markit, the Labour Research Department, ONS and XpertHR.

- (a) The Bank's Agents' scores and the BCC survey are produced by weighting together indicators for the manufacturing and service sector according to their employment shares. The Bank's Agents' scores are a quarterly average of monthly data, and are available from June 1998.  
 (b) Four-quarter moving average measure. Non seasonally adjusted.  
 (c) The REC measure is produced by weighting together survey indices for the pay of permanent and temporary placements using shares in employment; quarterly averages.  
 (d) Excludes bonuses and arrears of pay.

## Unit labour costs

Growth in unit labour costs — a key determinant of the cost of producing goods and services — remains subdued, but appears to have picked up in 2014 Q3. Based on Bank staff's preferred measure, unit labour cost growth was 0.5% in the four quarters to 2014 Q3, compared to -0.7% in Q2 (Chart 4.7).

The main factor driving the pickup in unit labour cost growth was an increase in earnings (Chart 4.7): wages and salaries and self-employment income grew by 1.8% in the four quarters to 2014 Q3. In addition, the drag from non-wage costs diminished.

The near-term outlook for unit labour cost growth is slightly stronger than anticipated at the time of the November Report. Timelier indicators, such as the average weekly earnings (AWE) measure, point to a further pickup in annual earnings growth in 2014 Q4 (Table 4.C). In annualised terms, whole-economy regular pay rose by 3.9% in the three months to November compared to the previous three months. Some of this strength is likely to unwind a little in December, with annualised quarterly pay growth projected to be 3.0% in Q4. And four-quarter regular pay growth remains below 2%. A recent survey of pay growth conducted by the Bank's Agents suggests that wage settlements — one source of earnings growth — will be very slightly higher in 2015 than in 2014.

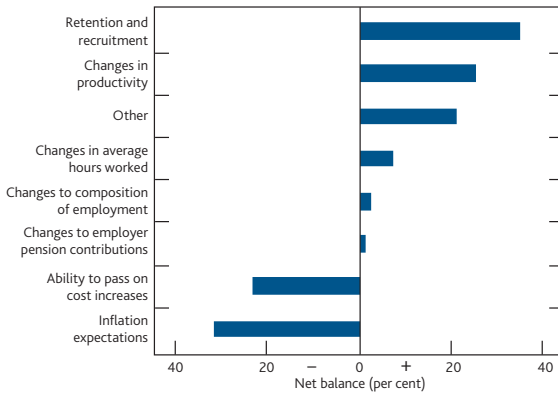
One factor that is likely to have pushed up pay and unit labour cost growth is the continued narrowing in labour market slack. Labour market slack has probably narrowed substantially since mid-2013 (Section 3). Should labour market slack continue to shrink as expected this would be likely to put further upward pressure on pay and unit labour cost growth in the near term.

Growth in average wages may also be influenced by changes in the composition of the workforce. Strong rates of employment growth between mid-2013 and mid-2014 were characterised by disproportionately large increases in jobs, such as lower-skilled ones, that attract a below-average wage. This pushed down measured average wages. In 2014 Q3, however, employment growth was accounted for by a rise in high-skilled employment, which may reduce that downward pressure on wages a little. Whether or not changes in the composition of the workforce affect unit labour cost growth will depend on the extent to which the differences in wages reflect differences in productivity.

Another factor affecting average wage growth is turnover in the labour market. There is evidence from the REC survey, for example, of strong growth in starting salaries (Chart 4.8), but turnover in the labour market has, until recently, been fairly low and hence increases in new recruits' pay have so far had little impact on average wages. Turnover may pick up further as confidence among employees about their job prospects continues to strengthen. That would increase the extent to

### Chart 4.9 Staff retention and recruitment likely to be pushing up labour costs; inflation expectations pushing down

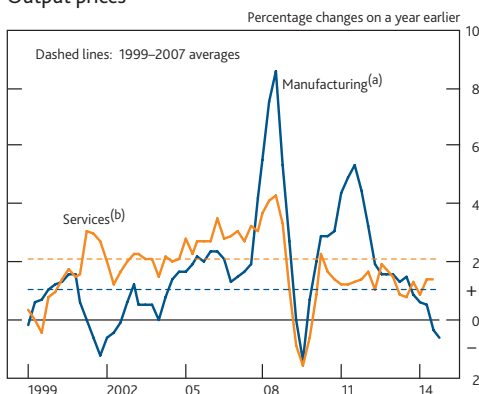
Agents' survey: factors affecting growth in total labour costs per employee<sup>(a)</sup>



(a) The survey asked respondents how they expected the factors listed to affect growth in total labour costs per employee in 2015 compared with growth in 2014. Based on 436 responses to a survey carried out by the Bank's Agents between December 2014 and January 2015. Responses have been weighted by employment.

### Chart 4.10 Manufacturing output prices fell but inflation was broadly stable in the service sector

Output prices



Sources: ONS and Bank calculations.

(a) Headline measure, which includes food, beverages, tobacco and petroleum products. Data are non seasonally adjusted and are to 2014 Q4.  
(b) Based on the Services Producer Price Index. Data are non seasonally adjusted and are to 2014 Q3.

### Table 4.D Surveys point to a slight pickup in prices charged by manufacturers

Survey measures of prices charged<sup>(a)</sup>

	1998–2007 <sup>(b)</sup>	2009	2012–13	2014		
				H1	Q3	Q4
<b>Manufacturing</b>						
CBI — expected	-5	-10	8	11	-1	1
BCC — expected	14	-1	22	21	17	21
Markit/CIPS — reported	51.8	48.1	52.6	53.7	52.5	50.5
Agents' scores — reported	0.4	0.3	1.0	0.7	0.4	0.2
<b>Services</b>						
CBI — expected	3	-18	1	11	14	7
BCC — expected	24	9	20	24	21	24
Markit — reported	52.3	47.1	50.6	51.5	50.9	50.5
Agents' scores — reported	2.5	-0.9	0.3	1.0	1.2	1.4

Sources: Bank of England, BCC, CBI and Markit/CIPS.

(a) The BCC and CBI surveys ask about prices over the next three months. The Markit/CIPS surveys ask about prices over the past month and the Agents' scores refer to manufacturers' domestic prices and business to business services prices over the past three months compared with a year earlier. The BCC data are non seasonally adjusted.  
(b) The averages for the Markit/CIPS manufacturing and CBI services surveys are since the series began in November 1999 and 1998 Q4 respectively. The average for the Agents' scores for services is since January 2005.

which higher growth in starting salaries is reflected in average wage growth, particularly if this encourages existing employees to push for higher wages. In a recent survey by the Bank's Agents, staff retention and recruitment was the most frequently cited factor likely to increase labour cost growth in 2015 compared to 2014 (Chart 4.9).

There are also downside risks to wage growth in the near term. For example, as discussed in a box on pages 36–37, some measures of inflation expectations have fallen. Were these expectations to feed through to wage-setting decisions, they could weigh on wage growth. In the Bank's Agents' survey, inflation expectations was the most cited factor likely to bear down on labour cost growth in 2015 compared to 2014 (Chart 4.9).

In the medium term, wages are expected to continue to grow faster than productivity, consistent with CPI inflation returning to the MPC's 2% inflation target (Section 5).

### Companies' pricing decisions

Another key factor influencing inflation is the degree to which changes in companies' costs are passed through into consumer prices. So far, companies at the start of the supply chain appear to have passed the recent falls in some of their costs, such as energy and other commodity prices, through to lower output prices. Manufacturing sector output price inflation was negative in 2014 H2 (Chart 4.10). And output price inflation in the service sector remained below its pre-crisis average.

Business surveys can also shed light on how companies' prices are likely to evolve in the near term. In the manufacturing sector, net balances for reported prices have fallen slightly over the past few quarters; balances for price expectations for the next three months have, however, picked up a little and are currently above pre-crisis averages (Table 4.D). Survey evidence for pricing intentions in the service sector has been more mixed, but net balances for near-term price expectations are currently at or above pre-crisis averages (Table 4.D).

Companies' pricing decisions will be influenced by demand — companies in some sectors may seek to increase the mark-up of their prices over costs in order to boost their overall profits, given that demand growth has remained solid (Section 2). The extent to which companies are likely to try to increase their mark-ups will, in part, depend on their expectations for overall price inflation (Section 4.4).

## 4.4 Inflation expectations

Inflation expectations are an important influence on households' and companies' wage and price-setting decisions and hence on inflation. Since the November *Report*, indicators of short-term inflation expectations, as well as some indicators of longer-term inflation expectations, have fallen



## Recent developments in UK inflation expectations

Inflation expectations matter for monetary policy because they can play an important role in determining wage and price-setting. For example, employees may have less bargaining power or be less inclined to bargain for higher nominal wages if inflation expectations fall. Companies may also be more likely to hold back price increases if they believe competitors' prices will be increasing less rapidly.

Judging whether inflation expectations are consistent with CPI inflation meeting the MPC's 2% target depends, in part, on the horizon under consideration. Although the target applies at all times, the MPC's remit recognises that actual inflation can temporarily move away from 2% as a result of disturbances to the economy. Short-term inflation expectations are likely to respond to current inflation, as well as the near-term outlook. Longer-term inflation expectations, however, would be expected to be somewhat more stable. Were longer-term inflation expectations to become less well anchored, that would increase the probability of households and businesses building these expectations into lower wages and prices. That, in turn, could increase the probability that a period of below or above-target inflation will persist.

This box assesses recent developments in short and longer-term indicators of inflation expectations. It is difficult to observe inflation expectations directly, but a number of indicators — including surveys of households, companies and professional forecasters, as well as financial market instruments — can act as a guide. In assessing the risk of inflation expectations becoming less well anchored, the MPC monitors not only the level of inflation expectations, but also uncertainty about inflation and the sensitivity of expectations to unexpected economic developments.

### Short-term inflation expectations

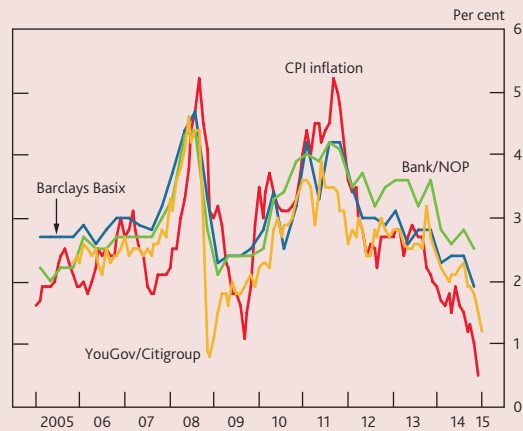
Short-term measures of inflation expectations would be expected to respond to changes in actual inflation and the near-term outlook. Indeed, household measures of inflation expectations one year ahead have fallen alongside the recent fall in CPI inflation (**Chart A**). And financial market measures of inflation expectations, inferred from traded instruments such as inflation swaps, have also fallen at the one-year horizon (**Table 4.E**).

### Longer-term inflation expectations

The levels of longer-term inflation expectations are potentially more informative for judging whether expectations remain consistent with CPI inflation at 2% in the medium term.

### Chart A Households' short-term inflation expectations fell alongside CPI in 2014 Q4

Survey measures of households' inflation expectations one year ahead<sup>(a)</sup>



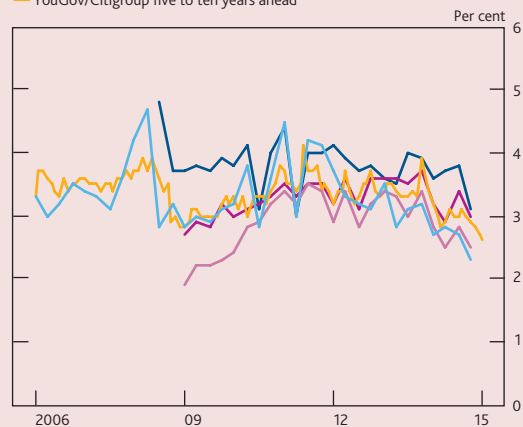
Sources: Bank of England, Barclays Capital, Citigroup, GfK NOP, ONS and YouGov.

(a) The questions ask about expected changes in prices over the next twelve months, but do not reference a specific price index. All measures are based on the median estimated price change and are non seasonally adjusted. CPI inflation is non seasonally adjusted.

### Chart B Households' longer-term inflation expectations

Survey measures of households' inflation expectations beyond one year ahead<sup>(a)</sup>

— Barclays Basix five years ahead  
— Bank/NOP two years ahead  
— Bank/NOP five years ahead  
— Barclays Basix two years ahead  
— YouGov/Citigroup five to ten years ahead



Sources: Bank of England, Barclays Capital, Citigroup, GfK NOP and YouGov.

(a) Measures do not reference a specific price index and are based on median estimated price changes. Data are non seasonally adjusted.

Longer-term survey measures of inflation expectations for households have fallen over the past year (**Chart B**). That fall has been fairly consistent among different survey measures. They are all currently below their historical averages and some are at their lowest levels since the series began.

These survey measures, however, do not directly capture households' beliefs about CPI inflation — no precise price indices are specified in survey questions and individual households buy different baskets of goods and services. That means comparing them with the MPC's 2% CPI inflation target is difficult. One way would be to compare the current

level of these measures against their long-run averages. Most of them, however, have a short backrun, which covers a period when inflation was, on average, above the target. These measures may also have been influenced in the past by a greater focus on RPI inflation, which is generally higher than CPI inflation. So their long-run averages may represent levels somewhat higher than those consistent with the 2% CPI inflation target.

Market-based indicators of longer-term inflation expectations — which are linked to RPI — have also fallen (Chart C) but only to around their pre-crisis averages (Table 4.E). These falls in market-based indicators have been accompanied by falls in implied inflation in the euro area and the United States, although measures in these countries are currently some way below their pre-crisis averages. Market-specific factors in the United Kingdom and abroad can make the developments in these measures difficult to interpret (Section 1).

### Chart C Market-based measures of inflation expectations are around pre-crisis averages

Market-based indicators of inflation expectations



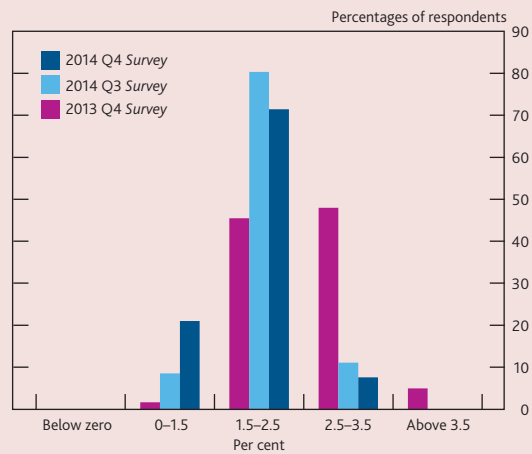
Sources: Bloomberg and Bank calculations.

- (a) Five-year, five-year forward RPI inflation implied from swaps.  
 (b) Instantaneous RPI inflation three years ahead implied from swaps.

Unlike households, some companies are explicitly asked about their expectations for CPI inflation two years ahead. The *Deloitte CFO Survey*, which samples large companies, suggests a slight fall in their expectations. The proportion of respondents expecting inflation to be less than 1.5% has risen in the past year to around one in five, while the proportion of respondents expecting CPI inflation at 2.5% or above has fallen sharply (Chart D). Around 70% of respondents, however, continue to expect CPI inflation in two years to be within 0.5 percentage points of the MPC's target. In a recent survey conducted by the Bank's Agents, companies' inflation expectations was the most cited factor likely to bear down on labour cost growth in 2015 compared to 2014 (Chart 4.9).

### Chart D A majority of large companies expect inflation to be around target in two years' time

*Deloitte CFO Survey* of large companies' inflation expectations two years ahead<sup>(a)</sup>



Source: Deloitte.

- (a) The question asks: 'Where do you think CPI inflation will be in two years' time?'. Data are non seasonally adjusted.

Professional forecasters are also explicitly asked about their expectations for CPI inflation. Based on the Bank's regular survey, professional forecasters' average expectation for CPI inflation three years ahead has been unchanged at 2.1% over the past year (Table 4.E).

Market-based measures suggest that both uncertainty around longer-term inflation, and the sensitivity of longer-term inflation expectations to news in CPI inflation outturns, remained broadly stable over the past few quarters. Measures of uncertainty around expected inflation remain well below their post-crisis averages. One way in which sensitivity can be assessed is by examining how market-based measures of inflation expectations change in response to unexpected movements in CPI inflation on the day of publication. On that basis, the sensitivity of longer-term expectations appears little changed, and similar to that, on average, in the past.

### Conclusion

Measures of short-term inflation expectations have fallen. That is likely, in part, to reflect the weaker near-term outlook for inflation (Section 4.1). Longer-term measures of inflation expectations for households, companies and financial market participants have also fallen, but remain broadly consistent with CPI inflation at the 2% target. Professional forecasters' longer-term expectations have been stable. Other indicators, such as uncertainty about inflation and the sensitivity of inflation expectations to CPI outturns, have been broadly unchanged.

**Table 4.E Inflation expectations**Indicators of inflation expectations<sup>(a)</sup>

Per cent	2000 (or start of series) to 2007 averages <sup>(b)</sup>	Averages since 2008	2012	2013	2014		2015
					H1	H2	Q1 <sup>(c)</sup>
<b>One year ahead inflation expectations</b>							
<b>Households<sup>(d)</sup></b>							
Bank/NOP	2.4	3.3	3.5	3.5	2.7	2.7	n.a.
Barclays Basix	2.8	3.1	3.1	2.8	2.4	2.2	n.a.
YouGov/Citigroup (Nov. 2005)	2.5	2.7	2.7	2.7	2.2	1.9	1.2
<b>Companies (2008 Q2)<sup>(e)</sup></b>	n.a.	0.5	0.5	0.4	0.7	0.4	n.a.
<b>Financial markets (Oct. 2004)<sup>(f)</sup></b>	2.6	2.7	2.6	3.0	2.9	2.8	2.6
<b>Two to three year ahead expectations</b>							
<b>Households<sup>(d)</sup></b>							
Bank/NOP (2009 Q1)	n.a.	2.9	3.1	3.3	2.7	2.7	n.a.
Barclays Basix	3.2	3.3	3.3	3.2	2.8	2.5	n.a.
<b>Professional forecasters (2006 Q2)<sup>(g)</sup></b>	2.0	2.1	2.1	2.2	2.1	2.1	2.1
<b>Financial markets (Oct. 2004)<sup>(h)</sup></b>	2.8	3.0	2.8	3.1	3.1	3.0	2.9
<b>Five to ten year ahead expectations</b>							
<b>Households<sup>(d)</sup></b>							
Bank/NOP (2009 Q1)	n.a.	3.3	3.4	3.6	3.1	3.2	n.a.
Barclays Basix (2008 Q3)	n.a.	3.8	3.9	3.8	3.7	3.5	n.a.
YouGov/Citigroup (Nov. 2005)	3.5	3.3	3.4	3.5	3.0	2.9	2.6
<b>Financial markets (Oct. 2004)<sup>(i)</sup></b>	3.0	3.5	3.1	3.5	3.4	3.3	3.1
Memo: CPI inflation	1.6	2.9	2.9	2.6	1.7	1.2	n.a.

Sources: Bank of England, Barclays Capital, Bloomberg, CBI (all rights reserved), Citigroup, GfK NOP, ONS, YouGov and Bank calculations.

(a) Data are non seasonally adjusted.

(b) Dates in parentheses indicate start date of the data series.

(c) Financial markets data are averages from 1 January to 4 February 2015. YouGov/Citigroup data are for January 2015.

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

(e) CBI data for the manufacturing, business/consumer services and distribution sectors, weighted together using nominal shares in value added. Companies are asked about the expected percentage price change over the coming twelve months in the markets in which they compete.

(f) Instantaneous RPI inflation one year ahead implied from swaps.

(g) Bank's survey of external forecasters, inflation rate three years ahead.

(h) Instantaneous RPI inflation three years ahead implied from swaps.

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

(Table 4.E). Recent trends in inflation expectations are discussed in more detail in a box on pages 36–37.

The MPC judges that, on balance, inflation expectations remain broadly consistent with the 2% target. The MPC will continue to monitor indicators of expectations closely as a further drift down in expectations could pose downside risks to the inflation outlook.



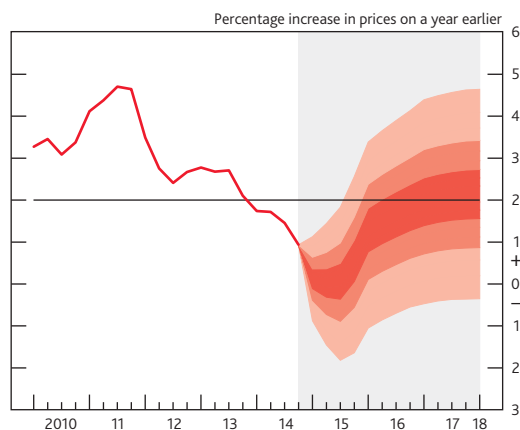
# 5 Prospects for inflation

CPI inflation has dropped sharply and is now well below the 2% target. That undershoot largely reflects unusually low contributions from oil, food and other goods prices. Those lower prices will bear down on annual inflation in coming quarters, but the path of inflation further out will depend on domestic pressures. Those domestic pressures have been weak, as seen in low wage growth in recent years. But domestic pressures are starting to pick up and are likely to build further over the forecast period, as a steady expansion in demand absorbs the remaining economic slack. The Committee judges that it is currently appropriate to set policy so that it is likely that inflation will return to the 2% target within two years. Under the assumption that Bank Rate rises gradually over the forecast period, that is judged likely to be achieved.

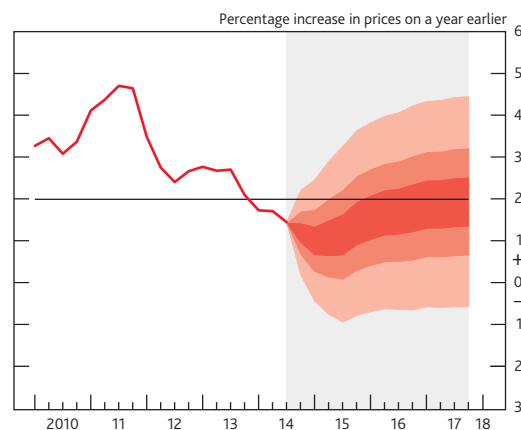
CPI inflation fell to 0.5% in December, necessitating a letter from the Governor to the Chancellor of the Exchequer.<sup>(1)</sup> As set out in that letter, the MPC judges that roughly two thirds of the weakness in inflation relative to the target can be explained by unusually low contributions from energy, food and other goods prices. The remainder reflects more generalised subdued inflationary pressures resulting from weak growth in domestic costs. The fall in the oil price over recent months means that inflation is likely to fall further in the near term (**Chart 5.1**), and could temporarily turn negative. Such price pressures from abroad will bear down on annual inflation for a time but, in the absence of further

(1) That letter can be found at [www.bankofengland.co.uk/monetarypolicy/Documents/cpiletter120215.pdf](http://www.bankofengland.co.uk/monetarypolicy/Documents/cpiletter120215.pdf).

**Chart 5.1** CPI inflation projection based on market interest rate expectations and £375 billion purchased assets



**Chart 5.2** CPI inflation projection in November based on market interest rate expectations and £375 billion purchased assets



Charts 5.1 and 5.2 depict the probability of various outcomes for CPI inflation in the future. 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. 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 30 of those occasions. The fan charts are constructed so that outcomes of inflation are also expected to lie within each pair of the lighter red areas on 30 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. 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.

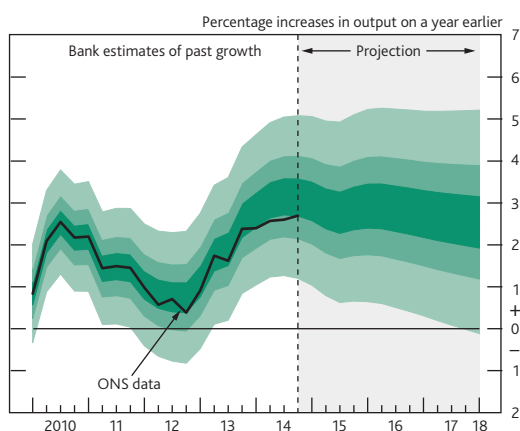
**Table 5.A** Conditioning path for Bank Rate implied by forward market interest rates<sup>(a)</sup>

Per cent	2015				2016				2017				2018
	Q1 <sup>(b)</sup>	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
February	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.1
November	0.5	0.6	0.7	0.8	1.0	1.1	1.2	1.4	1.5	1.6	1.7	1.7	

(a) The data are fifteen working day averages of one-day forward rates to 4 February 2015 and 5 November 2014 respectively. The curve is based on overnight index swap rates.

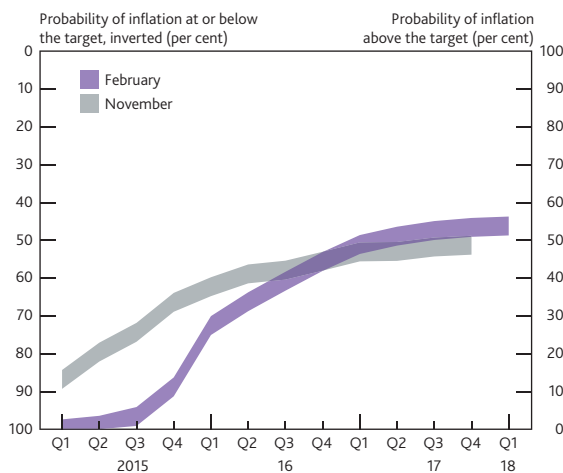
(b) February figure for 2015 Q1 is an average of realised spot rates to 4 February 2015, and forward rates thereafter.

**Chart 5.3** GDP projection based on market interest rate expectations and £375 billion purchased assets



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 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 30 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 30 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. See the box on page 39 of the November 2007 *Inflation Report* for a fuller description of the fan chart and what it represents.

**Chart 5.4** Inflation probabilities relative to the target



The February and November swaths in this chart are derived from the same distributions as Charts 5.1 and 5.2 respectively. They indicate the assessed probability of inflation relative to the target in each quarter of the forecast period. The 5 percentage points width of the swaths reflects the fact that there is uncertainty about the precise probability in any given quarter, but they should not be interpreted as confidence intervals.

external shocks, the path of inflation thereafter will depend on domestic conditions.

The domestic expansion remains robust and will be aided by the boost to real incomes from lower oil prices. Relative to three months ago, the growth projection is further supported by a lower implied path for Bank Rate, which rises to only a little over 1% by early 2018, nearly  $\frac{3}{4}$  of a percentage point lower than the path underlying the November projections (Table 5.A).<sup>(1)</sup> Four-quarter GDP growth is judged likely to settle a little below current rates for much of the forecast period before easing back to around its historical average rate (Chart 5.3). In the first half of the forecast period, GDP grows faster than estimated potential supply growth, such that the remaining margin of slack is thought likely to be absorbed by the middle of the forecast period, with capacity pressures broadly neutral thereafter. Absent a material shift in inflation expectations, wage growth is expected to pick up and unit labour cost growth to return to rates consistent with meeting the 2% inflation target. The Committee's best collective judgement is, therefore, that the risks around the inflation target are broadly balanced from early 2017 (Chart 5.4).

## 5.1 Key judgements and risks

The Committee's projections are underpinned by four key judgements, described below. Table 5.B provides projections for variables that illustrate those judgements; Table 5.C provides a range of indicators to monitor them; and Table 5.D shows indicative projections for a range of other variables.

### Key Judgement 1: in the United Kingdom and abroad, recent falls in oil prices depress inflation temporarily but support activity

Oil prices are more than 50% lower than in the middle of 2014 (Chart 5.5), despite some rises in the period running up to the MPC's February meeting. The futures curve, on which the MPC's projections are conditioned, is consistent with rises in oil prices over the next three years. But, on average, the curve is around 40% lower over the next three years than it was in mid-2014. The lower path for oil prices has significant implications for the outlook for inflation and activity both at home and abroad.

Past falls in oil prices will bear down significantly on annual inflation in the United Kingdom for much of this year. The contribution of petrol prices to CPI inflation was -0.4 percentage points in December and is expected to

(1) Unless otherwise stated, the projections shown in this section are conditioned on: Bank Rate following a path implied by market yields; a constant stock of asset purchases; the Recommendations of the Financial Policy Committee and the current regulatory plans of the Prudential Regulation Authority; the Government's tax and spending plans as set out in the December 2014 Autumn Statement; commodity prices following market paths; and the sterling exchange rate remaining broadly stable. The main assumptions are set out in a table at [www.bankofengland.co.uk/publications/Documents/inflationreport/2015/febca.pdf](http://www.bankofengland.co.uk/publications/Documents/inflationreport/2015/febca.pdf).

**Table 5.B MPC key judgements<sup>(a)(b)</sup>**

**Key Judgement 1: in the United Kingdom and abroad, recent falls in oil prices depress inflation temporarily but support activity**

	Average 1998– 2007	Projections			
		2014	2015	2016	2017
Dollar oil price <sup>(c)</sup>	39	76 (86)	58 (89)	65 (90)	69 (90)

**Key Judgement 2: global growth picks up gradually following recent weakness, particularly in the euro area**

	Average 1998– 2007	Projections			
		2014	2015	2016	2017
World GDP (UK-weighted) <sup>(d)</sup>	3	2¼ (2)	2½ (2½)	2¾ (2¾)	2¾ (2¾)
World GDP (PPP-weighted) <sup>(e)</sup>	4	3½ (3¼)	3½ (3¾)	3¾ (4)	3¾ (4)
Euro-area GDP <sup>(f)</sup>	2¼	¾ (¾)	1¼ (1¼)	2 (1¾)	1¾ (1½)
US GDP <sup>(g)</sup>	3	2½ (2¼)	3 (2¾)	2¾ (2¾)	2½ (2½)

**Key Judgement 3: a recovery in productivity growth and real incomes supports demand growth**

	Average 1998– 2007	Projections			
		2014	2015	2016	2017
Productivity <sup>(h)</sup>	2¼	½ (¾)	¾ (¾)	1½ (1½)	1¾ (1¾)
Household saving ratio <sup>(i)</sup>	8¾	6¾ (6)	6½ (4¾)	6¼ (4½)	6 (4)
Credit spreads <sup>(j)</sup>	¾ <sup>(k)</sup>	2¼ (2¼)	2 (2)	2 (2)	2 (2)
Business investment to GDP ratio <sup>(l)</sup>	10	10½ (10¾)	11 (11½)	11½ (12)	12¼ (12¾)

**Key Judgement 4: domestic slack is absorbed so that inflation returns to the 2% target as the price-level effects associated with lower energy, food and import prices dissipate**

	Average 1998– 2007	Projections			
		2014	2015	2016	2017
Participation rate <sup>(m)</sup>	63	63¼ (63½)	63½ (63¾)	63¾ (64)	63¾ (64)
Average hours <sup>(n)</sup>	32¼	32¼ (32¼)	32½ (32¼)	32½ (32¼)	32¼ (32¼)
Unit labour costs <sup>(o)</sup>	2¾	½ (-¾)	2 (2)	2¾ (2¼)	2¾ (2¼)
UK import prices <sup>(p)</sup>	¼	-4¼ (-3½)	-3¼ (-1½)	¾ (½)	½ (¾)

Sources: Bank of England, BDRG Continental *SME Finance Monitor*, Bloomberg, BofA Merrill Lynch Global Research, used with permission, British Household Panel Survey, Department for Business, Innovation and Skills, Eurostat, IMF *World Economic Outlook (WEO)*, ONS, US Bureau of Economic Analysis and Bank calculations.

(a) The MPC's projections for GDP growth, CPI inflation and unemployment (as presented in the fan charts) are underpinned by four key judgements. The mapping from the key judgements to individual variables is not precise, but the profiles in the table should be viewed as broadly consistent with the MPC's key judgements.

(b) Figures show calendar-year growth rates unless otherwise stated. Figures in parentheses show the corresponding projections in the November 2014 *Inflation Report*.

(c) Average level in Q4. Dollars per barrel. Figure for 2014 is the Q4 outturn. Projection based on monthly Brent futures prices.

(d) Chained-volume measure. Constructed using real GDP growth rates of 143 countries weighted according to their shares in UK exports.

(e) Chained-volume measure. Constructed using real GDP growth rates of 144 countries weighted according to their shares in world GDP using the IMF's purchasing power parity (PPP) weights.

(f) Chained-volume measure.

(g) Chained-volume measure.

(h) GDP per hour worked. GDP at market prices is based on the mode of the MPC's backcast.

(i) Calendar-year average. Percentage of total available household resources.

(j) Level in Q4. Percentage point spread over reference rates. Based on a weighted average of household and corporate loan and deposit spreads over appropriate risk-free rates. Indexed to equal zero in 2007 Q3. Figure for 2014 is the Q4 outturn.

(k) Based on the weighted average of spreads for households and large companies over 2003 and 2004 relative to the level in 2007 Q3. Data used to construct the SME spread are not available for that period. The period is chosen as broadly representative of one where spreads were neither unusually tight nor unusually loose.

(l) Calendar-year average. Chained-volume business investment as a percentage of GDP.

(m) Level in Q4. Percentage of the 16+ population.

(n) Level in Q4. Average weekly hours worked, in main job and second job.

(o) Four-quarter growth in unit labour costs in Q4. Whole-economy total labour costs divided by GDP at market prices, based on the mode of the MPC's GDP backcast. Total labour costs comprise compensation of employees and the labour share multiplied by mixed income. Some of the change in the projection for unit labour costs (ULCs) since the November *Report* is due to the incorporation of changes to pension rules. In particular, ULCs in 2016 have been adjusted upward to reflect the abolition of contracting out from the additional state pension, which will increase the National Insurance contributions paid by those employers that are affected. The change mainly affects public sector employees, so private sector unit labour costs will be largely unaffected. Further, ULC growth has also been adjusted up slightly in each year of the forecast to reflect an increase in the coverage of, and the minimum employer pension contributions associated with, auto-enrolment.

(p) Four-quarter inflation rate in Q4. Excludes the impact of missing trader intra-community fraud.

average -0.6 percentage points over the first half of 2015, before past price falls begin to drop out of the annual comparison in the second half of the year. In addition, energy suppliers have announced average cuts of a little over 4% in household gas bills, which come into the CPI between January and May. There are wider implications for inflation as companies that use oil as an input pass through reductions in their costs. As set out in a box on pages 32–33, those take time to come through but are likely to reduce consumer and producer price inflation worldwide for some time.

The MPC's view of demand and supply pressures further out reflect both the lower oil price and the factors that caused the oil price to fall. Lower oil prices will be associated with higher real incomes and stronger activity, although oil producers will face declines in revenues. But if falls reflect weaker global demand, rather than positive news on oil supply, that boost would be offset to some extent. Although it is difficult to identify the drivers precisely, the MPC judges that the majority of the fall in oil prices since the summer reflects positive news on supply, but that downside news on global demand, some of which was already incorporated in the MPC's November projections, has also played a significant role.

The lower path for oil prices since the summer is judged, by itself, to have boosted the outlook for world activity by just under 1%. That has, however, been more than offset by other news, as set out in the November *Report* and Key Judgement 2 below, such that the outlook for UK-weighted world demand is lower than projected six months ago, and similar to that in November. There is uncertainty about that outlook, and it is possible that lower prices boost demand in oil-importing countries by more than expected. Lower oil prices support UK real incomes and hence domestic demand, although the impact on investment is more uncertain (Key Judgement 3). They also support productivity growth a little, such that the overall impact of the fall in oil prices since the summer on the medium-term inflation outlook is broadly neutral.

The outlook for oil demand and supply, and hence for oil prices, is uncertain. Indeed, measures of uncertainty around oil prices have increased markedly in recent months.

### Key Judgement 2: global growth picks up gradually following recent weakness, particularly in the euro area

Euro-area growth remained weak in the second half of 2014 and consumer prices fell. Although lower oil prices are depressing inflation, underlying inflationary pressures are also weak. Reflecting that, in January the European Central Bank announced that it would purchase €60 billion of public and private sector assets per month at least until September 2016 or until there is a sustained adjustment in the path of inflation, consistent with achieving inflation rates below, but close to, 2% over the medium term (Section 1). Asset purchases are assumed to support euro-area economic activity over the

### Table 5.C Monitoring risks to the Committee's key judgements

The Committee's projections are underpinned by four key judgements. Risks surround all of these, and the MPC will monitor a broad range of variables to understand the degree to which the risks are crystallising. The table below shows

Bank staff's indicative near-term projections that are consistent with the judgements in the MPC's central view evolving as expected.

Key judgement	Likely developments in 2015 H1 and 2015 Q3 if judgements evolve as expected
<b>1: in the United Kingdom and abroad, recent falls in oil prices depress inflation temporarily but support activity</b>	<ul style="list-style-type: none"> <li>Commodity prices and sterling ERI to evolve in line with the conditioning assumptions set out in <a href="http://www.bankofengland.co.uk/publications/Documents/inflationreport/2015/febca.pdf">www.bankofengland.co.uk/publications/Documents/inflationreport/2015/febca.pdf</a>.</li> <li>Domestic petrol prices to fall in 2015 Q1.</li> <li>Domestic gas prices to fall by a little over 4% in H1, in line with recent announcements.</li> </ul>
<b>2: global growth picks up gradually following recent weakness, particularly in the euro area</b>	<ul style="list-style-type: none"> <li>Quarterly euro-area GDP growth to average between ¼% and ½%.</li> <li>Euro-area inflation to stabilise in 2015 H1.</li> <li>Quarterly US GDP growth to average a little above ½%; non-farm payrolls to increase by around 250,000 per month.</li> <li>Indicators of activity consistent with four-quarter PPP-weighted emerging-economy growth of around 4½% on average; within that, Chinese GDP growth to average around 7%.</li> </ul>
<b>3: a recovery in productivity growth and real incomes supports demand growth</b>	<ul style="list-style-type: none"> <li>Four-quarter growth in hourly labour productivity to average a little under ¾% in the first three quarters of 2015.</li> <li>Quarterly consumer spending growth of around 1%.</li> <li>Credit spreads to decline slightly over 2015.</li> <li>Average quarterly business investment growth of around 1½%.</li> <li>Broadly flat housing investment.</li> <li>Rates of increase in the main indices of national house prices to average around ¼% a month until 2015 Q3.</li> <li>A rise in mortgage approvals for house purchase to around 65,000 a month, on average, in 2015 Q3.</li> <li>Average quarterly growth in UK export volumes of around ¾%.</li> </ul>
<b>4: domestic slack is absorbed so that inflation returns to the 2% target as the price-level effects associated with lower energy, food and import prices dissipate</b>	<ul style="list-style-type: none"> <li>Non-fuel import prices to fall by around 1% in the year to 2015 Q3.</li> <li>Headline LFS unemployment rate to decline to around 5½% by mid-2015.</li> <li>Participation rate to pick up to around 63½% by 2015 Q3.</li> <li>Average hours worked to increase by almost 1% in the year to 2015 Q3.</li> <li>Indicators of spare capacity within companies to show little intensification of capacity pressures.</li> <li>Four-quarter AWE growth of around 3½% in 2015 Q3.</li> <li>Four-quarter growth in whole-economy unit labour costs to rise to around 1½% by mid-2015.</li> <li>Indicators of inflation expectations continue to be consistent with meeting the 2% target in the medium term.</li> </ul>

forecast period. Activity is also supported by lower oil prices such that growth picks up to a little under 2% by early 2016 (**Chart 5.6**), slack narrows and CPI inflation picks up.

There remain significant risks around the euro-area outlook. There is uncertainty about the extent to which asset purchases will support activity. It is also possible that weak inflationary pressures could persist: market-based measures of inflation expectations are well below mid-2014 levels, for example, including at longer-term horizons. The weaker are domestic inflationary pressures, the harder it will be for those countries with large debt burdens to reduce those debts, and the greater the challenge of rebalancing between euro-area countries. A risk also remains that the process of rebalancing will be

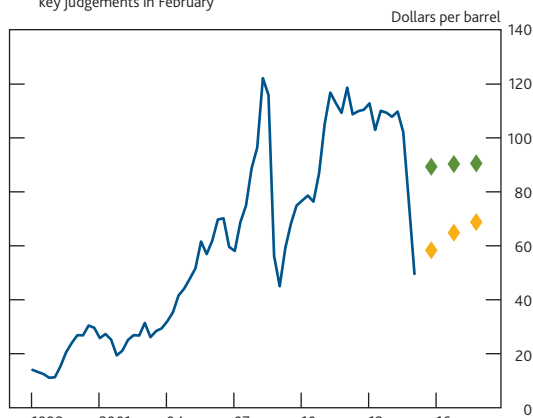
**Table 5.D** Indicative projections consistent with the MPC's modal projections<sup>(a)</sup>

	Average 1998– 2007	Projections			
		2014	2015	2016	2017
Household consumption <sup>(b)</sup>	3¾ (3¾)	2¼ (2)	3¾ (2½)	3½ (2¾)	2½ (2¾)
Business investment <sup>(c)</sup>	2¼ (2¼)	7 (9½)	6¼ (10)	8½ (8¾)	9 (8)
Housing investment <sup>(d)</sup>	3¾ (3¾)	11¼ (13)	2 (7½)	6¼ (4¾)	5¾ (1¾)
Exports <sup>(e)</sup>	4½ (4½)	-¾ (-1)	3¼ (4)	5½ (5½)	4½ (5)
Imports <sup>(f)</sup>	6 (6)	¾ (-¾)	2 (5)	6¼ (5¾)	5 (5)
Real post-tax household income <sup>(g)</sup>	3 (3)	2½ (1½)	3½ (1¼)	3 (2½)	2¼ (2½)
Employment <sup>(h)</sup>	1 (1)	2 (2½)	1½ (1¼)	1 (1)	¾ (¾)
Average weekly earnings <sup>(h)</sup>	4¼ (4½)	1¾ (1¼)	3½ (3¾)	4 (3¾)	4 (3¾)

- (a) These projections are produced by Bank staff for the MPC to be consistent with the MPC's modal projections for GDP growth, CPI inflation and unemployment. Figures show calendar-year growth rates unless otherwise stated. Figures in parentheses show the corresponding projections in the November 2014 *Inflation Report*.
- (b) Chained-volume measure. Includes non-profit institutions serving households.
- (c) Chained-volume measure.
- (d) Chained-volume measure. Whole-economy measure. Includes new dwellings, improvements and spending on services associated with the sale and purchase of property.
- (e) Chained-volume measure. The historical data exclude the impact of missing trader intra-community (MTIC) fraud. Official MTIC-adjusted data are not available for exports, so headline exports data have been adjusted by Bank staff for MTIC fraud by an amount equal to the ONS import adjustment.
- (f) Chained-volume measure. The historical data exclude the impact of MTIC fraud.
- (g) Total available household resources deflated by the consumer expenditure deflator.
- (h) Four-quarter growth rate in Q4.

**Chart 5.5** Dollar oil price<sup>(a)</sup>

- ◆ Projection at the time of the November *Report*
- ◆ Projection consistent with MPC key judgements in February



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

- (a) Quarterly average of Brent prices. The last data point is an estimate for 2015 Q1, based on average realised spot prices to 4 February 2015, and futures prices thereafter. Projections are average levels in 2015, 2016 and 2017 Q4 based on monthly Brent futures prices.

disorderly, with adverse effects on UK activity via exports, financial markets and confidence. That will remain sensitive to political developments, as demonstrated by recent sharp moves in Greek sovereign yields.

Activity in the United States has remained robust and employment has been growing more rapidly than expected three months ago (Section 2). Activity is likely to be further supported by the fall in oil prices, and annual growth is projected to pick up to 3% in 2015 before falling back a little (Table 5.B). That outlook is conditioned on a gradually rising path for interest rates (Section 1). There is a risk that the tightening in US monetary policy is associated with financial market volatility in the United States and elsewhere.

Emerging economies have, in the past, proved sensitive to changes in the outlook for US monetary policy. Many emerging economies with large current account deficits will benefit from cheaper oil imports, but they remain vulnerable to capital flight. More generally, the outlook for emerging economies has weakened a little. In China, the continuing rebalancing towards domestic consumption is likely to be associated with slowing growth. That rebalancing poses risks to the Chinese outlook, as do property and credit markets. A sharp slowing in China would weigh on UK exports to a degree, and would have wider implications through indirect trade links and financial market disruption. But China is a significant commodity consumer so commodity prices would probably fall as well, helping to support demand.

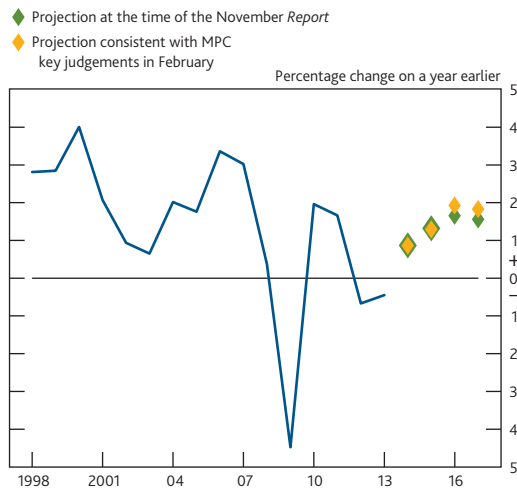
Elsewhere, the outlook for activity is weaker, particularly in Russia, where a sharp slowdown now appears in prospect following a period of financial market volatility. In addition, longer-run growth prospects in a number of economies, particularly commodity exporters, have been revised down following the fall in oil prices and a period of disappointing growth outcomes. Overall, the outlook for UK-weighted world GDP growth is similar to three months ago, as support from lower oil prices and further monetary stimulus in a range of countries has offset weaker underlying growth. The risks to that outlook are broadly balanced, as in November.

### Key Judgement 3: a recovery in productivity growth and real incomes supports demand growth

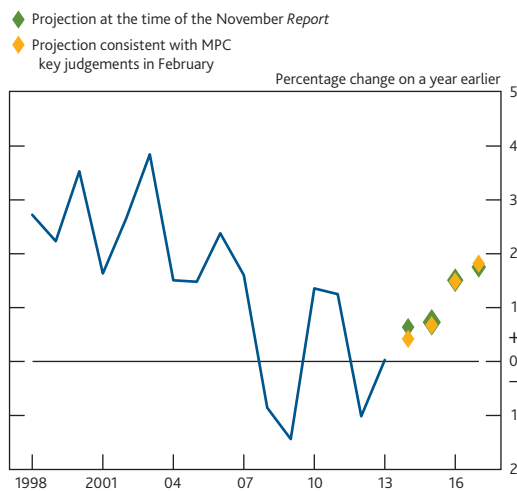
Revisions to ONS data since the November *Report* suggest a somewhat different pattern of UK demand recently. In particular, GDP now appears to have grown a little more slowly over the past two years than previously thought. But consumption growth has been revised higher, as has household income.

Household consumption growth is projected to pick up a little further over the forecast period before slowing to below past average rates (Table 5.D). The near-term outlook is stronger than projected in November, reflecting the boost to real



**Chart 5.6 Euro-area growth<sup>(a)</sup>**

(a) Calendar-year growth rates. Chained-volume measure.

**Chart 5.7 Productivity growth<sup>(a)</sup>**

(a) Calendar-year growth rates. GDP per hour worked. GDP is at market prices and projections are based on the mode of the MPC's backcast.

incomes associated with lower oil prices (Key Judgement 1), and lower interest rates. Further out, as in November, growth in real incomes, and hence consumption, is supported by a gradual pickup in productivity growth to around its historical average rate (Chart 5.7). There is considerable uncertainty in both directions around the central path for productivity growth that underlies the MPC's projections.

Upside news on the past and future path of income — including the Office for Budget Responsibility's latest projections, which incorporated a downward revision to the effective tax rate on household income — has increased the Committee's confidence that robust consumption growth can be achieved without a marked fall in the saving ratio. There are, however, risks around the outlook for saving. Saving could be lower if spending is more sensitive to lower interest rates than assumed or if households become more optimistic about the outlook as they see real wages rise for the first time in many years. Alternatively, households may choose to save more if uncertainty rises.

In contrast to the upside news on consumption, there has been downside news on housing market activity. Housing investment was weaker than expected in Q3, as were mortgage approvals in Q4. Mortgage approvals are, however, expected to recover as the lower assumed path for Bank Rate feeds through to the rates faced by households: some quoted mortgage rates are already at record lows (Section 1). So although the near-term outlook for housing investment is considerably weaker than previously expected, growth is somewhat stronger further out (Table 5.D).

Business investment fell in Q3, according to the latest National Accounts. It is possible that the weakness reflects negative news about export prospects or greater uncertainty about the outlook. But investment data are volatile and surveys suggest little change in investment intentions. In the central projection, annual investment growth remains robust (Table 5.D), reflecting support from low interest rates and the past easing in credit conditions, the gradual recovery in global demand and domestic demand conditions. Within that, the lower oil price is likely to weigh on investment by oil extraction companies — in the central projection investment by extraction companies, which accounts for 7% of business investment, falls by more than 40% over the forecast period. There is uncertainty not only around the extent of that fall but also the potential boost to other companies' investment. More broadly, there is uncertainty about whether companies will be willing and able to invest as much as is assumed in the central projection. The path for investment is associated with an increasing corporate financial deficit, consistent with companies running down the surpluses built up over the past decade, or raising capital issuance further (Section 1). But they may prefer to invest less and to hold more cash in reserve, especially if global or domestic uncertainty increases.



With robust domestic demand but only a gradual recovery in world activity, imports grow faster than exports for much of the forecast period. Net trade detracts from growth and the trade deficit settles at a little over 1½% of GDP in 2017. Trade flows are only one element of the current account, which also captures income flows between the United Kingdom and other countries. Those income flows have deteriorated over the past few years, taking the UK current account deficit close to record levels at 6% of GDP in Q3. Over the forecast period, there is some improvement in that position, but the deficit on income remains wide. It is possible that the deficit will close somewhat more, as prospects improve in the countries where UK businesses have invested. And these flows do not include revaluation effects, which have tended to support the United Kingdom's stock of net foreign assets. But the magnitude of the current account deficit suggests some risk to the sustainability of the growth outlook.

**Key Judgement 4: domestic slack is absorbed so that inflation returns to the 2% target as the price-level effects associated with lower energy, food and import prices dissipate**

CPI inflation fell to 0.5% in December, considerably below expectations three months ago. That undershoot in CPI inflation relative to the target reflects unusually low contributions from energy, food and other goods prices and, to a lesser extent, weakness in domestic inflationary pressures (Section 4).

In the near term, annual food price inflation is likely to remain slightly negative, and further falls in petrol prices and cuts in household energy bills will increase the downward pressure on inflation (Key Judgement 1). The rise in sterling since early 2013 is also likely to bear down on inflation: lower non-energy import prices are probably pulling down CPI inflation a little at the start of 2015, with more downward pressure to come over the forecast period. There is more uncertainty than three months ago about the extent to which the past rise in sterling is dampening import prices and hence CPI inflation: the latest data show a smaller fall in import prices than would have been expected given the rise in the exchange rate (Section 4). If there is little further pass-through to import prices from the rise in sterling, inflation may pick up faster than expected, or if import prices have further to fall there could be a greater drag on inflation.

Overall, the negative contribution of energy, food and other import prices is projected to build a little further and it is now more likely than not that CPI inflation will dip briefly below zero at some point in the first half of 2015. In the absence of further large declines in global prices, the combined contribution of those items to CPI inflation is likely to pick up from late 2015 towards more normal rates. It is possible, however, that near-term downward pressure from these sources could persist a little longer than assumed in the

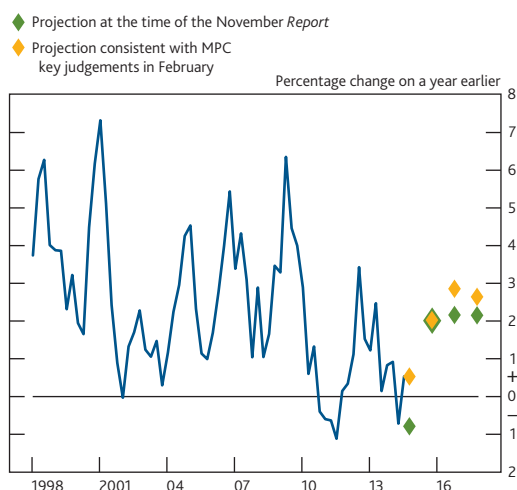
central projection if, for example, competitive pressures in the supermarket sector were to build further.

There is a risk that a period of very low inflation or even falling prices could persistently affect price or wage-setting decisions. Measures of household inflation expectations have fallen over the past year, and, more recently, longer-term financial market measures have also moved down (see the box on pages 36–37). It is perhaps not surprising that households have taken some signal from falls in CPI inflation for their near-term expectations, especially as falls have been concentrated in the prices of frequently purchased items such as petrol. Falls in longer-term measures of households' and financial market expectations are potentially more economically significant. But, overall, indicators of inflation expectations remain broadly consistent with the 2% inflation target. The MPC will continue to monitor those indicators closely as a further drift down in expectations could pose downside risks to the inflation outlook.

Conditions in the labour market suggest a recovery in wage growth. Average weekly earnings data show a pickup in wage growth in the second half of 2014 (Section 4). That in part reflects a modest rise in productivity growth. But it also reflects the continued fall in labour market slack. Since the *November Report*, labour market slack has shrunk further with a fall in unemployment and a rise in average hours worked only partly offset by a fall in labour market participation. A survey on companies' 2015 wage settlements by the Bank's Agents suggests that productivity and recruitment and retention difficulties are putting upward pressure on labour cost growth, but that has been tempered by lower inflation expectations (Section 4). That survey is consistent with a gradual pickup in pay growth, but it also suggests a risk that wage pressures may be a little more sensitive to inflation developments.

The outlook for domestic costs remains consistent with inflation returning to the 2% target as the drag from lower energy, food and import prices dissipates. In the MPC's central projection, labour market slack is absorbed by the middle of the forecast period and four-quarter wage and unit labour cost growth return to rates consistent with CPI inflation close to 2% (**Chart 5.8**). Unemployment is projected to fall further, to around its estimated long-run equilibrium level of 5%. Average hours worked remain broadly flat, and in line with their assumed trend level (Section 3). Participation is assumed to rise to its medium-term equilibrium level, which, despite the demographic drag from an ageing population, is supported by factors such as the desire by older people to work longer than in the past and changes in the benefits system over many years. Downside news on participation over the past six months suggests risks around trend participation and therefore the outlook for domestic cost growth. A lower medium-term equilibrium level of participation would imply a

**Chart 5.8 Unit labour cost growth<sup>(a)</sup>**



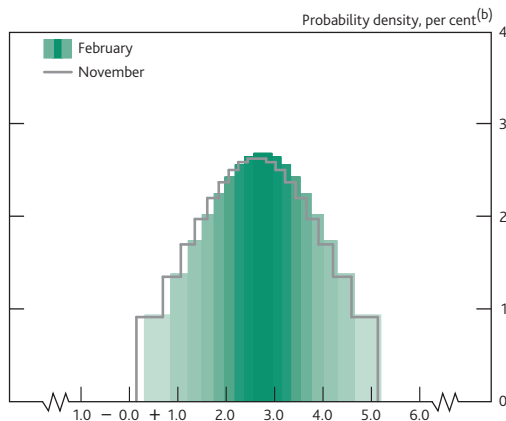
Sources: ONS and Bank calculations.

(a) Whole-economy total labour costs divided by GDP at market prices, based on the mode of the MPC's GDP backcast. Total labour costs comprise compensation of employees and the labour share multiplied by mixed income. The chart shows data to 2014 Q3 and projections for four-quarter growth in Q4 thereafter. Some of the change in the projection for unit labour costs (ULCs) since the *November Report* is due to the incorporation of changes to pension rules. In particular, ULCs in 2016 have been adjusted upward to reflect the abolition of contracting out from the additional state pension, which will increase the National Insurance contributions paid by those employers that are affected. The change mainly affects public sector employees, so private sector unit labour costs will be largely unaffected. Further, ULC growth has also been adjusted up slightly in each year of the forecast to reflect an increase in the coverage of, and the minimum employer pension contributions associated with, auto-enrolment.

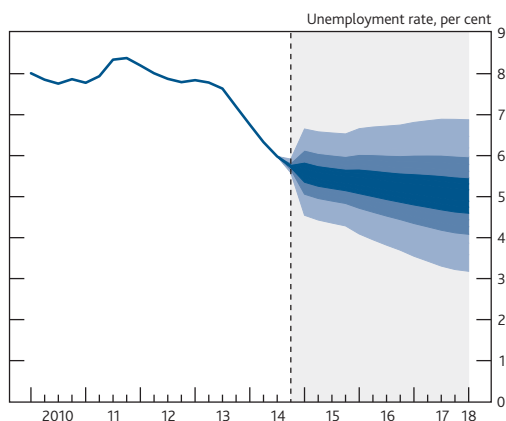
**Table 5.E** Calendar-year GDP growth rates of the modal, median and mean paths<sup>(a)</sup>

	Mode	Median	Mean
2015 <sup>(b)</sup>	2.9 (2.9)	2.9 (2.9)	2.9 (2.9)
2016	2.9 (2.6)	2.9 (2.6)	2.9 (2.6)
2017	2.7 (2.6)	2.7 (2.6)	2.7 (2.6)

- (a) The table shows the projections for calendar-year growth of real GDP consistent with the modal, median and mean projections for four-quarter growth of real GDP implied by the fan chart. Where growth rates depend in part on the MPC's backcast, revisions to quarterly growth are assumed to be independent of the revisions to previous quarters. The numbers in parentheses show the corresponding projections in the November *Inflation Report*. The February and November projections have been conditioned on market interest rates, and the assumption that the stock of purchased assets financed by the issuance of central bank reserves remains at £375 billion throughout the forecast period.
- (b) The anticipated upward revisions to recent estimates of quarterly GDP growth has implications for calendar-year growth in 2015. Without the anticipated upward revisions to past GDP growth, the modal path of the Committee's November projections would imply calendar-year growth of 2.8% in 2015 rather than 2.9%.

**Chart 5.9** Projected probabilities of GDP growth in 2017 Q1 (central 90% of the distribution)<sup>(a)</sup>

- (a) Chart 5.9 represents the cross-section of the GDP growth fan chart in 2017 Q1 for the market interest rate projection. It has been conditioned on the assumption that the stock of purchased assets remains at £375 billion throughout the forecast period. The coloured bands in Chart 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. The grey outline represents the corresponding cross-section of the November 2014 *Inflation Report* fan chart, which was conditioned on market interest rates and the same assumption about the stock of purchased assets financed by the issuance of central bank reserves.
- (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.

**Chart 5.10** Unemployment projection based on market interest rate expectations and £375 billion purchased assets

The fan chart depicts the probability of various outcomes for LFS unemployment. 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. The coloured bands have the same interpretation as in Chart 5.1, and portray 90% of the probability distribution. The calibration of this fan chart takes account of the likely path dependency of the economy, where, for example, it is judged that shocks to unemployment in one quarter will continue to have some effect on unemployment in successive quarters. The fan begins in 2014 Q4, a quarter earlier than the fan for CPI inflation. That is because Q4 is a staff projection for the unemployment rate, based in part on data for October and November. The unemployment rate was 5.8% in the three months to November, and is projected to fall to 5.7% in Q4 as a whole. In the later part of the forecast period, a significant proportion of this distribution lies below Bank staff's current estimate of the long-term equilibrium unemployment rate. There is therefore uncertainty about the precise calibration of this fan chart.

smaller output gap at the start of the forecast. But this could be partly balanced in the other direction: slack would be greater if trend average hours were higher; the proportion of part-time staff who report that they would prefer a full time job remains high.

## 5.2 The projections for demand, unemployment and inflation

Based on these judgements and the risks around them, the Committee judges that four-quarter GDP growth is likely to settle a little below current rates for much of the forecast period before easing back to around its historical average rate (Table 5.E). Domestic demand growth is supported initially by lower energy and food prices and further out by higher productivity growth. Net exports detract from growth. The central outlook for GDP growth is a little stronger than that in November for much of the forecast period (Chart 5.9). That reflects the impact of lower oil prices on UK activity, as well as the lower implied path for Bank Rate. Considerable uncertainty about the outlook, stemming in particular from world activity and domestic supply growth, remains. The Committee judges the risks around the outlook to be balanced, as in November.

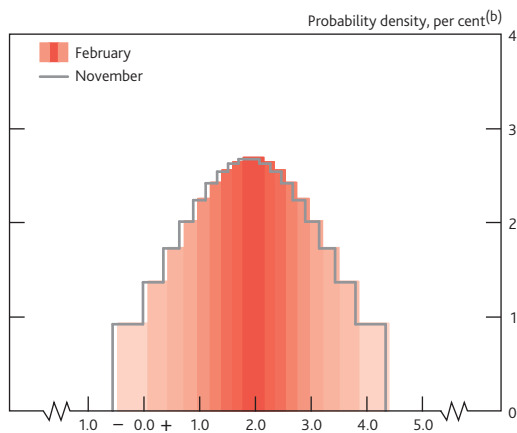
Although employment growth slows over the forecast period, the unemployment rate is likely to fall further (Chart 5.10). The best collective view of the MPC is that slack is currently in the region of  $\frac{1}{2}\%$  of GDP. There is uncertainty around that judgement and a range of views on the Committee about both the current degree of slack and how quickly it will narrow, but in the central projection it is absorbed by the middle of the forecast period.

Inflation is judged likely to remain close to zero for most of 2015, reflecting past falls in energy, food and other import prices and some continued drag from domestic slack. The near-term projection is considerably lower than it was three months ago (Table 5.F) and it is now more likely than not that CPI inflation will dip briefly below zero at some point in the first half of 2015. Moreover, the MPC judges that the period of low inflation expected over 2015 poses a downside risk to inflation over the first half of the projection; the factors pulling down inflation currently could prove more persistent than expected or a period of low inflation could be reflected in weaker wage pressures. Further out, the profile hinges on the outlook for domestic inflationary pressures. In the central projection, the gradual pickup in productivity growth and declines in slack are associated with a rise in four-quarter wage and unit labour cost growth, to rates consistent with the MPC's 2% target. CPI inflation is therefore judged likely to return to the 2% target by the two-year point (Chart 5.11), before rising a little further. Although there is considerable uncertainty around the medium-term outlook, the risks

**Table 5.F** Q4 CPI inflation

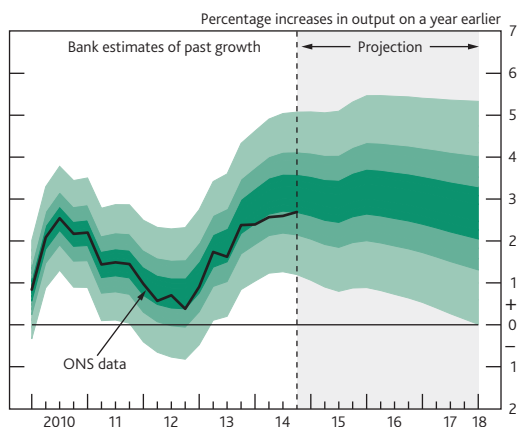
	Mode	Median	Mean
2015 Q4	0.6 (1.4)	0.5 (1.4)	0.5 (1.4)
2016 Q4	1.8 (1.8)	1.8 (1.8)	1.8 (1.8)
2017 Q4	2.1 (2.0)	2.1 (2.0)	2.1 (2.0)

The table shows projections for Q4 four-quarter CPI inflation. The numbers in parentheses show the corresponding projections in the November *Inflation Report*. The February and November projections have been conditioned on market interest rates, and 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 5.11** Projected probabilities of CPI inflation in 2017 Q1 (central 90% of the distribution)<sup>(a)</sup>

(a) Chart 5.11 represents the cross-section of the CPI inflation fan chart in 2017 Q1 for the market interest rate projection. It has been conditioned on the assumption that the stock of purchased assets remains at £375 billion throughout the forecast period. The coloured bands in Chart 5.11 have a similar interpretation to those on the fan charts. Like the fan charts, they portray the central 90% of the probability distribution. The grey outline represents the corresponding cross-section of the November 2014 *Inflation Report* fan chart, which was conditioned on market interest rates and the same assumption about the stock of purchased assets.

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

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

See footnote to Chart 5.3.

around the central projection are judged to be balanced from the two-year point. Taking into account the central projection and the risks around it, the MPC's best collective judgement is that inflation is as likely to be above as below the 2% target from early 2017 (Chart 5.4), a slightly higher inflation profile than judged likely three months ago, reflecting the slightly stronger growth outlook.

Charts 5.12 and 5.13 show the Committee's GDP and CPI inflation projections under the alternative assumption that Bank Rate remains at 0.5% throughout the forecast period.<sup>(1)</sup> In that case, GDP growth remains higher throughout the forecast period and inflation would rise further above the 2% target in the second half of the forecast period.

### 5.3 The policy decision

The UK expansion has continued, but inflation has fallen to 0.5%, well below the MPC's 2% target. The MPC judges that around two thirds of the undershoot in inflation reflects unusually low contributions from energy, food and other goods prices, which will continue to bear down on annual inflation for the next year or so. The remainder is accounted for by weak domestic cost growth: although it has been diminishing, there remains a degree of slack in the economy.

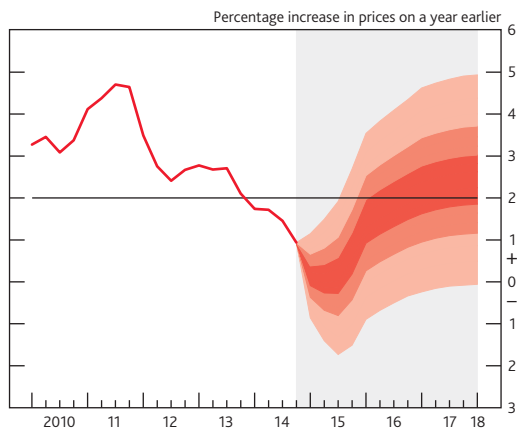
The MPC's inflation target is symmetric: deviations of inflation below the target are to be treated with the same importance as deviations above it. Given the nature of the shocks affecting inflation, the MPC judges it appropriate to set policy so that it is likely that inflation will return to the 2% target within two years. Inflation is below the target while unemployment is above its long-run sustainable rate. There is therefore no immediate trade-off between returning inflation to the target and supporting economic activity. In fact, to return inflation to the target it is necessary to eliminate the remaining degree of economic slack. It is therefore appropriate to aim to return inflation to the target as quickly as possible after the effects of energy and food price movements have abated.

At its meeting on 5 February, the MPC noted that conditional on interest rates following the path currently implied by market yields, it was likely that slack in the economy would be absorbed and inflation would return to the 2% target within two years.

As set out in this *Report*, there are risks to the inflation outlook in both directions. Were downside risks to materialise, market expectations of the future path of interest rates could adjust to reflect an even more gradual and limited path for Bank Rate increases than is currently priced. The

(1) The constant rate projections in this *Report* assume that Bank Rate is 0.5% for the next three years, and then rises towards the market path over the next three years; that path is anticipated by businesses and households.

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



See footnote to Chart 5.1.

Committee could also decide to expand the Asset Purchase Facility or to cut Bank Rate further towards zero from its current level of 0.5%. The scope for prospective downward adjustments in Bank Rate reflects, in part, the fact that the United Kingdom's banking sector is operating with substantially more capital now than it did in the immediate aftermath of the crisis. Reductions in Bank Rate are therefore less likely to have undesirable effects on the supply of credit to the UK economy than previously judged by the MPC.<sup>(1)</sup> Were upside risks to materialise, it would be appropriate for Bank Rate to increase more quickly than embodied in current market yields but the likelihood is that those increases would still be more gradual and limited than in previous tightening cycles.

The MPC stands ready to take whatever action is needed, as events unfold, to ensure inflation remains likely to return to target in a timely fashion. Under the central case, the MPC judges it more likely than not that Bank Rate will increase over the forecast period.

In the light of the economic outlook, the Committee voted to maintain Bank Rate at 0.5% and the stock of purchased assets at £375 billion.

(1) See paragraph 12 of Charlie Bean's letter of 16 May 2013 to Andrew Tyrie; [www.bankofengland.co.uk/publications/Documents/other/treasurycommittee/ir/tsc160513.pdf](http://www.bankofengland.co.uk/publications/Documents/other/treasurycommittee/ir/tsc160513.pdf).

## 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 in January.<sup>(1)</sup> The average of respondents' central expectations for CPI inflation was in line with the MPC's projections. On average, respondents expected that annual CPI inflation would be 1.5% in a year's time (Table 1), 0.4 percentage points lower than at the time of the November *Report*. Further ahead, the mean external expectation was for inflation to be around the 2% target, unchanged from November. Similarly, while the probability placed on below-target inflation one year ahead had risen, expectations of below-target inflation at the three-year horizon were little changed at around 50% (Chart A).

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

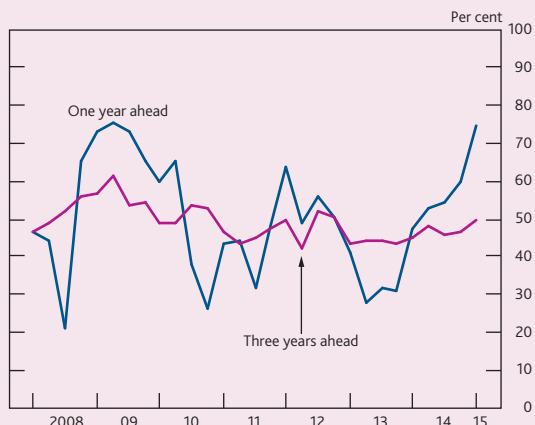
	2016 Q1	2017 Q1	2018 Q1
CPI inflation <sup>(b)</sup>	1.5	2.0	2.1
GDP growth <sup>(c)</sup>	2.5	2.4	2.3
LFS unemployment rate	5.4	5.2	5.0
Bank Rate (per cent)	0.9	1.7	2.4
Stock of purchased assets (£ billions) <sup>(d)</sup>	368	340	306
Sterling ERI	88.9	89.6	88.4

Source: Projections of outside forecasters as of 28 January 2015.

(a) For 2016 Q1, there were 26 forecasts for CPI inflation and GDP growth, 24 for Bank Rate, 25 for the unemployment rate, 17 for the stock of asset purchases and 15 for the sterling ERI. For 2017 Q1, there were 22 forecasts for CPI inflation and GDP growth, 22 for Bank Rate, 21 for the unemployment rate, 15 for the stock of asset purchases and 13 for the sterling ERI. For 2018 Q1, there were 21 forecasts for CPI inflation and GDP growth, 21 for Bank Rate, 20 for the unemployment rate, 14 for the stock of asset purchases and 13 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 External forecasters' probabilities of below-target inflation in three years' time were little changed

Average probability of below-target CPI inflation

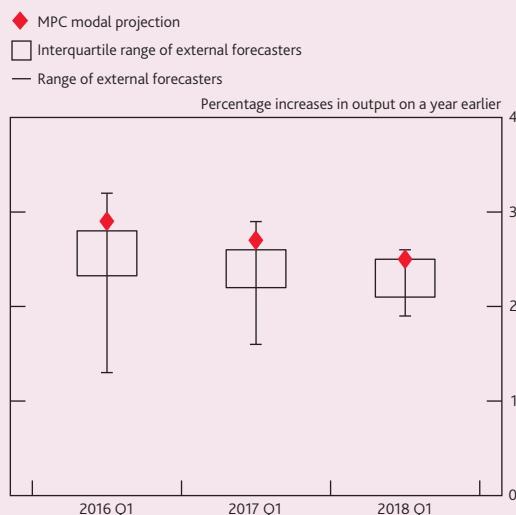


Source: Projections of outside forecasters provided for *Inflation Reports* between February 2008 and February 2015.

The average of external forecasters' central expectations is for four-quarter GDP growth to slow a little, from 2.7% in 2014 Q4 to 2.3% in 2018 Q1. The MPC's central projection for GDP growth is towards the upper end of the range of external forecasts (Chart B).

### Chart B External forecasters expect growth to slow slightly over the forecast period

Forecasters' central projections of GDP growth



Source: Projections of outside forecasters as of 28 January 2015.

External forecasters continue to expect Bank Rate rises to be gradual — with the average central expectation reaching 2.4% in three years' time — albeit steeper than the path implied by market expectations (Section 1). The forecasts, however, assume a lower near-term path for Bank Rate than the forecasts made three months ago: the average central expectation for Bank Rate in a year's time fell, by slightly more than 20 basis points, to 0.9%. In addition, the average probability associated with Bank Rate above 1.5% at this horizon was 14% (Table 2), down from 23% in November.

### Table 2 External forecasters put little weight on Bank Rate exceeding 1.5% by 2016 Q1

Average of forecasters' probability distributions for Bank Rate<sup>(a)</sup>

Bank Rate	Probability, per cent						
	<0%	0–0.5%	0.5–1%	1–1.5%	1.5–2%	2–2.5%	>2.5%
2016 Q1	1	5	52	27	9	3	2
2017 Q1	1	4	17	22	26	18	14
2018 Q1	0	2	7	11	17	23	40

Source: Projections of outside forecasters as of 28 January 2015.

(a) For 2016 Q1, 21 forecasters provided the Bank with their assessment of the likelihood of Bank Rate falling in the ranges shown above. For 2017 Q1, 19 respondents provided probabilities for Bank Rate. For 2018 Q1, 18 respondents provided probabilities for Bank Rate. The table shows the average probabilities across respondents. Rows may not sum to 100 due to rounding.

(1) For detailed distributions of other forecasters' expectations, see 'Other forecasters' expectations' on the Bank's website, available at [www.bankofengland.co.uk/publications/Documents/inflationreport/2015/febfofe.pdf](http://www.bankofengland.co.uk/publications/Documents/inflationreport/2015/febfofe.pdf).



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**Text of Bank of England press notice of 4 December 2014**  
**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 at its meeting today voted to maintain Bank Rate at 0.5%. The Committee also voted to maintain the stock of purchased assets financed by the issuance of central bank reserves at £375 billion.

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

**Text of Bank of England press notice of 8 January 2015**  
**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 at its meeting today voted to maintain Bank Rate at 0.5%. The Committee also voted to maintain the stock of purchased assets financed by the issuance of central bank reserves at £375 billion, and so to reinvest the £4.35 billion of cash flows associated with the redemption of the January 2015 gilt held in the Asset Purchase Facility.

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

**Text of Bank of England press notice of 5 February 2015**  
**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 at its meeting today voted to maintain Bank Rate at 0.5%. The Committee also voted to maintain the stock of purchased assets 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 Thursday 12 February.

The minutes of the meeting will be published at 9.30 am on Wednesday 18 February.

## 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.

**HICP** – harmonised index of consumer prices.

**LFS** – Labour Force Survey.

**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.

**PMI** – purchasing managers' index.

**RPI** – retail prices index.

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

### Abbreviations

**BCC** – British Chambers of Commerce.

**CBI** – Confederation of British Industry.

**CCS** – Credit Conditions Survey.

**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.

**FOMC** – Federal Open Market Committee.

**FTSE** – Financial Times Stock Exchange.

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

**IMF** – International Monetary Fund.

**MPC** – Monetary Policy Committee.

**MSCI** – Morgan Stanley Capital International Inc.

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

**NIIP** – net international investment position.

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

**ONS** – Office for National Statistics.

**OPEC** – Organization of the Petroleum Exporting Countries.

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

**PPP** – purchasing power parity.

**PwC** – PricewaterhouseCoopers.

**REC** – Recruitment and Employment Confederation.

**S&P** – Standard & Poor's.

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

**WEO** – IMF *World Economic Outlook*.

### 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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ISSN 1353-6737

Printed by Park Communications Limited

