

## The UK long-term growth outlook

### Key points

- The last cycle from 1997H1 to 2006H2 saw robust growth in potential output of 2.9% a year. This was the product of a combination of exceptional factors, including strong net inflows of migrants, a decline in the NAIRU, substantial capital deepening and a shift towards high value-added sectors such as financial services. However, we expect growth of just 1.8% a year between 2006H2 and 2018H2; this is partly due to the legacy of the recession, but also because the influence of these exceptional factors will ebb away. Even after 2011, when the recovery has become entrenched, we project growth of just 2.3% a year.
- Strong migration flows were a key theme of the last cycle, but even prior to the recession there were signs that the strong inflows of migrants were cooling and the deterioration in employment prospects over the past two years will further dampen the attractiveness of the UK as a destination for migrant labour. The official projections look far too strong, particularly given that with A8 migration projected to fall back to zero over the longer term, net inflows must increase from elsewhere to compensate. We expect net inflows to settle at 90,000 per year from 2015, compared with the official projection of 180,000 a year.
- Changes in the age profile of the population are also likely to dampen potential output growth over the current cycle. The current trend of increasing activity rates is likely to continue, particularly amongst women and older people, and the state pension age for women is gradually being increased to 65. However, the sheer scale of the upward shift in the age profile of the population, particularly into the 65-74 and 75+ cohorts where participation is so much lower than the groupings just below, will ensure that the labour supply grows at just over half the rate of the last cycle.
- Empirical evidence suggests a link between shifts in aggregate demand and changes in the NAIRU through hysteresis. The human capital of the long-term unemployed deteriorates as their skills are eroded, making it much harder for them to re-enter the labour market. We assume that the increase in unemployment over the past couple of years will drive an increase in the NAIRU from 5% to 6% and though this is likely to eventually edge down – as the long-term unemployed retrain and are incorporated back into employment – the long-term employment rate will be lower than prior to the recession.
- The last cycle was characterised by an increased contribution to growth from the expansion of the capital stock. However, business investment has fallen by 26% over the last two years, while studies suggest that recessions typically trigger premature capital scrapping as more companies go out of business. Though a strong corporate balance sheet position should underpin a robust pickup in business investment, once the recovery has become entrenched and the spare capacity has been used up, the damage has already been done and we expect a much weaker contribution from capital deepening.
- The sectoral focus of the recession also has the potential to damage productivity growth. In particular, greater regulation and risk aversion will ensure that the economy can no longer rely on the financial services sector to contribute the exceptional rates of growth that it did over the last cycle.
- The period after 2018 is likely to see potential output growth slow further, as the effects of an ageing population progressively reduces the contribution of labour supply.

## Introduction

In January 2009, in the depths of the recession, we published an article<sup>1</sup> which argued that the events since mid-2007 would not only result in a sharp short-term decline in output, but would damage growth prospects for the duration of the cycle. Now that the UK economy is in the early stages of recovery – after the longest and deepest recession since records began in the 1950s – we revisit the subject of the long-term outlook.

This article adopts the same framework as the original article, looking at the factors underpinning potential output growth in order to assess the prospects for the UK economy over course of the current cycle.

## A framework for analysing potential output growth

Potential output is the amount that the economy can produce sustainably over time without causing inflationary pressures to build. It is a function of the resources available and the way in which they are utilised, so varies according to changes in the working age population, employment rate, average hours worked and output per hour worked, i.e. productivity.

There are a range of views on how best to estimate potential output. We use a production function approach, as this provides a framework which relates the level of potential output to contributions from factor inputs – labour and capital – and the rate of technological progress (total factor productivity). It also provides a consistent method for forecasting future growth in potential output. In the Oxford UK Model we use a Cobb-Douglas production function:

$$Y^* = A + L^\alpha + K^{(1-\alpha)}$$

where:

$Y^*$  = Potential output

$L$  = Potential labour supply, which is equal to the labour supply at the NAIRU<sup>2</sup>

$K$  = Capital stock

$A$  = Total factor productivity (TFP)

This is re-written in natural logs, with  $\alpha$  equal to 0.65:

$$\ln(Y^*) = \ln(A) + 0.65\ln(L) + 0.35\ln(K)$$

The choice of cycle dates is highly uncertain – the only solution is to use a range of economic indicators to try and discern when the economy had been operating at its potential. This would typically be a point at which inflation was relatively stable at, or close to, target and when indicators of capacity utilisation has stabilised close to long-term averages. Inspection of such data suggests that the last ‘on-trend’ point was in the period between 2004 and 2006. In its analysis the Treasury identifies 2006H2 as the being the end of the last cycle and for the purposes of this article we have adopted this for ease of comparison. Prior to this point the

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<sup>1</sup> *Oxford Economics, January 2009, “Will the recession damage UK long-term growth prospects?”, UK Economic Outlook, Volume 33, Number 1*

<sup>2</sup> *NAIRU - Non-Accelerating Inflation Rate of Unemployment. Even when the economy is operating at its long-run potential there will still be some level of frictional unemployment – this is known as the NAIRU*

Treasury identified two short cycles of four and five years, though the evidence for the existence of two such short cycles is inconclusive, so we have considered the period from 1997H1 to 2006H2 as a whole.

The cycle from 1997H1-2006H2 saw growth average 2.9%, a significant improvement on the previous cycle (2.4%). This was partly due to a stronger contribution from the capital stock, underpinned by robust business investment growth, but there was also a doubling in the contribution from the labour supply.

Contributions to potential output growth		
per cent per annum		
	1986Q2-1997H1	1997H1-2006H2
Employment at the NAIRU	0.3	0.6
Capital stock	1.0	1.3
Total Factor Productivity	1.2	1.0
Potential output	2.4	2.9

Source: National Statistics

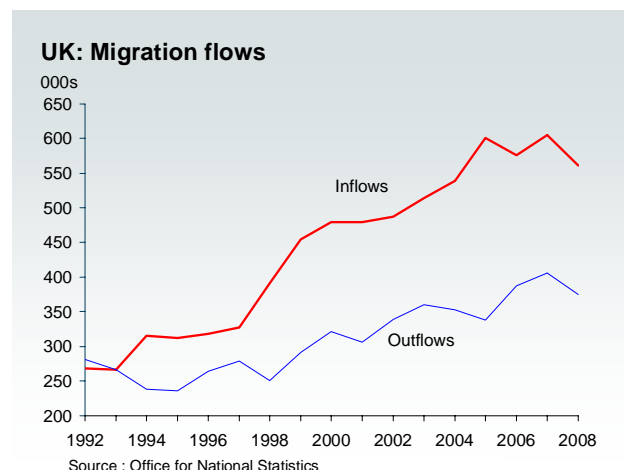
The Treasury's forecast for the current cycle assumes a loss of potential output equal to 5¼% between mid-2007 and mid-2010 to account for the impact of the global financial crisis, with potential output reverting to 2¾% a year thereafter. In our January 2009 article we questioned whether this long-term growth assumption of 2¾% was realistic and suggested that the recession would leave behind it a legacy of slower growth. We will now look in detail at the various components of potential output and assess how these are likely to develop over the course of the current cycle.

## Recent strong population growth will not be maintained...

Robust international inward migration was one of the most important factors behind the strong growth in potential output over the second half of the last cycle. Migration flows are an important cause of changes in the labour supply because the vast majority of migrants are of working age. Inward migration peaked at 605,000 in 2007, compared with 479,000 at the beginning of the last decade and though outward migration also picked up the increase was nowhere near as large.

Decomposing the inflows by area of origin – using data from the *International Passenger Survey (IPS)* – reveals two trends. Firstly, that over the first half of the last decade there was significant increase in the flow of migrants from the New Commonwealth, mainly the Indian subcontinent. Secondly, the expansion of the European Union in 2004 triggered a surge in migration from the eight accession countries<sup>3</sup>, with net long-term inflows rising from 47,000 in 2004 to 85,000 in 2007 according to the IPS.

Due to the publication lag associated with population data – the latest official migration estimates are for the year to mid-2008 and the latest IPS data runs to June 2009 – we have little concrete evidence as to the impact of the recession on migration flows. However, what we do have suggests there has been a significant



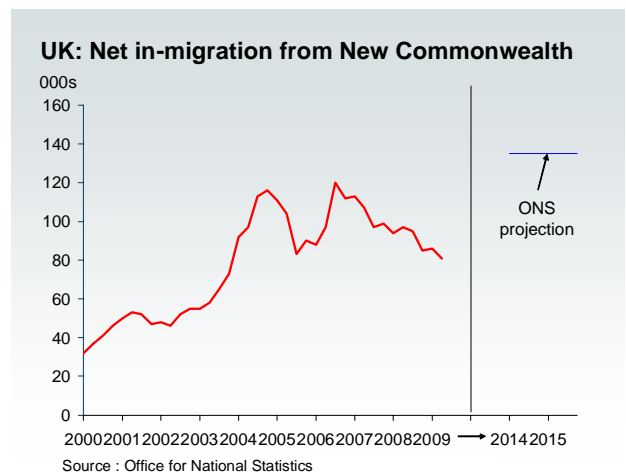
<sup>3</sup> A8 countries are Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia

slowdown in net inflows. The IPS reported a net inflow of 147,000 in the year to June 2009, compared with peak flows of around 220,000. And the drop in inward migration from EU accession countries has been even starker, with applications to the Worker Registration Scheme falling from almost 228,000 in 2006 to just over 106,000 in 2009.

There is strong empirical evidence to link migration with employment growth and the recession is forecast to have resulted in almost a million job losses, with sectors employing significant amounts of migrant workers – such as construction, retail and hospitality – suffering particularly heavy losses. Some of the A8 countries, most notably Poland, have performed much better than the UK over the past two years, while the weakness of the pound has also reduced the UK's attractiveness. As a result, we expect inward migration flows to have weakened further through the 2009-10 period.

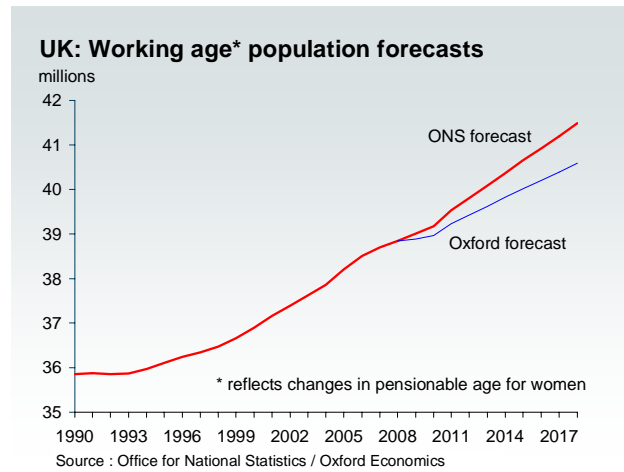
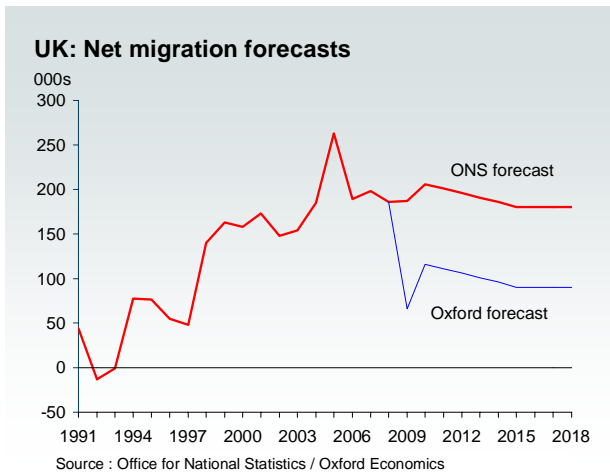
The official population projections continue to anticipate a strong rebound in inward migration as the economy recovers. Net in-migration is projected to average more than 190,000 a year until 2014 and then 180,000 per year thereafter, not far short of the record pre-recession levels. Given that much of the upturn post-2004 had been connected to A8 accession, the expectation that inflows would continue at this level appears optimistic, particularly given that the ONS have made clear that they now expect net A8 migration to be zero over the long-term. The expectation of zero A8 migration looks realistic, given that living standards in Eastern Europe continue to catch up with the west and that other European countries are due to relax their employment rules for migrants from the A8 countries from 2011, bringing them into line with the UK.

However, this means that net inflows must increase from elsewhere to compensate. The breakdown of the projections by country of origin suggests that the bulk of the migrants are expected to come from the New Commonwealth, yet over the past decade net inflows have never reached the level of 130,000 a year which is projected for the future. There appears to be no appetite to compensate for falling levels of A8 migrants by allowing higher migration from elsewhere, with the government having introduced a points-based system for migrants from outside of the European Union, tightening entry requirements for all but the most highly skilled. And the rhetoric from the main political parties suggests that future legislation is more likely to involve tighter, rather than looser, immigration policy.



We therefore expect net migration to slow to 90,000 a year from 2015, resulting in a population shortfall of 930,000 by 2018 compared with official projections. We estimate that on average 95% of migrants are of working age, so this shortfall will have significant implications for the size of the workforce. We estimate that the working age population<sup>4</sup> will be 40.5 million in 2018, almost 900,000 lower than the ONS projections. This will mean that population growth will contribute 0.4% a year to potential GDP growth in the current cycle – a little lower than the previous cycle (0.6%) and well below the Treasury's assumption (0.8%).

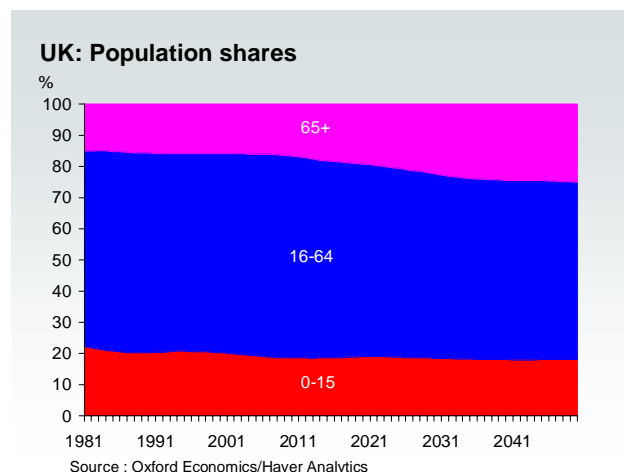
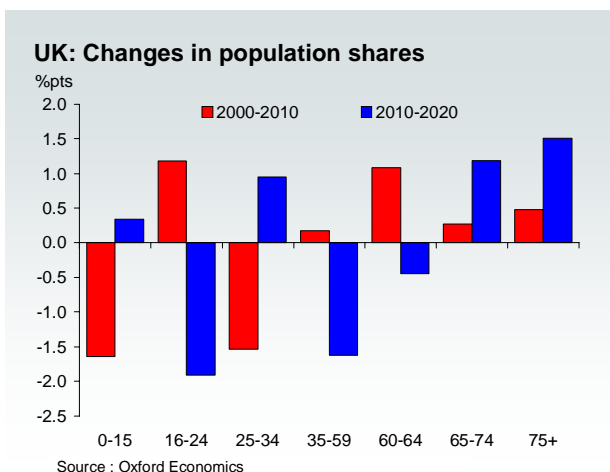
<sup>4</sup> Estimates of working age population reflect changes in the state pension age for women



## ...while the changing age structure also has important implications

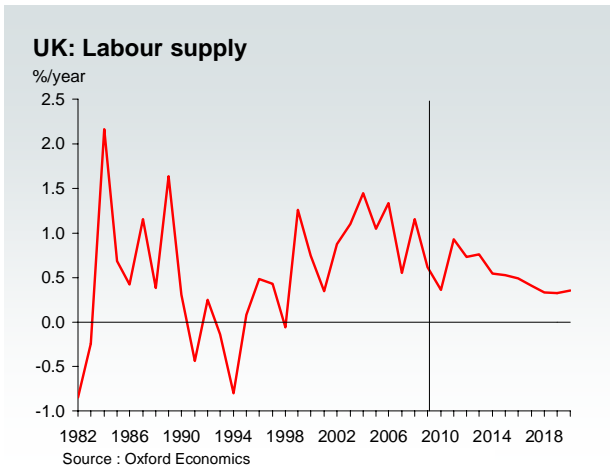
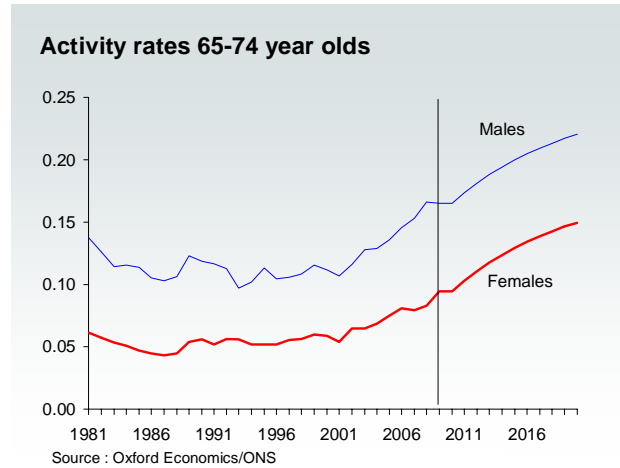
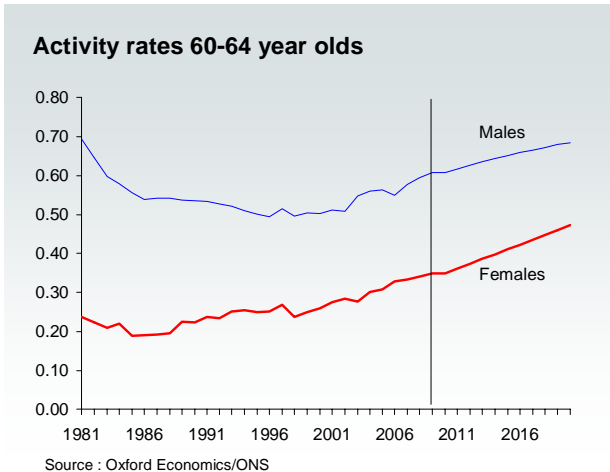
It is not just the level of population growth that is important to the UK's growth outlook, but also its age profile. With the vast majority of migrants being of working age, the strong inward migration trends of the past decade have bolstered the shares of the age groupings between 16 and 64, at a time when life expectancy had continued to rise.

However, this support will ebb away as the next decade develops. The age profile of the population is shifting upwards and by 2020 we expect the over-65 cohort to account for 19.3% of the population, compared with 16.6% this year. With migration flows likely to be much weaker than before, this suggests that the proportion of the population aged between 16-64 will drop back from 64.8% to 61.7%. Indeed our calculations suggest that a progressive increase in life expectancy will mean that this process continues over the following years, with the 16-64 grouping accounting for just 56.8% of total population by 2050, some 7% lower than in 2000.



One of the features of the last cycle was that the drag from a shift upwards in the age profile of the population was mitigated by a pick-up in the rate of participation amongst women and older workers, both in terms of workers delaying their retirement and pensioners returning to part-time work. The increased participation amongst women and older people is likely to have been a reflection of the variety of part-time jobs on offer, particularly as the service sector has taken on ever-increasing importance. But the increase in activity amongst older workers was also a response to the pension crisis and the consequent deterioration of retirement prospects.

With the coming decade set to see a further upward shift in the age profile, it will be crucial that participation rates continue to rise amongst these groups. Policy will give the process a helping hand, with the state pension age for women increasing from 60 to 65 between April 2010 and April 2020, though the female activity rate in the 55-59 age cohort – the one immediately before the current state pension age – is only 80% of the male rate, which suggests that the state pension age is only one of a number of factors which determine female participation. The factors which underpinned the recent increase in participation towards the top end of the age scale will continue to exert an influence, but the drop off in activity rates around the state pension age is steep and a number of studies, notably Heywood & Siebert (2008)<sup>5</sup>, point to the existence of regulatory barriers to increasing participation amongst older workers.



Our forecast shows the cyclical decline in activity rates at the lower end of the age profile being reversed as the economy recovers. At the same time we expect the gradual upward climb in all female cohorts to continue, particularly 60-64 year olds as the state pension age increases, while the increase in activity amongst older male workers is projected to persist. However, the sheer scale of the upward shift in the age profile of the population, particularly into the 65-74 and 75+ cohorts where participation is so much lower than the groupings just below, will ensure that growth in the labour supply slows to 0.5% a year from 2010-20, compared with 0.9% a year over the last decade.

Beyond this point the progressive upwards shift in the age profile means that labour supply growth is likely to continue to slow, despite the staged increase in the state pension age to 68 by 2046, and in the decade from 2041-2050 we expect the labour supply to grow by just 0.2% a year.

## Hysteresis effects will push up the NAIURU

The sharp decline in the NAIURU in the last economic cycle was a significant factor behind the rapid growth in potential output. The ongoing feed through of the benefits of the Thatcher labour market reforms of the 1980s in increasing labour market flexibility was one cause of this, but there is also empirical evidence – notably

<sup>5</sup> Heywood, S.J. & Siebert, W.S, 2008, 'Understanding the Labour Market for Older Workers', IEA Discussion Paper No. 23

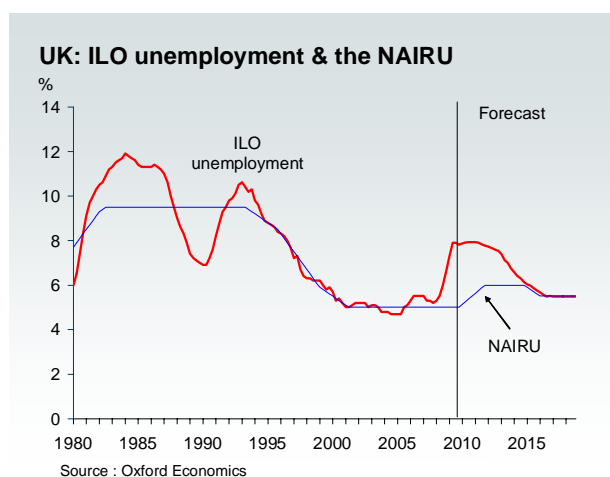
Blanchard & Summers (1986)<sup>6</sup> and Ball (2009)<sup>7</sup> – that links changes in the NAIRU to shifts in aggregate demand through hysteresis. Therefore, while a period of steep declines in joblessness dragged the NAIRU down towards the actual unemployment rate over the last cycle, we expect the deep recession and consequent increase in unemployment over the past two years to push up the NAIRU.

Ball argues that the degree to which hysteresis occurs is a function of the time it takes for output to return to its previous trend, with longer periods of weak growth in aggregate demand yielding larger increases in the NAIRU. In previous occurrences the depth and duration of the recessions have largely been a function of the strength of the monetary policy response, but despite the rapid and aggressive policy response this time around, output has fallen more than 7% below trend and we expect it to take much longer to regain previous trend levels than after previous recessions. As a result, we expect this to cause a shift upwards in the NAIRU.

The hysteresis effects are concentrated on what happens to the long-term unemployed. The loss of jobs in a recession adds to the stock of long-term unemployed persons and this group typically finds it difficult to re-enter the labour market. In terms of labour demand this is due to the deterioration in their human capital, with the lack of a job causing their skills to be eroded, which means that when labour demand recovers employers prefer to bid up the wages of existing workers rather than incur the time and costs associated with retraining the long-term unemployed. On the labour supply side there is evidence that the long-term unemployed sometimes adapt to being unemployed, with the low likelihood of finding a job leading them to make little actual effort to look for work, while still technically fulfilling the criteria for being unemployed. In this cycle there are likely to be additional pressures, with lower net migration making it harder to fill the type of low paid jobs that migrants have typically taken up over the past decade, while the impending fiscal retrenchment and the consequent requirement for jobs to shift from the public to the private sector also points to a mismatch between skills and opportunities.

Given that unemployment looks to have peaked at a lower level than we – and other commentators – previously expected, the rise in long-term unemployment and, therefore, the NAIRU will be more muted than it might have been. And given that the increase in unemployment has been more concentrated on the younger age groups than in previous recessions, we are hopeful that a proportion of the long-term unemployed will eventually be able to retrain and re-enter the labour market at a later date, thus causing the NAIRU to edge downwards after a number of years.

The OECD expects the NAIRU to rise to around 6% by the end of 2011 and we concur with this view. We then expect the NAIRU to edge back down to 5.5% over the second half of the decade; the labour market recovery will be more gradual than those after previous recessions, reflecting the unusually sharp drop in productivity and significant degree of labour hoarding to date, so it will take some time for the labour market to begin re-integrating the long-term unemployed. Because of the higher NAIRU, the long-run employment rate will then level out at a rate a little lower than the average over the past decade. This means that over the period from the end of the last cycle in 2006H2 to the end of 2018, changes in the employment rate will act as a drag on economic growth, reducing potential output by 0.2% a



<sup>6</sup> Blanchard, O.J. & Summers, L.H., 1986, 'Hysteresis and the European unemployment problem', *NBER Macroeconomics Annual 1986, Volume 1*

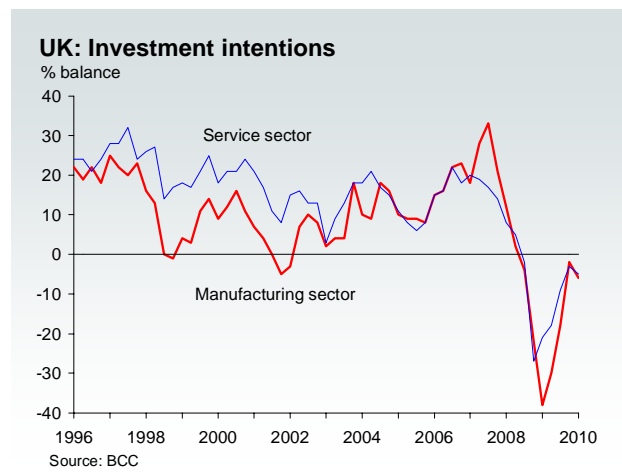
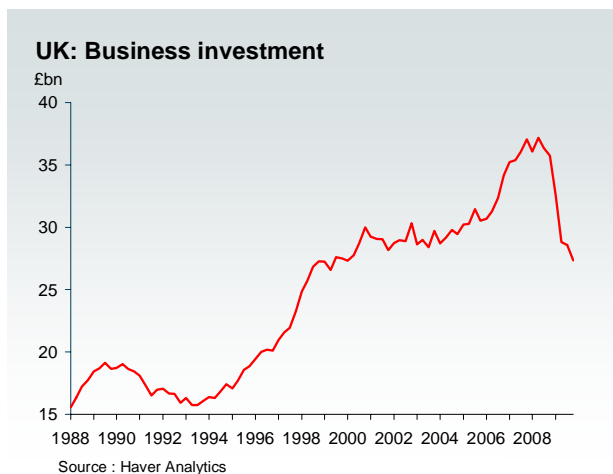
<sup>7</sup> Ball, L.M., 2009, 'Hysteresis in unemployment: old and new evidence', *NBER Working Paper 14818*

year, in contrast to the +0.4% contribution it made in the last cycle.

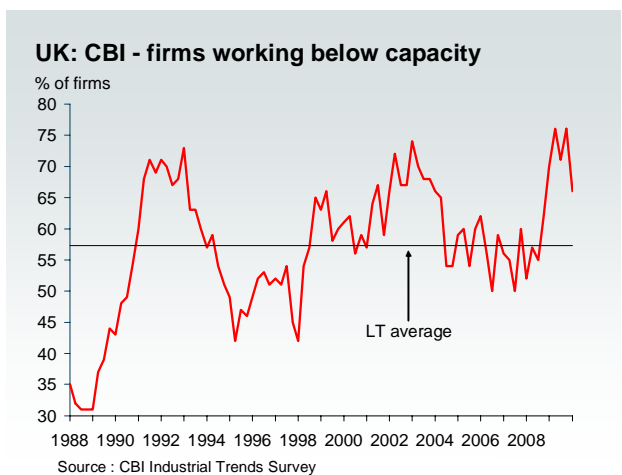
A persistent decline in average hours worked has acted as a drag on growth prospects in each of the last two cycles, reflecting the movement from full-time to part-time working. The pace of decline peaked in the first half of the last cycle but has slowed in the period since and we concur with the Treasury's assumption that hours worked will continue to fall at this slower pace over the current cycle.

## Falling business investment has slowed the growth in the capital stock

The last cycle was characterised by an increased contribution to growth from the expansion of the capital stock – i.e. capital deepening – with business investment growing at a rate of close to 5% a year between 1997H1 and 2006H2. However, the financial crisis has had a significant impact on both the funding of, and incentives for, investment. The credit restrictions have both limited the ability of firms to borrow to fund investment and also forced them to hoard cash, further limiting the funds available for capital projects. Meanwhile the sharp decline in output has severely dented incentives to invest. By 2009Q4 business investment was 26% below its early-2008 peak and responses to questions on investment intentions in the CBI and BCC surveys suggest that investment is likely to be no better than flat over the coming year. Previous studies have suggested that recessions also tend to coincide with a rise in premature capital scrapping, caused by an increase in the number of firms going out of business, though the literature also suggests that these effects are not captured particularly well in official data on the capital stock.



In the short-term the investment pickup is likely to lag the wider recovery, as it usually does at this time of the cycle, because of the significant amount of spare capacity that has built up over the past couple of years. The CBI Industrial Trends Survey shows that although the proportion of firms working below capacity has dropped back in recent quarters, it remains well above the average of the past twenty years. With little need to invest to increase capacity at present, this will delay the upturn in capital spending. However, the experience of past recessions shows that investment does usually pick up strongly once the recovery has become entrenched and we expect that to be the case this time too, particularly given that the financial position of the corporate sector has remained so strong



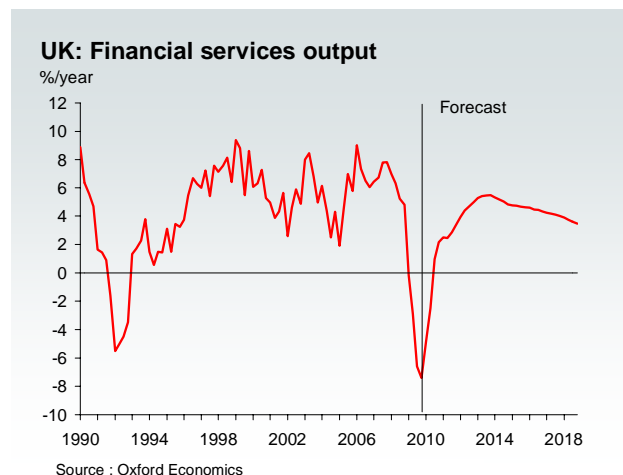
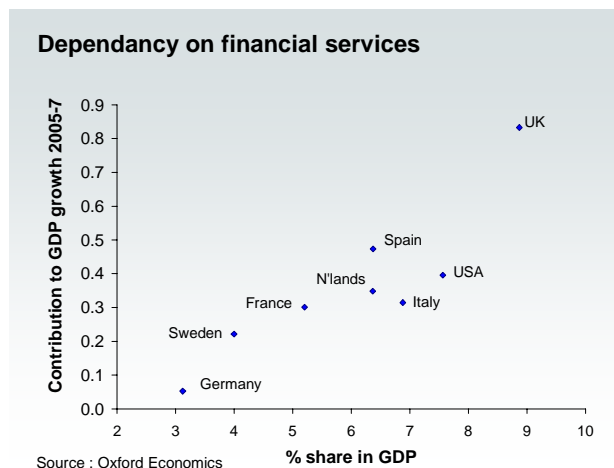


throughout the recession. Nevertheless, in terms of the contribution of capital deepening to potential GDP growth over the current cycle, the damage has already been done over the past couple of years and therefore we expect a much weaker contribution from capital deepening over the current cycle.

## Structural changes are also likely to dampen growth potential

The sectoral focus of the recession also has the potential to damage productivity growth. A significant role in the strong performance over the last cycle was played by the financial services sector, which achieved output growth of just over 6% a year – more than double that of the economy as a whole – and was supported by the growth of a range of associated professional service sectors (e.g. legal, accountancy and consultancy). Financial liberalisation and the rapid expansion of credit markets underpinned significant structural change as the UK economy shifted towards financial and business services, while moving away from manufacturing. This trend accelerated in the years immediately ahead of the credit crunch and by 2007 financial services accounted for a much larger share of GDP in the UK (9%) than in any other major industrial nation.

However, financial services output fell by 7.4% peak-to-trough during the recession and the ramifications of the financial crisis, in terms of greater regulation and risk aversion, mean that the financial services sector is likely to grow at a much slower rate over the coming decade. Our forecast shows output growth in the sector averaging 3.5% a year over the current cycle, compared with 6% in the last cycle. This is particularly important given that output per job in the financial services sector is more than double the whole economy average.



There will also be important spillover effects into other sectors with strong links to financial services. Business services, in particular, was one of the fastest growing sectors over the last cycle, but the prospects for areas such as legal and accountancy – which have a high degree of dependence on financial services – will be dampened by slower growth in the financial sector. With the recession permanently damaging these high value added sectors it will limit the ability of the economy to raise productivity growth to offset the weaker contribution from population and the drag from lower employment.

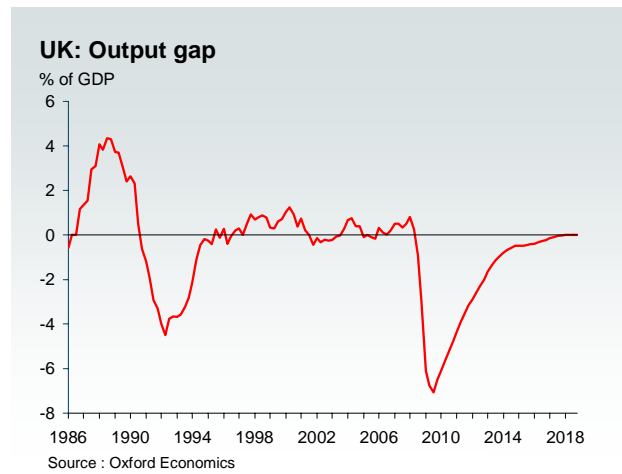
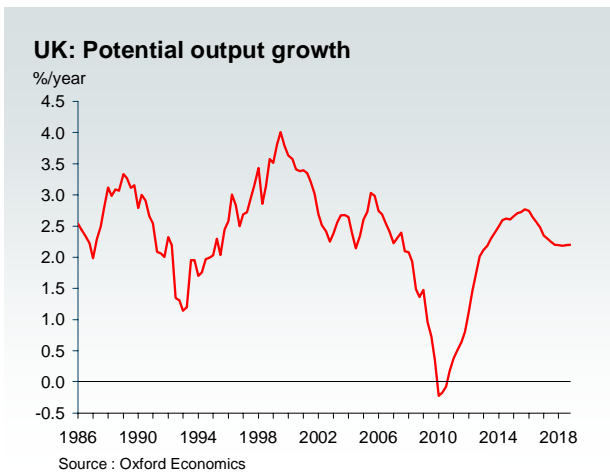
## Therefore we expect potential output growth to be much slower in this cycle

The strong potential output growth of the last cycle was the product of a combination of exceptional factors. Our projections show a much more subdued outlook for the current cycle, partly due to the legacy of the recession but also because the influence of these exceptional factors, such as the strong growth in inward migration, is likely to ebb away. Our forecast shows potential output growth of 1.8% between 2006H2 and 2018, the point at which we expect the output gap to have closed once more.

Comparisons with the Treasury's projections are complicated by the use of different methodologies and by the Treasury's decision to account for the impact of the global financial crisis by assuming a loss of potential output equal to 5¼% between mid-2007 and mid-2010. The most appropriate comparison is of potential output growth for the period after the Treasury's adjustment has been completed. For the period from 2011 to 2018 we expect potential output growth to average 2¼%, almost ½% below the Treasury's central forecast and still ¼% below their cautious view. The difference is largely a reflection of our weaker forecast for population, but also reflects our expectation of a more restrained pickup in business investment post-recession. Such a shortfall in potential growth has significant implications for policy making, in particular fiscal policy, as it reinforces the emphasises the probability that significant additional fiscal tightening will be needed in the next parliament in order to complete the necessary fiscal adjustment.

Contributions to potential output growth				
per cent per annum				
	1986Q2-1997H1	1997H1-2006H2	2006H2-2018H2	2011H1-2018H2
Employment at the NAIRU	0.3	0.6	0.3	0.5
Capital stock	1.0	1.3	1.0	0.9
Total Factor Productivity	1.2	1.0	0.6	0.9
Potential output	2.4	2.9	1.8	2.3

Source: National Statistics, Oxford Economics



The period after 2018 is likely to see potential output growth slow further, as the effects of an ageing population progressively reduces the contribution of labour supply.