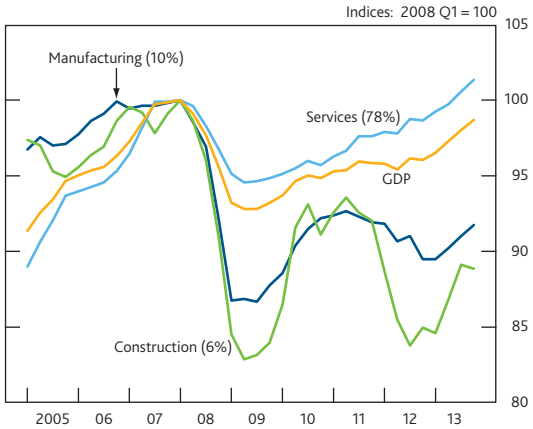
3 Output and supply

Output is estimated to have grown by 0.7% in Q4. Business surveys point to robust growth in Q1. But the recovery in output growth has not yet been associated with a sustained increase in productivity. The unemployment rate fell by more than expected to 7.1% in November, reflecting unusually strong employment growth, and is likely to reach the MPC's 7% threshold by the spring. Nevertheless, a margin of slack within the labour market remains.

Table 3.A Monitoring the MPC's key judgements

Developments expected in the November *Report*	Developments since November
Unemployment	**Much lower than expected**
• Headline LFS unemployment rate to reach 7.5% by early 2014.	• The unemployment rate was 7.1% in the three months to November.
Average hours worked	**Broadly on track**
• Average hours continuing to rise gently in 2013 H2 and 2014 H1.	• Average hours rose 0.1% in the three months to November.
Participation rate	**Broadly on track**
• Labour market participation rate broadly stable.	• Little changed.
Productivity	**Weaker than expected**
• Four-quarter growth in hourly labour productivity to rise to above 1% by early 2014.	• Whole-economy output per hour is likely to have risen by around ½% in the year to 2013 Q4.
Spare capacity	**Less spare capacity than expected**
• Indicators of spare capacity consistent with no material intensification of capacity pressures.	• Survey indicators of spare capacity pointed to less slack in Q4, suggesting that many companies were operating at close to normal levels of capacity utilisation.

Chart 3.1 GDP and sectoral output(a)



(a) Chained-volume measures. GDP is at market prices. Indices of sectoral output are at basic prices. The figures in parentheses show 2010 weights in gross value added.

The recovery in output gained momentum, but robust output growth has been accompanied by surprisingly large rises in employment. As a result, the unemployment rate has fallen towards the MPC's threshold of 7% much more quickly than expected (**Table 3.A**). Productivity growth has remained weak (Section 3.1).

The extent to which strong output and employment growth have reduced economic slack is a central judgement for the MPC. Business surveys suggest that companies were operating at close to normal levels of capacity in Q4. But a margin of labour market slack remains (Section 3.2).

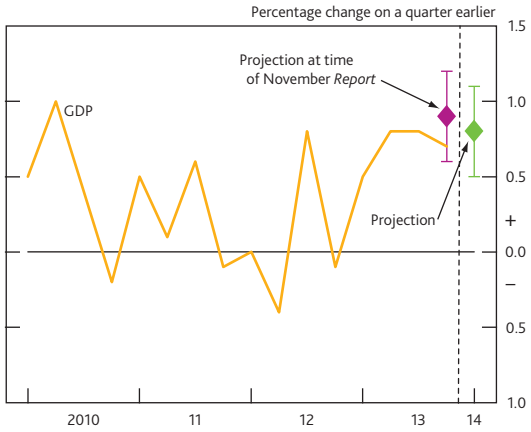
The speed at which slack is absorbed in 2014 and beyond will depend, in part, on how quickly productivity recovers. The MPC expected productivity to pick up as demand recovered, judging that many companies would be able to use their existing workforce more effectively before taking on more staff. That recovery in productivity growth has been slow to take hold (Section 3.3), causing the MPC to revise down its judgement of the likely strength of the response of productivity to higher demand. Nevertheless, it continues to expect four-quarter productivity growth to rise gradually to around its pre-crisis average rate over the forecast period (Section 5).

3.1 Recent developments in output, the labour market and productivity

Output

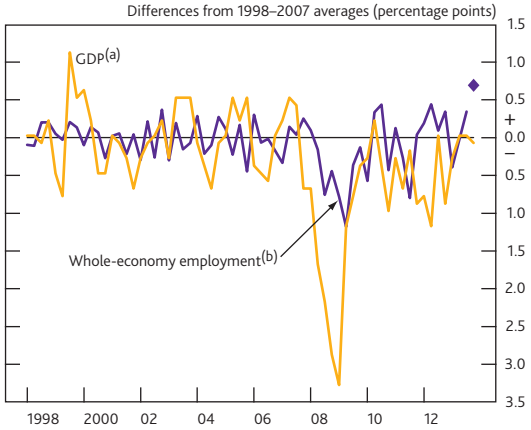
The recovery in output gained momentum during 2013. Four-quarter GDP growth reached 2.8% in Q4, its highest rate since the start of 2008, driven primarily by the service sector. But manufacturing output also boosted growth, in contrast to the drag imparted in 2012 (**Chart 3.1**). Quarterly output growth softened a little to 0.7% in Q4 from 0.8% in Q3. That was weaker than Bank staff had expected in November (**Chart 3.2**), largely reflecting an unexpected fall in construction output. Taking account of survey information, Bank staff expect Q4 growth to be revised up to around 0.9% eventually.

Chart 3.2 Bank staff projection for near-term output[a]



(a) Chained-volume measures. GDP is at market prices. 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 staff estimates of the root mean squared errors of 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, for example that shown in **Chart 5.1**, because those fans are based on the MPC's best collective judgement of the final estimate of GDP.

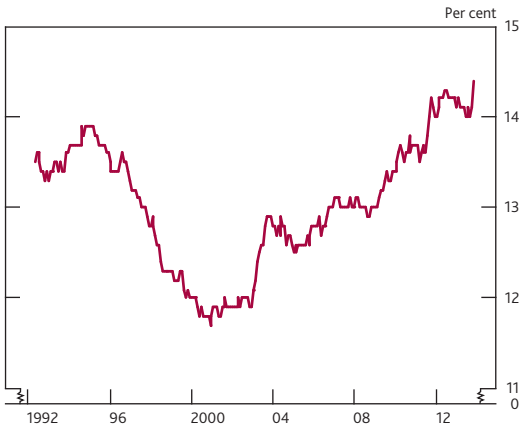
Chart 3.3 Quarterly growth in whole-economy output and employment



Source: ONS (including the Labour Force Survey).

(a) Chained-volume measure at market prices.
(b) Diamond shows change in the three months to November 2013 relative to the previous three months.

Chart 3.4 Self-employment share[a]



Source: Labour Force Survey.

(a) Percentage of LFS total employment. Rolling three-month measure. First data point is May 1992.

Output growth is expected to be robust in Q1. The Q4 weakness in construction output growth should unwind, consistent with survey indicators. Surveys also point to continued robust growth in manufacturing and services output. Overall, Bank staff expect the preliminary estimate of GDP growth in Q1 to be around 0.8%, although the historical average error around the staff projection is wide at 0.3 percentage points (**Chart 3.2**). That preliminary estimate is expected to be revised up over time; the final estimate of Q1 growth incorporated in the MPC's GDP fan chart is 0.9%.

Labour demand and productivity

Demand for labour has been surprisingly robust in recent months, and stronger than its past relationship with output would imply. Employment rose by 280,000 in the three months to November, the largest three-month rise since the series began in 1971. That rise was around four times larger than the average quarterly rise seen in the decade before the crisis, despite recent output growth being close to its pre-crisis average rate (**Chart 3.3**). Self-employment accounted for just over half of the rise in total employment, taking its share to a series high (**Chart 3.4**). Full-time and part-time employment both rose in the three months to November (**Table 3.B**). Strong demand for labour has been concentrated in the private sector; public sector employment was flat in Q3. The rise in employment in Q3 was broadly based across industries, although there were particularly strong increases in construction and real estate activities, according to Workforce Jobs data.

A corollary of the surprising strength in employment growth in 2013 was unexpectedly weak productivity growth. Quarterly productivity growth picked up in 2013 H1, but subsequently fell back. In the four quarters to 2013 Q3, whole-economy output per hour rose by just 0.1%. Productivity remained over 4% below its 2008 peak in Q3.

Official data may understate the true level of productivity; the MPC's backcast suggests that the level of GDP in 2013 Q3, and hence productivity, could eventually be revised up by 0.5%. But those expected revisions are small compared with the unexpected weakness in productivity and are concentrated in 2011 and 2012, such that productivity growth in the first three quarters of 2013 is expected to be broadly unchanged from current estimates. Based on the preliminary estimate of GDP, and the available labour market data and surveys, productivity is likely to have been broadly flat in Q4. Bank staff project a rise of around ½% in the four quarters to 2014 Q1. Section 3.3 discusses the factors influencing the prospects for productivity beyond Q1.

Unemployment and labour supply

Unemployment has fallen much faster than expected in the November *Report*, driven by strong labour demand. The Labour Force Survey (LFS) unemployment rate fell to 7.1% in

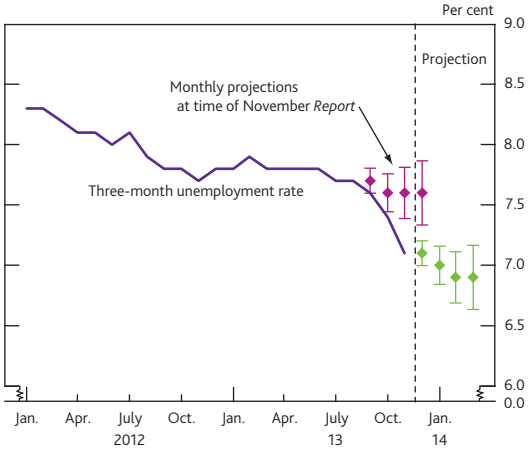
Table 3.B Employment and participation

	Averages[a]		2013			
	1998–2007[b]	2012	Q1	Q2	Q3	Nov.[c]
Employment[d]	69	151	-43	69	176	280
Full-time employment[d]	49	102	11	31	157	222
Part-time employment[d]	21	49	-53	38	19	59
Private sector employment[d][e]	52	225	40	102	246	n.a.
Participation[f]	63.0	63.4	63.5	63.5	63.6	63.6

Source: ONS (including the Labour Force Survey).

(a) Quarterly averages.
(b) Unless otherwise stated.
(c) Three months to November.
(d) Quarterly changes, thousands, except for the final column, which shows changes in the three months to November 2013 relative to the previous three months.
(e) Average is for 1999 Q2–2007.
(f) Percentage of the 16+ population.

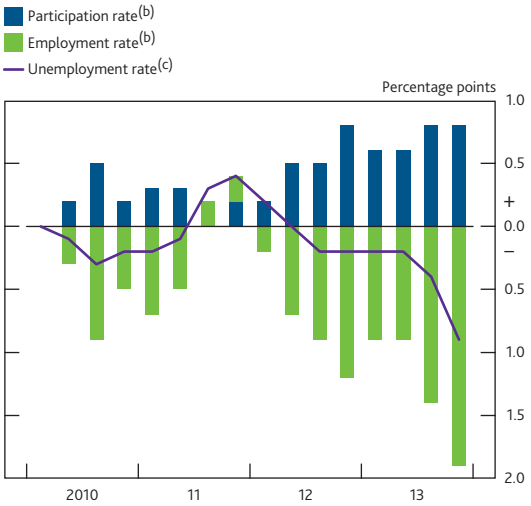
Chart 3.5 Bank staff projection for the near-term headline LFS unemployment rate[a]



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 2013 at the time of the November *Report*. The green diamonds show the current staff projections for the headline unemployment rate for December 2013, and January, February and March 2014. The bands on either side of the diamonds show uncertainty around those projections based on staff estimates of root mean squared errors of past forecasts for the three-month LFS unemployment rate.

Chart 3.6 Contributions to the change in the unemployment rate since 2010 Q1[a]



Sources: Labour Force Survey and Bank calculations.

(a) 2013 Q4 is proxied using data in the three months to November.
(b) Percentage of the 16+ population.
(c) Percentage of the 16+ economically active population. May not equal the sum of its components due to rounding.

the three months to November, from 7.7% in the three months to August, whereas Bank staff had projected a much smaller fall to 7.6% (**Chart 3.5**). That 0.5 percentage point discrepancy was around twice as large as the historical average error around the staff projection. The headline LFS rate is projected to have remained at around 7.1% in December.

Unemployment would have fallen by more in recent years if rising employment had not been partially accounted for by increased labour force participation (**Chart 3.6**). That has in part reflected increased participation rates among older people, which could be related to rising longevity and to lower savings income as a result of the financial crisis. Other factors, such as changes to government benefits and the squeeze on household incomes in recent years (Section 2), are also likely to have encouraged more people to seek work.(1) The factors contributing to a rising participation rate in recent years have more than offset demographic trends that on their own would have pulled down the participation rate significantly. Participation is expected to rise a little further in early 2014.

Further falls in unemployment are likely in early 2014, as employment is likely to continue to rise by more than participation. A range of survey measures of employment intentions rose in Q4 and suggest strong growth. Vacancies also increased further. And the claimant count measure of unemployment continued to fall in Q4, albeit at a slightly slower pace than in Q3. The Bank staff projection for the headline LFS unemployment rate in Q1 is 6.9%, significantly lower than in the November *Report*, and below the MPC's 7% threshold (**Chart 3.5**).

3.2 Indicators of spare capacity

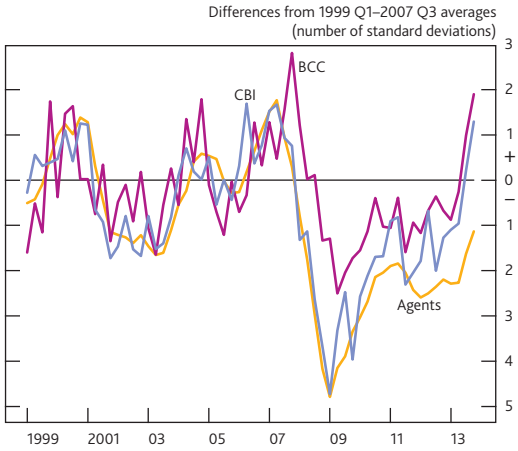
The balance between demand and supply is an important determinant of the degree of inflationary pressure. A key judgement for the MPC is the extent to which that balance has changed, given strong output and employment growth.

Slack within companies

Surveys suggest that the margin of spare capacity within companies narrowed in 2013 such that companies were, on average, operating at close to normal levels of capacity utilisation (**Chart 3.7**). The interpretation of these survey measures is, however, not straightforward. Companies may have short-term notions of capacity in mind when responding to such surveys, ignoring, for example, mothballed capacity, which may require some spending to bring back into use. Moreover, while these surveys suggest that spare capacity within companies has, on average, fallen to more normal levels, most do not ask companies to quantify either current or 'normal' levels of capacity utilisation. The exception is the CBI

(1) Developments in the participation rate since the recession are discussed in more detail in the box on page 27 of the May 2013 *Report*.

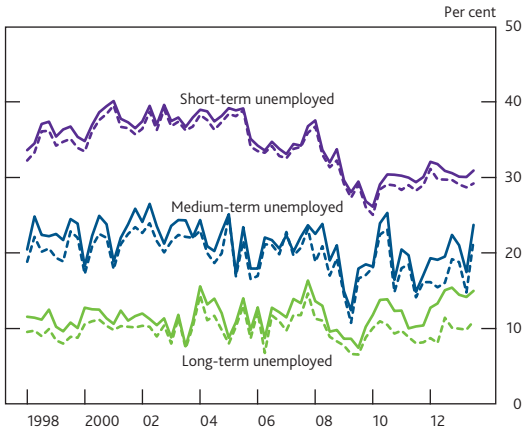
Chart 3.7 Survey indicators of capacity utilisation[a]



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 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.

Chart 3.8 Flows from unemployment to employment, including and excluding government-supported training schemes[a]



Sources: Labour Force Survey and Bank calculations.

(a) Short-term is defined as less than six months, medium-term is defined as six to twelve months and long-term is defined as more than twelve months. For each group of short, medium and long-term unemployed, the chart shows flows into LFS employment divided by the number of people who were unemployed for that length of time in the previous quarter. The dashed lines show those flows excluding participants of government-supported training and work placement schemes. Based on LFS microdata that have been seasonally adjusted by Bank staff. Data are to 2013 Q3 and based on the 16–64 population.

manufacturing survey, which suggests that manufacturers are currently operating with a capacity utilisation level of 82%, broadly in line with the pre-crisis average. Overall, while it is difficult to map these surveys precisely into capacity utilisation, it is unlikely that spare capacity within companies is putting much pressure on inflation in either direction.

Labour market slack

The fall in unemployment probably overstates the fall in labour market slack — the scope for total hours worked to increase without pressure on pay. That scope depends on: how far unemployment is above its medium-term equilibrium rate; whether people are working fewer hours than they would like; and whether some potential employees have been temporarily discouraged from seeking work.

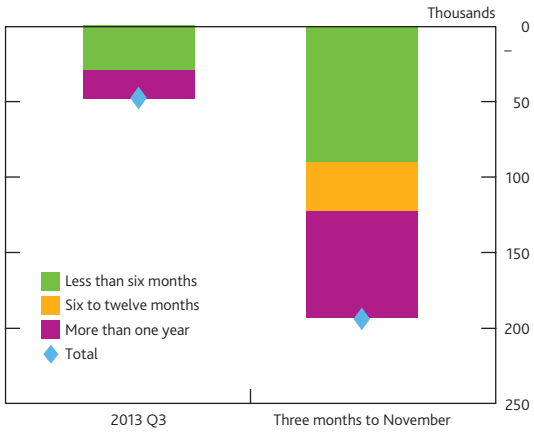
Unemployment probably remains above its medium-term equilibrium rate suggesting scope for it to fall without significant pressure on pay. Bank staff's estimate of the equilibrium rate depends on the composition of unemployment and so varies over time.(1) A key determinant is the proportion of the unemployed who have been out of work for some time. They are likely to exert less downward pressure on wages than those who have been out of work for only a short while. That is because people typically become more disconnected from the labour market the longer they are unemployed. As a result, the probability of them finding a job decreases. Based on the historical average rates at which different groups of the unemployed move into jobs, those who have been out of work for over a year have been around a third as likely to find work as those unemployed for less than six months (**Chart 3.8**). The rise in long-term unemployment in 2009 was therefore associated with a rise in the medium-term equilibrium rate to around 6½%.

More recently, longer-term unemployment has fallen back: around half of the fall in total unemployment between June and November 2013 was among the long and medium-term unemployed (**Chart 3.9**), reducing Bank staff's estimate of the medium-term equilibrium rate to 6%–6½%. Longer-term unemployment, and hence the medium-term equilibrium unemployment rate, is likely to continue to fall as demand recovers.

There is uncertainty about the medium-term equilibrium unemployment rate. The rate at which the long-term unemployed find work has risen since mid-2009 (**Chart 3.8**). The underlying rise may be overstated, in part, as it reflects participation in government-supported training and work placement schemes, which provide only temporary employment. But even excluding those moving onto such schemes, the transition rate of the long-term unemployed,

(1) For more information on equilibrium rates of unemployment, see the box on pages 28–29 of the August 2013 *Inflation Report*.

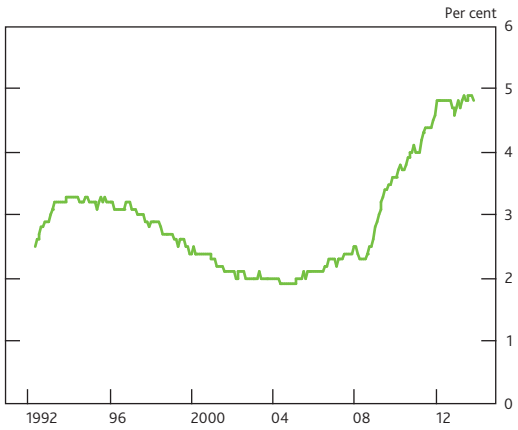
Chart 3.9 Contributions to the fall in unemployment since 2013 Q2 by duration[a]



Source: Labour Force Survey.

(a) Change in LFS unemployment divided into those who have been unemployed for less than six months, between six and twelve months, and more than one year.

Chart 3.10 Part-time employees who could not find full-time work[a]



Source: Labour Force Survey.

(a) Number of people reporting to the LFS that they are working part-time because they could not find a full-time job, as a percentage of LFS total employment. Rolling three-month measure. First data point is May 1992.

Table 3.C Average weekly hours worked and a measure of 'desired' hours

	Averages[a]			2013			
	1998–2007[b]	2011	2012	Q1	Q2	Q3	Nov.[c]
Average hours	32.4	31.6	31.9	32.0	32.0	32.1	32.2
Number of hours that the currently employed would like to work, on average[d]	32.1	32.1	32.4	32.7	32.6	32.7	n.a.

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

(a) Quarterly averages.
(b) Unless otherwise stated.
(c) Three months to November.
(d) Actual hours worked adjusted for the difference between actual and desired working hours of those in work. Based on the methodology set out in Bell, D and Blanchflower, D (2013), 'How to measure underemployment?', *Peterson Institute for International Economics Working Paper No. 13-7*. Based on LFS microdata that have been seasonally adjusted by Bank staff. Average since 2001 Q2.

relative to that of the short-term unemployed, remains above its historical average. That suggests that the long-term unemployed may be exerting more downward pressure on wages than they did in the pre-crisis decade. However, the transition rate of the short-term unemployed into work is below its historical average, which could indicate that they have been searching for employment less intensively and are exerting less downward pressure on wages than before the crisis.

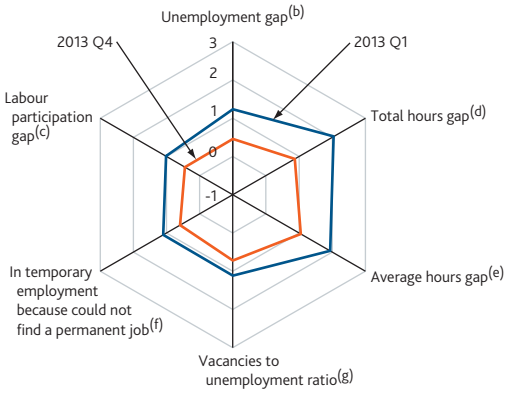
There is probably also scope for companies to increase the hours their staff work without significant pressure on pay. Average hours worked have increased fairly steadily since the 2008/09 recession for both full-time and part-time employees. At face value that suggests less slack. But an unusually high proportion of part-time employees still say that they would prefer a full-time job (**Chart 3.10**). And, according to LFS microdata, the number of hours that the currently employed would like to work, on average, has also risen (**Table 3.C**). It is unclear how far these rises in 'desired' hours reflect an increase in the medium-term equilibrium level of average hours. For example, it is likely that some of the rise in desired hours will unwind as the squeeze on household real incomes eases (Section 4). Bank staff judge that much of the rise in these indicators of desired hours reflects a rise in the medium-term equilibrium level of average hours worked, and have therefore revised up their assessment of that medium-term equilibrium level since August.

Other measures also suggest that slack remains, despite the recent tightening of the labour market (**Chart 3.11**). For example, the proportion of temporary staff in the LFS reporting that they are in such employment because they could not find a permanent job remains above pre-crisis levels. And vacancies remain low relative to unemployment. The MPC also judges that the participation rate remains slightly below its medium-term equilibrium level, as some potential employees have been temporarily discouraged from looking for work.

In contrast, surveys of recruitment difficulties point to tightness in some parts of the labour market. As labour demand increases and the pool of unemployed shrinks, it can become more difficult for employers to recruit staff with the required skills. Recruitment difficulties have become particularly apparent in some parts of the construction sector, according to contacts of the Bank's Agents. More generally, survey indicators suggest that recruitment difficulties and skills shortages increased in 2013 and pointed to a degree of tightness around pre-recession averages in Q4.

Overall, the MPC judges that a margin of slack remains, concentrated in the labour market and largely reflecting, in roughly equal parts, unemployment and average hours being away from their medium-term equilibrium levels. That margin is equivalent to around 1%–1½% of GDP: the amount that it is assumed would be produced were unemployment to fall and

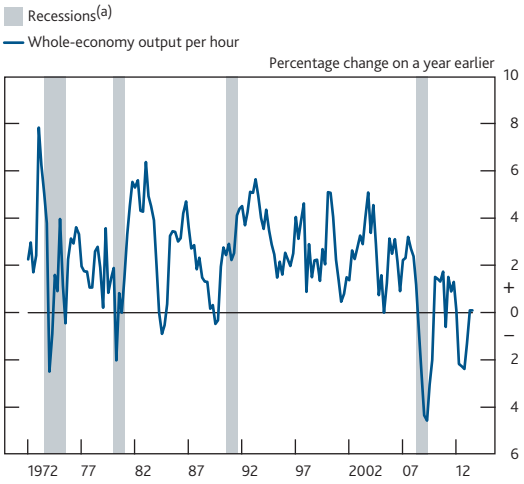
Chart 3.11 Selected indicators of labour market slack[a]



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

(a) The chart shows the differences, in number of standard deviations, between the values of these indicators and their 1992–2007 averages. The orange line is based on ONS data for the three months to November 2013 and Bank staff estimates for 2013 Q4. The blue line is based on ONS data and Bank staff estimates for 2013 Q1.
(b) Difference between the unemployment rate and Bank staff's central estimate of the medium-term equilibrium unemployment rate.
(c) Difference between Bank staff's estimate of the trend participation rate and the participation rate.
(d) Percentage difference between total weekly hours worked and Bank staff's estimate of trend total weekly hours worked. The standardised data have been multiplied by -1 so that a higher number indicates more slack. Trend total weekly hours worked has been revised up since this chart was first published in August 2013 in *Monetary policy trade-offs and forward guidance*, reflecting an upward revision to trend average hours worked per week.
(e) Percentage difference between average weekly hours worked and Bank staff's estimate of trend average weekly hours worked. The standardised data have been multiplied by -1 so that a higher number indicates more slack. This measure was not included in the version of this chart that was published in August 2013.
(f) Number of people reporting to the LFS that they are in temporary employment because they could not find a permanent job, as a percentage of the number of people in temporary employment. Data begin in 1992 Q2.
(g) Number of UK vacancies (excluding agriculture, forestry and fishing) divided by LFS unemployment. Data on UK vacancies are only available from 2001 Q2 onwards. Prior to that, UK vacancies have been projected backwards using changes in the number of vacancies at UK job centres. Data on vacancies at UK job centres for 2001 Q2 have been estimated using data for April 2001. The standardised data have been multiplied by -1 so that a higher number indicates more slack.

Chart 3.12 Labour productivity



Source: ONS (including the Labour Force Survey).

(a) Recessions are defined as at least two consecutive quarters of falling output (at constant market prices). The recessions are assumed to end once output began to rise, apart from the 1970s where two separate occasions of falling output are treated as a single recession.

average hours worked to rise to their equilibrium levels, assuming that the newly employed are as productive as current staff.

3.3 Prospects for productivity

Productivity growth has been unprecedentedly weak since the 2008/09 recession (**Chart 3.12**). That weakness continued into 2013, despite strong growth in demand and in contrast to the MPC's expectations of a gradual pickup.

It is not clear what has constrained productivity growth in recent years. But given the continued weakness in productivity, the MPC judges that the extent to which productivity growth will rise as a direct result of stronger demand growth is less than thought likely in August. In particular, to the extent that weak productivity reflected businesses retaining staff who would be costly to replace, or needing a minimum level of staff to keep operating, that part of the weakness should have unwound as demand picked up. Nevertheless, there are other reasons to expect productivity growth to pick up as the recovery progresses. For example, as demand increases, some companies may be able to switch staff from winning business towards producing output. More generally, as production increases, employees will become more experienced and may be better able to make efficiency gains.

Productivity growth may also pick up as the lingering impact from the aftermath of the financial crisis gradually fades. Productivity growth following the crisis may have been held back by weak business investment growth and by impediments to the efficient reallocation of capital and labour from less productive businesses to more productive ones. Both of those factors are likely to have been caused, at least in part, by tight credit conditions and elevated uncertainty about the demand outlook. More recently, credit conditions and uncertainty have eased, although how far and how quickly that improvement feeds into higher productivity is uncertain. Evidence on the extent of reallocation between companies is only available with a considerable delay.(1) Investment did rise in Q3 and is expected to rise further in coming quarters (Section 2). But it will take time for that to boost productivity, as investment is small relative to the amount of existing capital.

The MPC continues to expect productivity growth to pick up gradually, although there is considerable uncertainty around when that rise will occur and how large it will be (Section 5). The box on pages 46–47 presents two scenarios illustrating the potential impact on the wider economy if productivity picks up more or less quickly than in the MPC's central judgement.

(1) Company-level data suggest that productivity growth was constrained by reduced reallocation in 2010 and 2011 compared with earlier years. Data for 2012 have only very recently become available. See page 27 of the August 2013 *Report* for more details.