2. The UK economic outlook

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Key findings

The economy has been more resilient than most commentators expected since the EU referendum, but a period of slower growth is in prospect.	The UK economy grew by 2% in 2016, with activity having been unaffected by the EU referendum result. However, with a weaker pound set to drive up inflation and squeeze household purchasing power, we expect GDP growth to slow to 1.6% in 2017 and 1.3% in 2018.
Prospect of continued weak productivity performance and less support from rising labour supply means we are relatively gloomy about medium-term growth prospects.	Our forecasts show potential output growth of just 1.5% a year from 2017 to 2021. This would be a little lower than 2007–16 (1.6%) and well below the 1996–2006 period (2.7%). A large output gap will allow slightly firmer GDP growth between 2017 and 2021 (1.8% a year).
The degree of uncertainty surrounding economic forecasts is virtually without precedent.	Brexit represents a source of huge uncertainty, although the risks to the 2017–21 period could be mitigated by a transitional arrangement and the main impact on economic growth is likely to come over a longer time frame.

2.1 Introduction

In this chapter, we discuss the outlook for the UK economy, beginning in Section 2.2 with short-term prospects, where we assess whether the solid post-referendum performance can be maintained through 2017.

Moving our focus beyond the short term, we consider prospects for the 2017–21 period as a whole. As part of this, we look at our estimates of the output gap, before moving on to discuss the prospects for potential output growth over the next five years (Section 2.3). Having set out our baseline forecast, we then assess how this compares with the most

recent forecast from the Office for Budget Responsibility (OBR) and those of other independent forecasters (Section 2.4).

Section 2.5 analyses the risks around the baseline forecast and looks in detail at the potential impact of alternative global scenarios on the UK economy, including an upside scenario 'US growth surges amid Trump fiscal stimulus' and a downside scenario 'Banks and Brexit hit European activity'. Section 2.6 concludes.

2.2 Short-term outlook

2016 – politically turbulent but economically calm

In political terms, 2016 proved to be a year of shocks and surprises with the UK voting to exit the European Union (EU), the subsequent resignation of Prime Minister David Cameron and the formation of a new administration under Theresa May. But the UK economy appears to have displayed a high degree of equanimity in the face of these events, with GDP expanding by 2.0%, only slightly below our forecast early last year of 2.2%, a projection that was shared by the average of independent forecasters surveyed by HM Treasury at the beginning of 2016.[1]

Granted, growth of 2% represented a far from spectacular pace of expansion, falling short of 2015's 2.2% and running below the 2.5% rate averaged since reliable ONS data begin in 1956. However, judged against what many economists had expected the effect of 2016's political ructions, notably June's Brexit vote, would be, last year was unexpectedly robust. HM Treasury's May forecast of the immediate economic consequences of a vote to leave the EU was a case in point.[2] The Treasury predicted that market turmoil and crushed consumer and business sentiment following a 'Leave' result would be followed by the economy contracting by anywhere between 0.2% and 1.4% in the second half of 2016. The consensus of economic forecasters and the expectations of the Bank of England revealed in the weeks following the referendum were somewhat less gloomy, although still anticipating that the economy would do little better than stagnate in H2.

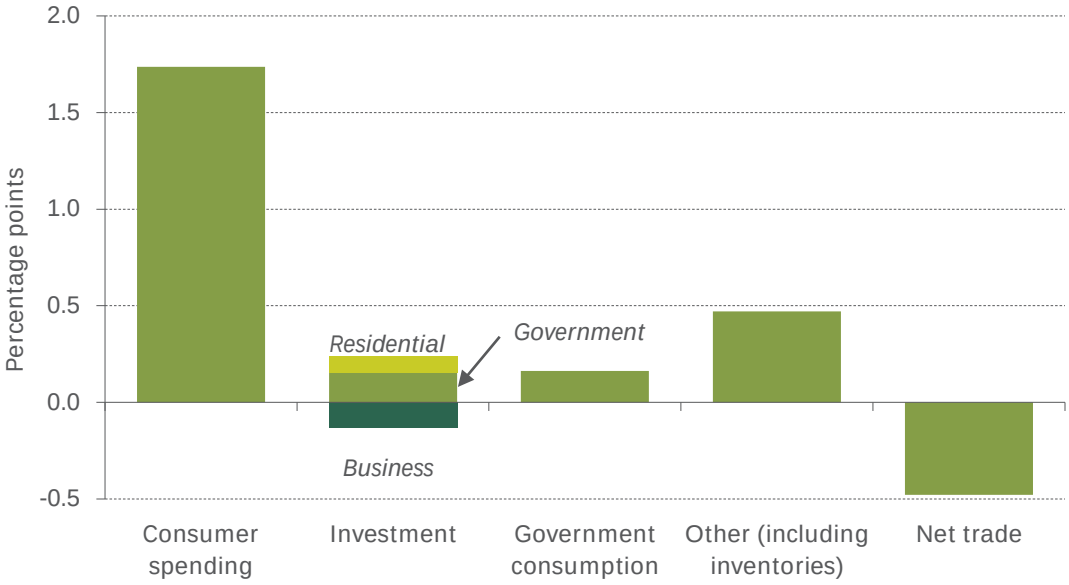
In practice, GDP grew by more than 1% over that period. In fact, average quarterly growth of 0.6% was fractionally above the pace set in the first two quarters. In explaining this better-than-expected performance and indeed the pattern of expansion in 2016 as a whole, the consumer was king. Household spending rose by 2.8% over the year, the strongest out-turn since 2007, and accounting for over four-fifths of the increase in total GDP. What's more, growth in consumption was unusually consistent, with each quarter of the year delivering a 0.7% rise. So fears of a quick retrenchment by consumers following the EU vote did not materialise.

So what lay behind this resilience? The most likely explanation is that the referendum was simply something of an irrelevance in the spending decisions of many, with the 'lowflation' that characterised much of the year being the real driver of consumption by

[1] HM Treasury, 'Forecasts for the UK economy: a comparison of independent forecasts', January 2016, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/493267/PU797_Forecasts_for_UK_economy_345_January_2016.pdf.

[2] HM Treasury, 'HM Treasury analysis: the immediate economic impact of leaving the EU', May 2016, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/524967/hm_treasury_analysis_the_immediate_economic_impact_of_leaving_the_eu_web.pdf.

Figure 2.1. Contributions to UK GDP growth in 2016



Source: Oxford Economics & ONS.

delivering respectable growth in households' purchasing power. At the margin, growth in the second half of the year may have been spurred by some consumers bringing forward purchases to beat expected price rises following sterling's sharp fall (which began at the end of 2015 and then accelerated after the EU vote), though the evidence for this phenomenon is at best mixed.

Disappointingly, consumer spending was the only expenditure component of GDP to deliver a robust performance in 2016. Total investment saw a negligible rise of 0.6%, the weakest annual increase since the 2008–09 recession ended. Within the total, business investment dropped by 1.4%, the first year to see a negative reading since 2009. That said, movements in both total and business investment were dragged down by base effects – the last quarter of 2015 had seen sizeable declines, particularly a 2.4% fall in business investment. Output growth in 2016 also suffered from a negative contribution from inventories, taking 0.4 percentage points (ppts) off output.

On the external side, the story was also downbeat, as Figure 2.1 illustrates. Disappointingly in light of sterling's fall, export volumes rose by only 1.1% over 2016 as a whole while imports increased by 2.5%. Consequently, net trade knocked almost half a percentage point off GDP, contrasting with a marginally positive contribution from this source in 2015.

Consumers will face a less benign environment in 2017 …

Consumers have been encouraged in their spending habits by several years of very low inflation of the 'good' variety, reflecting falls in the cost of food, fuel and energy. But 2017 looks likely to bring an end to this benign environment, with a marked increase in inflation in prospect.

In part, higher inflation is an inevitable consequence of base effects – the turn of 2015–2016 saw petrol, food and energy prices all dropping on an annual basis, helping to drag annual CPI inflation into negative territory. Unless these items had continued to fall in

price at similarly rapid rates, inflation was always set to rise as price falls in the first part of 2016 washed out of the annual comparison.

But base effects will be exacerbated by two developments. The first is rising commodity prices, not least oil. In dollar terms, a barrel of Brent crude ended the second week of January at $54, $25 or almost 90% up on the level a year earlier. The second factor is sterling's fall and the pass-through from a weaker currency to import and consumer prices. On a trade-weighted basis, the pound lost 15% of its value over the course of 2016, with the bulk of the drop occurring after the EU referendum. Sterling's decline against the US dollar (which is used to trade many commodities) was even steeper, at close to 17%.

Although an element of the price pressures arising from this depreciation will be absorbed in the margins of foreign exporters selling to the UK, pass-through to import prices is becoming increasingly evident. Import prices rose by 10% over the year to November 2016 compared with a *fall* of nearly 8% in the same month a year earlier. This raises two questions: 'To what extent will the weaker pound translate into higher prices in the shops?' and 'How long will that transmission take?'. Around one-third of the consumer spending basket consists of imports. So full pass-through would imply a 10% rise in import prices corresponding to a direct rise in the Consumer Prices Index (CPI) of almost 3.5%. Research on the transmission of exchange rate movements to consumer prices yields mixed results. Work by the Bank of England suggests pass-through from changes in the exchange rate to import prices runs at around 60%, with higher import prices then feeding one-to-one into higher shop prices after one year.[3] So 2016's 15% fall in sterling might be expected ultimately to raise the level of consumer prices by around 3ppts (15%×60%×33%).

The most recent data show that annual CPI inflation has already more than doubled since August, increasing from 0.6% in that month to 1.6% in December, the highest rate since July 2014. We think that CPI inflation is likely to peak just below 3% in the second half of 2017, averaging 2.6% over the year as a whole.

… with inflation combining with other pressures on real incomes

Accelerating inflation may prompt workers to bargain for bigger wage increases, which would mitigate the effect of higher prices on consumer spending volumes (albeit at the expense of complicating the challenge faced by the Monetary Policy Committee (MPC)). And what is presently a fairly tight labour market on some measures could support those demands. The Labour Force Survey (LFS) measure of unemployment in the three months to November 2016 remained at an 11-year low of 4.8%, the employment rate of those aged 16–64 remained at a record high of 74.5% and, with vacancy levels close to a historical peak, the number of unemployed people per vacancy stood at 2.1, well below the long-run average of 3.4. Meanwhile, an increase in the national living wage in April from £7.20 to £7.50 will bolster income growth for individuals on low wages.

But there will also be forces putting downward pressure on growth in cash pay, including the prospect of a weakening in the demand for workers in light of a softer economy and political uncertainty. Indeed, employment growth has already been on a steadily declining

[3] K. Forbes, I. Hjortsoe and T. Nenova, 'The shocks matter: improving our estimates of exchange rate pass-through', External MPC Unit, Discussion Paper 43, November 2015, http://www.bankofengland.co.uk/monetarypolicy/Documents/externalmpc/extmpcpaper0043.pdf.

Figure 2.2. Nominal earnings growth and inflation

Source: Oxford Economics & ONS.

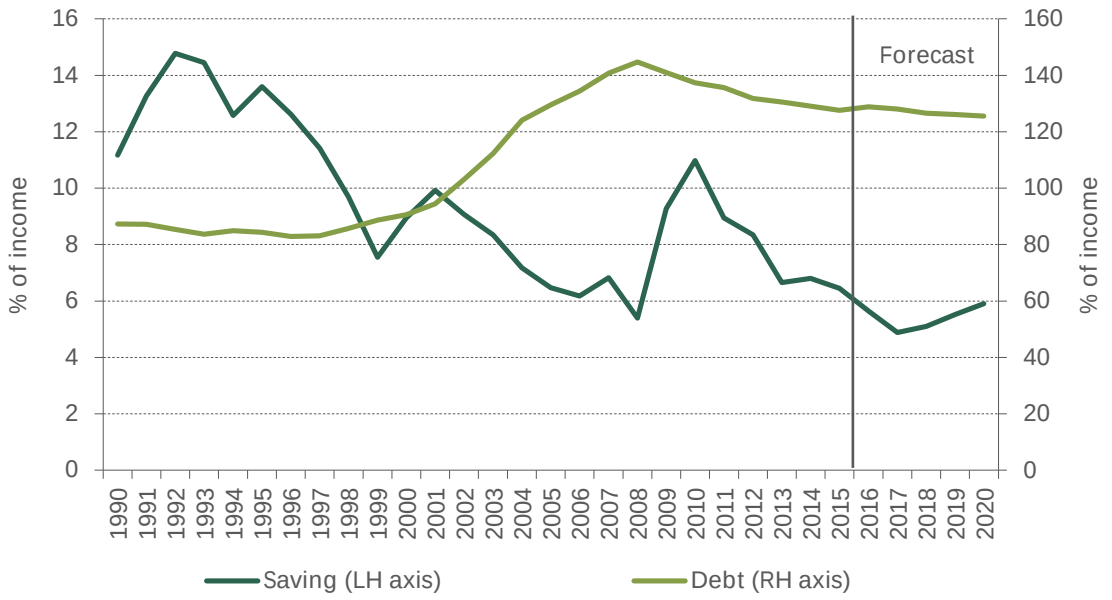
trend since the middle of last year and the scale of falls in unemployment has eased over the same period (although the increased difficulties of recruiting in a world of historically low joblessness would suggest some slowdown was inevitable). We expect the LFS unemployment rate to rise moderately over the coming year, ending 2017 at 5.1%.

Employers also face rises in non-wage labour costs from the introduction of the apprenticeship levy (see Chapter 8) this April, ongoing auto-enrolment into workplace pensions and the levying of National Insurance contributions (NICs) on termination payments from April 2018. All in all, annual growth in average cash earnings is forecast to run at 2.8% this year, a modest progression from 2.4% in 2016. But higher inflation means that, in real terms, average pay growth is set to slow sharply from 1.7% to only 0.2% over the same period (see Figure 2.2).

As well as having to deal with the spending-power-sapping effects of accelerating inflation, around 11.5 million UK households will also suffer from the four-year cash freeze on many working-age benefits which began in April 2016. Stronger price pressures will also make their unhappy presence felt here by eroding the real value of those benefits at a faster rate, with the effect on consumer spending magnified by the fact that low-income, benefit-receiving households tend to consume a larger share of their incomes than the better-off.

But the factors affecting consumers' incomes and spending this year are not all negative. Rising equity prices in 2016 contributed to gross household wealth increasing at what is likely to have been the fastest pace in 11 years, which should fuel an increased appetite to spend among better-off households. The weak pound means that profits earned overseas are worth more when translated into sterling, which is likely to translate into higher dividend payments to UK households than would otherwise have been the case. And the action taken by the MPC in August 2016 to loosen monetary policy has fed into record low interest rates on new mortgages and consumer credit, cutting debt-servicing costs.

Figure 2.3. Saving ratio and personal debt



Source: Oxford Economics & Haver Analytics.

Indeed, household interest payments as a share of gross disposable incomes remained at 4.6% in Q3 2016, the joint lowest since records began in 1987. And with growth in consumer credit running at an 11-year high at the end of 2016, households appear to be prepared to borrow more to compensate for a temporary period of weaker spending power. However, with the household saving ratio falling to an eight-year low of 5.6% in Q3 2016, whether that willingness will persist for anything other than a relatively short period remains to be seen.

All in all, we expect household incomes to rise in real terms by a modest 0.6% this year, down from 1.7% in 2016 and representing what would be the weakest increase since 2013. This contributes to forecast consumer spending growth almost halving from 2016's 2.8% to 1.5% in 2017, and implies a further fall in the saving ratio (see Figure 2.3).

MPC to maintain a neutral stance on monetary policy

The MPC faces a balancing act this year in responding to the combination of a likely slowdown in the economy alongside a temporary period of above-target inflation. This less than happy combination suggests that the Committee will adopt a neutral stance on monetary policy, holding Bank Rate at the current 0.25% and forgoing the announcement of any additional asset purchases over the course of 2017.

The case for neutrality looks fairly compelling. The economy's performance in the second half of 2016 proved much more resilient than the Bank of England had predicted in the aftermath of the Brexit vote. This was reflected in an upgrade to its forecast for GDP growth in 2017 from 0.8% to 1.4% between August's and November's *Inflation Report*, and the MPC deciding that its previous guidance of further monetary loosening in the event of the economy weakening in line with earlier expectations had 'expired'. Moreover, lags in the transmission of monetary policy mean that the loosening announced last August (a 25 basis-points cut in Bank Rate, the introduction of a 'Term Funding Scheme' to help ensure that lower Bank Rate was passed through to lower market rates, and an additional

£70 billion of asset purchases, including £10 billion of corporate bonds) will continue to support the economy during the course of this year.

Admittedly, the Bank's November forecast cut expected GDP growth in 2018 from 1.8% to 1.5%, which, given our view that there is a large output gap (see Section2.3), suggests that the economy could do with some more monetary stimulus. But weaker growth has to be set alongside the risks the MPC perceives in tolerating higher inflation. The Bank predicted in November that the CPI measure would reach 2.7% by the end of 2017, up from a forecast of 2.0% last August and well above the MPC's 2% target.

A period of 'stagflation-lite' should fade as we move through 2018. But with GDP growth set to remain constrained by political uncertainty, the MPC is likely to tread carefully in tightening policy. We do not expect Bank Rate to rise until the middle of 2019, slightly behind the current market expectation for a hike to occur in March 2019.

A relatively subdued housing market in prospect

Although the distortions caused by April 2016's increase in stamp duty on buy-to-let properties and second homes have steadily washed out of housing market data, the key housing indicators continue to send mixed messages on the state of the market, particularly in terms of the strength of price pressures.

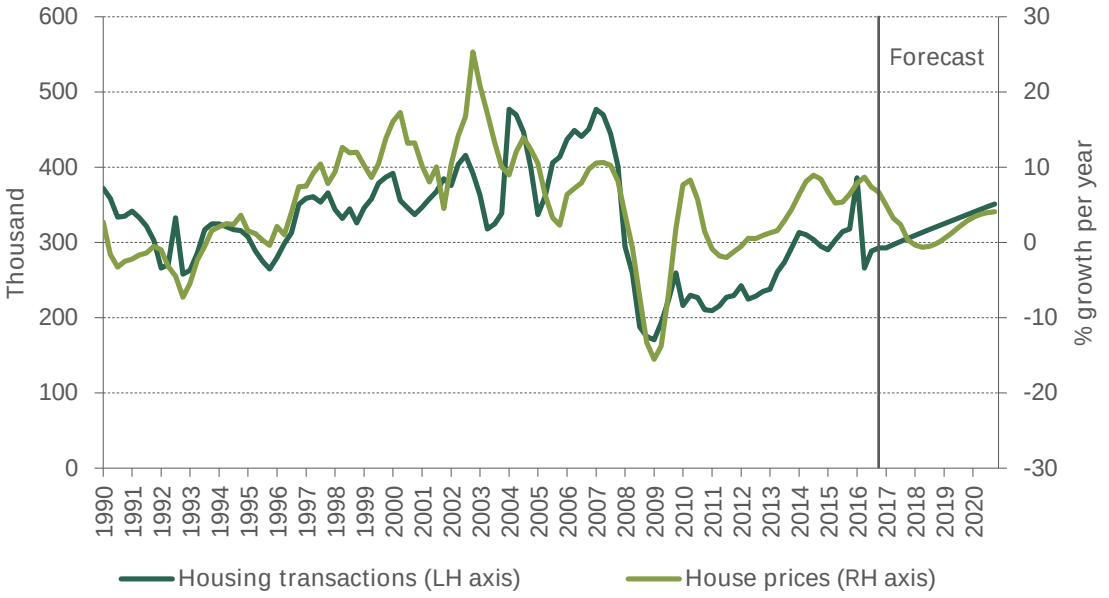
On the activity side, it appears that there was a modest recovery in both transactions and mortgage approvals through the second half of 2016. With transactions running at 97,600 and approvals at 67,505 last November, both metrics ended the year broadly in line with the levels that were averaged for much of the period since 2014, while remaining well short of pre-financial-crisis norms. With regard to house prices, the story was more mixed. All of the main measures have recently reported that annual house price inflation has continued to run some way ahead of household income growth, while differing on the scale of that inflation, ranging from 4.5% according to Nationwide, to around 7% based on ONS/Land Registry and Halifax data.

One segment that has seen unambiguous signs of slowing is the prime central London investment market. This subsector has reported much lower rates of activity and falling prices since last summer, with heightened uncertainty surrounding the economic outlook dampening confidence and adding to the drag from the increased rate of stamp duty.

As far as 2017 is concerned, the monthly survey conducted by the Royal Institution of Chartered Surveyors (RICS) has recently suggested that the early part of this year is likely to see a continuation of the trends seen in the latter part of 2016, with a combination of little movement in growth in sales instructions and a steady increase in new buyer enquires set to drive further modest price rises.

However, as the year progresses, the market is forecast to flatten off as demand-side factors offer less support. In particular, employment is expected to remain broadly flat this year, while, as noted earlier, real income growth is set to slow sharply. In mitigation, a historically low level of mortgage rates will provide some offset (last November saw the average interest rate on a new mortgage drop to a new record low of 2.16%). Though prices remain overvalued relative to most historical metrics, we think that the chances that a softer economic outlook will cause a sharp correction in property values are low. Notably, there is unlikely to be a material rise in forced sales while housing supply remains

Figure 2.4. Housing transactions and house prices



Source: Oxford Economics & Haver Analytics.

tight. That said, as Figure 2.4 illustrates, after rising by 7.5% in 2016, we forecast average house prices to grow by just under 3% this year, representing the weakest rise since 2013.

Investment remains particularly vulnerable to Brexit risks

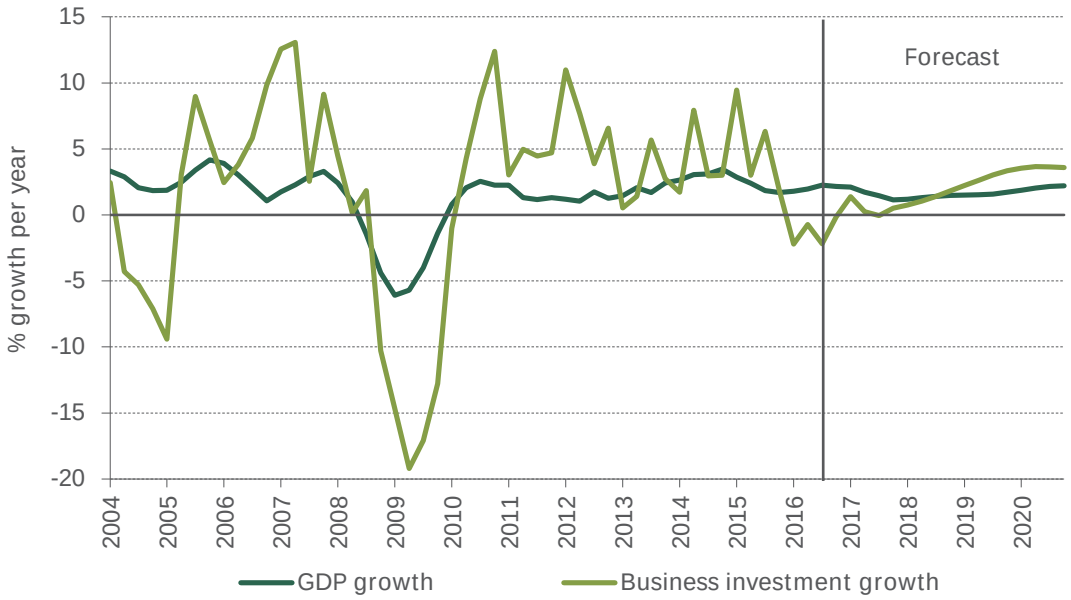
Business investment has long been identified as being particularly vulnerable to economic and political uncertainty, given the lumpy and often irreversible nature of this form of spending. This has led to the concept of the 'option value' of waiting until a lack of clarity about the future is resolved before undertaking investment decisions.[4] So the likely prolonged political and economic ructions the UK is currently undergoing as a consequence of last June's EU referendum result represent a potentially serious headwind to companies' appetite to spend on capital equipment.

Granted, the investment hiatus that some feared would result from uncertainty in the run-up to and the immediate aftermath of the EU vote failed to materialise. In fact, business investment rose in both the second and third quarters of 2016, by a quarterly 1.2% and 0.4% respectively. This was an improvement on the sharp contraction seen around the turn of 2016 – Q4 2015 saw investment drop by 2.4%, followed by a 1.5% fall in the first quarter of last year. Those falls acted to drag down investment growth in 2016 as a whole into negative territory. In fact, an expected drop of 1.3% in 2016 means that last year is likely to have been the first to see firms cut back real spending on investment since 2009.

Survey evidence for the early part of this year has been mixed. The Bank of England's Agents' measure of investment intentions has seen little recovery from the sharp falls seen immediately after the EU vote and points to investment broadly stagnating in 2017. However, the British Chambers of Commerce (BCC)'s survey has recently seen some signs of recovery in corporate investment plans, particularly among manufacturers.

[4] For example, see N. Bloom, S. Bond and J. Van Reenen, 'The dynamics of investment under uncertainty', Institute for Fiscal Studies, Working Paper 01/05, February 2001, https://www.ifs.org.uk/wps/wp0105.pdf.

Figure 2.5. Business investment and GDP growth



Source: Oxford Economics & ONS.

But by historical standards, the BCC's results were still fairly weak. And this year presents a number of reasons for firms to exercise caution in committing to capital spending. Although the likely triggering of Article 50 this spring should provide more clarity on the Brexit process, continued uncertainty around the outcome of leaving the EU will caution firms exposed to the EU market from investing in the UK, particularly in the real estate sector. A weaker pound will increase the cost of imported capital equipment. And the softer outlook for consumer spending will make consumer-facing firms more wary about devoting resources to expand production.

But some investment-friendly developments should ensure that the outlook for corporate spending is not too grim. The rise in long-term interest rates since last autumn has cut corporate pension fund deficits, with the figures from the Pension Protection Fund showing the aggregate shortfall down to £224 billion at the end of December 2016 from a record of £413 billion last August. So any pressure to reduce deficits by diverting cash from spending on capital equipment should ease. And financial conditions remain supportive for firms borrowing to invest. This has been helped by the MPC's actions in August, including the programme of corporate bonds purchases (representing around 7% of the market that meets the criteria for the scheme) which is due to run until February 2018. At the same time, the boost to UK exporters' sterling profits from the weak pound and the likelihood that the exchange rate will remain depressed for a prolonged period may incentivise companies to invest in expanding production, particularly those selling outside the EU.

Overall, as Figure 2.5 illustrates, we forecast a steady if modest recovery in business investment growth from 0.5% this year to 1.3% in 2018.

Net trade set to be the silver lining in a cloudy economic outlook

All in all, domestic demand looks likely to provide less support to the economy in 2017 than in recent years. This puts the onus on net trade to ensure that activity does not see

too sharp a slowdown. As to whether this component of GDP can deliver, we are fairly optimistic it can.

Admittedly, this would require a marked turnaround from the position in 2016. Net trade is estimated to have subtracted 0.5ppts from GDP last year, the biggest drag from this source since 2013. A 1.1% rise in export volumes represented a sharp deceleration on 2015's 6.1% rise, and although import growth also slowed, a drop from 5.5% to 2.5% was more modest.

But the extent of the fall in sterling over the last year or so, combined with a brighter outlook for the world economy than of late, points to net trade delivering a better outcome this year. As far as sterling is concerned, the currency's current weakness is close to unprecedented. In January, the pound was trading in the $1.20–1.25 range against the US dollar, not far off the lowest rate since 1985. This compares with a recent peak of just over $1.70 in the summer of 2014. And on a trade-weighted basis, sterling's value was down almost 15% on a year earlier, settling at a level not seen since records began in the late 18th century.

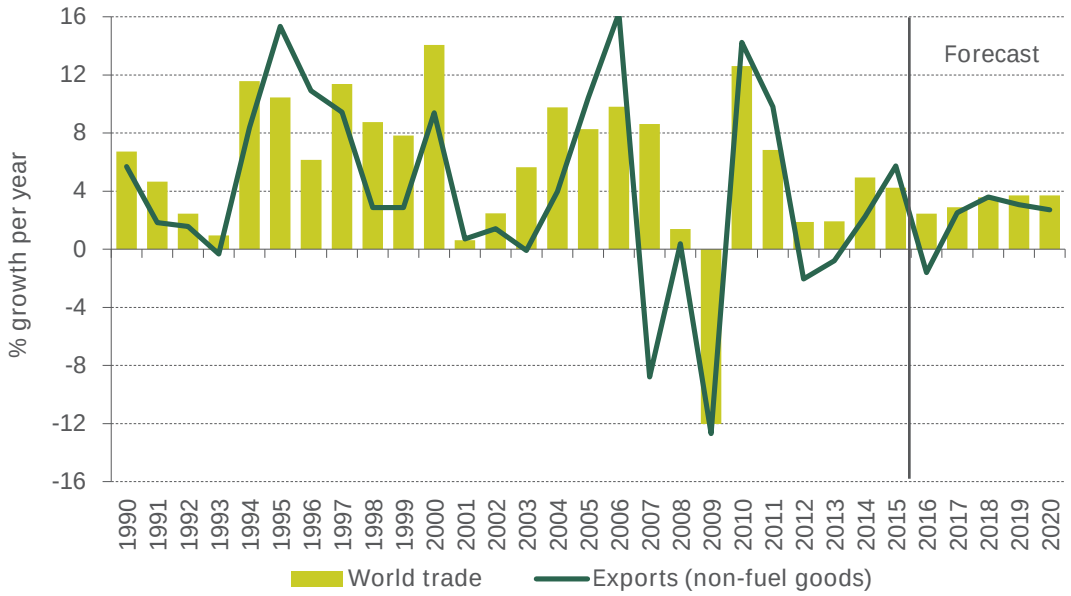
It is difficult to argue that the pound's weakness is not in part Brexit-related, reflecting fears that the UK's exit from the EU will leave the economy permanently smaller than in a 'remain' counterfactual. Indeed, since last summer, sterling has shown itself very sensitive to news around different exit options, with inklings that the UK is headed towards a Brexit of the 'hard' variety putting downward pressure on the currency. The process of leaving the EU is set to be a multi-year one, pointing to sterling's value remaining depressed for some time to come. Moreover, if our expectation of the MPC adopting a neutral monetary policy stance this year proves correct, UK monetary policy should appear relatively dovish against a US Federal Reserve that we forecast to hike rates twice in 2017. So sterling should remain particularly weak against the dollar.

This should give exporters more confidence that the competitiveness gain from a cheap pound will last and hence more incentive to reduce foreign currency prices and expand market share abroad. Similarly, domestic UK firms competing with imports may also be more willing to respond to competitiveness gains. Granted, the flip side of the weaker pound for exporters will be more expensive imported raw materials and other inputs. But this should erode only a modest proportion of the boost to competitiveness. Estimates from the World Trade Organisation (WTO) and the Organisation for Economic Cooperation and Development (OECD) suggest that in 2011 (the latest available data), only around a quarter of the value added embodied in UK exports consisted of imports.[5] Given the importance of services in total UK exports (accounting for around 45% of the total as of Q3 2016), this modest share is not too surprising.

Meanwhile, the impediment of a weak world economy, which stymied the effect on exports of sterling's previously big fall in 2008, should present less of an obstacle in the near term. GDP growth in the US is forecast to come in at 2.3% this year, up from an expected 1.6% in 2016. Admittedly, expansion in the eurozone economy is forecast to slow a touch over the same period, from 1.7% to 1.5%. But this will still represent a decent margin above the 1.1% rate averaged from 2010 to 2016. The outlook for emerging

[5] OECD, 'Measuring trade in value added: an OECD-WTO joint initiative', http://www.oecd.org/sti/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm.

Figure 2.6. Exports and world trade growth



Source: Oxford Economics & Haver Analytics.

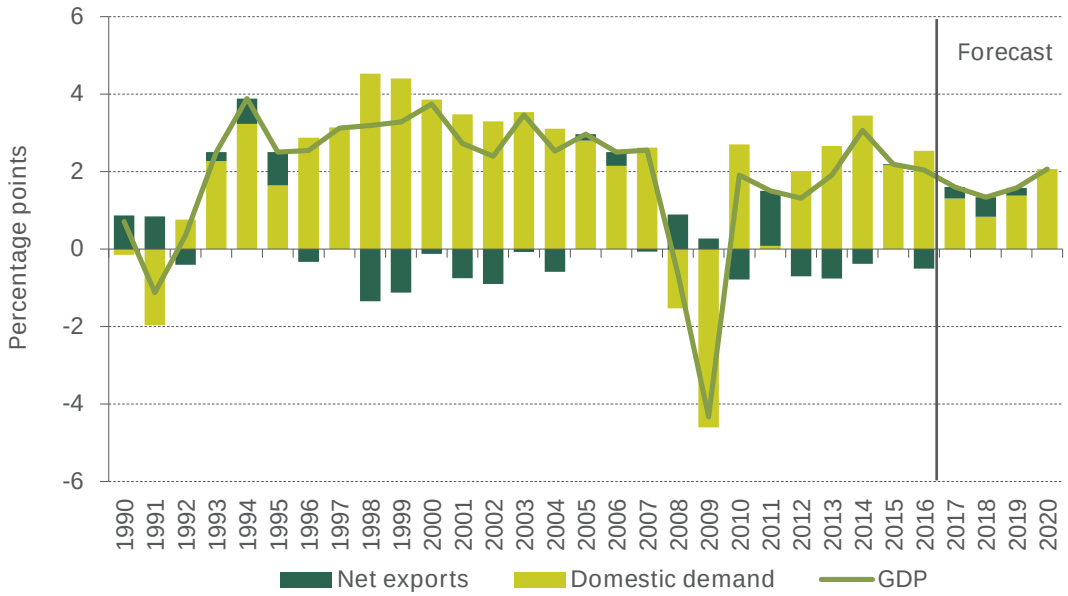
economies looks more uncertain given the difficulties presented by rising US interest rates and the possibility of growing trade protectionism. But with UK exports still predominantly directed towards developed markets, the risk of a further slowdown among emergers is less of an issue for the UK than for some other advanced economies. Overall, growth in world trade (weighted by UK export share) is forecast to accelerate from 2.4% in 2016 to 2.9% this year and 3.6% in 2018 (see Figure 2.6).

As to what this means for net trade, our expectation is for a gradually increasing positive contribution from this year onwards, adding 0.3ppts to output in 2017 and 0.5ppts in 2018. Time lags mean that growth in export volumes is forecast to see only a modest uptick in 2017, running at 2.3%. But this accelerates to 3.4% in 2018. Meanwhile, import growth is expected to run at 1.3% and 1.6% over the same two years respectively. A positive contribution from net trade will make its presence felt in reducing the UK's current account deficit, which ran at almost 5% of GDP in 2016. The boost delivered by the lower pound to the sterling value of the UK's net overseas investment income should also cut the UK's shortfall with the rest of the world. On that theme, the third quarter of last year saw the UK become a net overseas creditor for the first time since 2008. In fact, a positive net international investment position of 12.4% of GDP was the highest since 1987. We expect the current account deficit to narrow to 3.5% of GDP this year and 2.4% in 2018.

Growth likely to slow, but forecast subject to particular uncertainty

The economy's performance in 2017 looks set to be determined in large part by the contrary effects of a weak currency in, on the one hand, raising inflation and squeezing consumers' spending power and, on the other, boosting the profitability and competitiveness of exporters. On balance, the downsides of sterling's fall, combined with the adverse effects of political uncertainty on investment, look set to dampen GDP growth this year, with some shift in the sources of that growth from domestic demand to net trade (see Figure 2.7). Output is forecast to rise by 1.6%, down from 2.0% growth in 2016, with 2018 expected to deliver a further modest slowdown (a rise of 1.3%).

Figure 2.7. Contributions to GDP growth



Source: Oxford Economics & Haver Analytics.

2.3 Medium-term outlook – subdued pace of growth in prospect

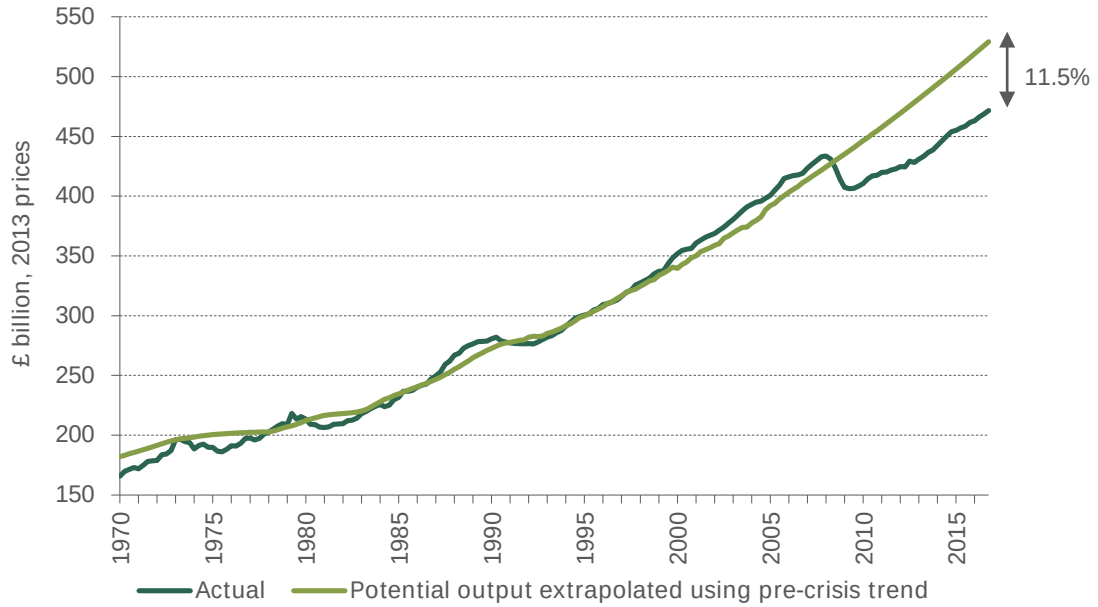
Over the medium term, our baseline forecast shows the UK economy growing at a pace that is some way below historical norms. But a huge degree of uncertainty surrounding medium-term prospects will persist until we get greater clarity around the shape of the UK's post-Brexit relationship with the EU and the way in which the government intends to use any additional powers that Brexit brings.

How large is the output gap?

Our medium-term forecasts for GDP growth are dependent upon a combination of estimates of the current output gap and of potential output growth going forwards. Such estimates are always important inputs into judgements about economic policy and they now have a formal role in fiscal policymaking once more, with the Chancellor having reverted to a cyclically-adjusted target for borrowing at the November 2016 Autumn Statement.

However, given that the size of the output gap and the strength of potential output cannot be measured, estimating them requires a high degree of judgement. Forecasters must also adapt to the fact that economic data are subject to revision for many years after the event. And the issue is further complicated by the very large divergence in actual output from previous trends in the period since the global financial crisis. Were we to assume that potential output had continued to grow in line with the 1970–2006 average of 2.5% a year for the period since 2007, it would suggest an output gap of nearly 12% (see Figure 2.8). Though most other advanced economies are in a similar position, it would be unprecedented for such a large degree of spare capacity to persist for a decade after a recession, so most forecasters have concluded that the global financial crisis inflicted a degree of structural damage on the economy, although the extent of this damage is widely disputed.

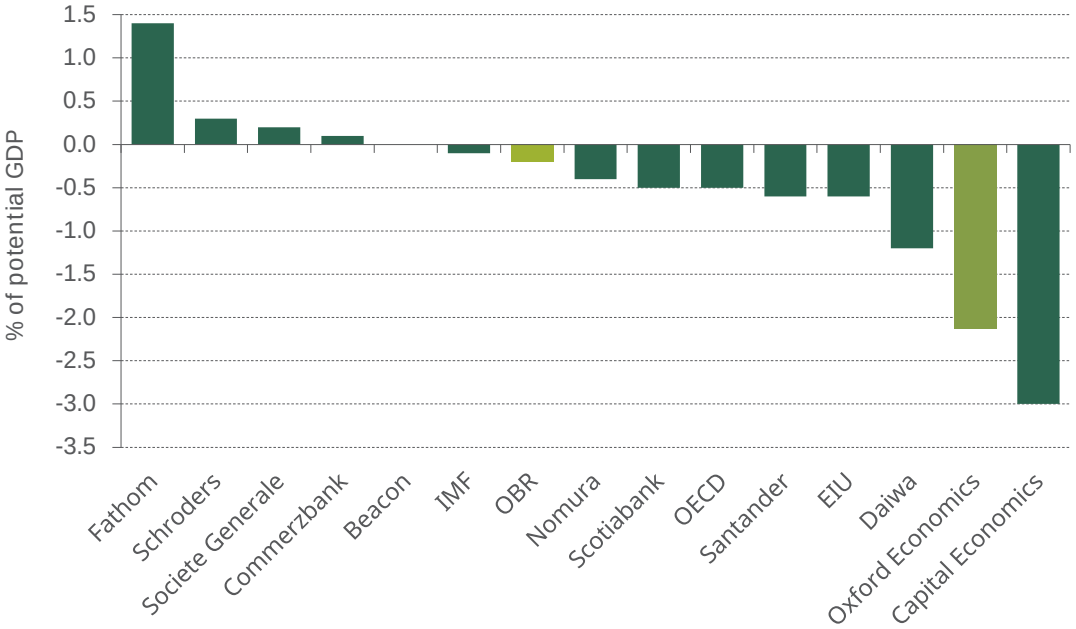
Figure 2.8. Quarterly GDP relative to extrapolation of pre-crisis trend



Note: Potential output series shows Oxford Economics estimates from 1970 to 2006. Potential output is then grown in line with the long-term average (2.5% a year) from 2007 to 2015.

Source: Haver Analytics, Oxford Economics.

Figure 2.9. Estimates of the output gap in 2016



Note: These estimates are taken from the January 2017 edition, apart from where institutions are missing in which case data from the December 2016 edition are quoted.

Source: HM Treasury, 'Forecasts for the UK economy', December 2016 and January 2017, https://www.gov.uk/government/collections/data-forecasts.

Given all of these complications, it is not surprising that there is a wide range of different estimates of the output gap amongst forecasters. In the latest HM Treasury survey of independent forecasts, the estimates of the output gap in 2016 ranged from +1.4% of potential GDP to –3.0% of potential GDP (see Figure 2.9).

We derive our estimate of the output gap by estimating the level of potential output and then combining this with the actual GDP data. We take a production function approach to estimating potential output, which provides a framework that relates the level of potential output to contributions from factor inputs – labour, human capital and capital – and the efficiency with which those inputs are used (so-called 'total factor productivity'). It also provides a consistent method for forecasting future growth in potential output, taking into account important changes such as demographic trends. Potential output is calculated as:

$$\ln(Y^*) = 0.65\ln(L) + 0.3\ln(H) + 0.35\ln(K) + \ln(A)$$

where ln(·) represents the natural logarithm and:

Y^* is potential output;

L is potential labour supply, which is equal to the labour supply at the NAIRU (non-accelerating inflation rate of unemployment) multiplied by average hours worked;

H is human capital, which is defined as the average years of education in the working-age population;

K is the capital stock;

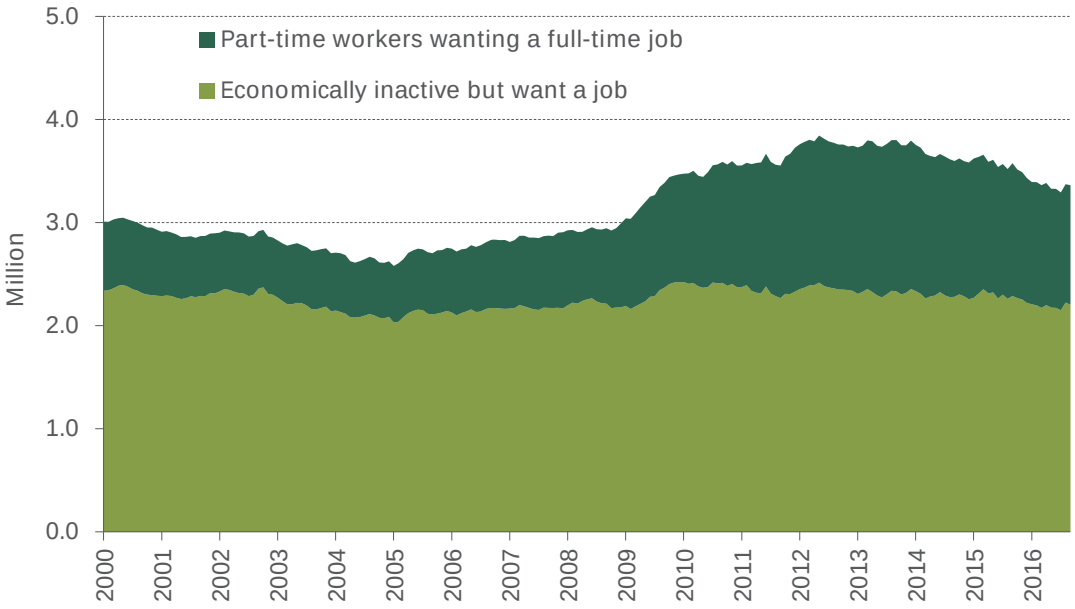
A is total factor productivity (TFP).

As Figure 2.9 suggests, our estimate of the output gap is towards the more optimistic end of the consensus, as it has been for much of the period since the financial crisis. Though we do not have access to the detailed calculations of other forecasters, we would assume that their views on the contributions of capital, human capital and labour are similar to our own, given that these estimates are based upon published data. This would suggest that any difference in estimates of the output gap is largely due to differences of opinion on the degree to which the financial crisis has wreaked permanent damage on total factor productivity. We have studied this subject in detail in previous Green Budgets,[6] including a review of the literature on previous crises. This analysis concluded that our estimate of the degree of permanent damage to potential output was towards the top of the range of estimates contained in the literature on previous crises, implying that many other forecasters – including the OBR – have assumed that the permanent damage has been somewhat greater. As a result, our estimate that potential output grew by 1.6% a year between 2007 and 2016 is a little above the OBR's estimate of 1.3% a year, with both well below the 2.5% a year averaged over the period from 1970 to 2006.

In our view, other indicators corroborate the notion that there is still a sizeable amount of spare capacity in the economy. Though the unemployment rate has dropped to an 11-year low of 4.8%, other measures indicate that there is still plenty of slack in the labour market. Most notably, the number of 'frustrated' workers – those who are working part-time but

[6] See, for example, pages 72–81 of A. Goodwin and O. Salmon, 'The UK economic outlook', in C. Emmerson, P. Johnson and H. Miller (eds), *The IFS Green Budget: February 2014*, http://www.ifs.org.uk/budgets/gb2014/gb2014.pdf.

Figure 2.10. Number of 'frustrated' workers



Source: Oxford Economics calculations using data from Haver Analytics.

report wanting a full-time job or who are economically inactive but report wishing to work – remains high. Data from the Office for National Statistics (ONS) suggest that the number of people falling into these two categories currently totals around 3.4 million, which compares with an average of 2.9 million in 2007, the year before the financial crisis hit (see Figure 2.10).

Persistently soft wage growth also suggests that the labour market is somewhat looser than the headline unemployment data might indicate. The relative absence of core inflationary pressures over recent years is also consistent with the idea that there is still some slack in the economy.

Prospects for potential output growth

Having estimated how much spare capacity we believe there is in the UK economy at present, we must make a judgement on how potential output will evolve, in order to determine the scope for actual GDP growth to recover. But with the UK soon to commence negotiations on its exit from the EU and huge uncertainty around both how these are likely to play out and how the government will use any repatriated powers, there are a wide range of possible outcomes for potential output growth.

We have taken a 'scenario tree' approach to assessing the probability of various Brexit outcomes. This involves separating the process into three separate parts – the timing of the Article 50 notification; whether or not there will be a transitional arrangement; and the ultimate UK–EU trade deal – and then attaching probabilities to the various options at each stage. This analysis leads us to conclude that the most likely outcome is that after triggering Article 50 in the first half of this year, the UK exits the EU in 2019 with a three-year transitional arrangement leading ultimately to a free trade agreement (FTA). As such, this is the assumption underpinning our baseline forecast, although it should be noted that the probability that we attach to this chain of events is still relatively low, with just over a one-in-four chance, demonstrating the large number of other potential outcomes.

Our baseline forecast also assumes that the government takes a 'populist' approach towards using its newly-returned sovereignty by, for example, clamping down on migration and using money that it would otherwise have paid into the EU budget to increase public spending. We discuss some of the possible alternative Brexit outcomes and their potential impact on growth prospects in Section 2.5.

We now use the production function approach to consider how the contributions of the various factor inputs are likely to evolve.

Total factor productivity

The bulk of the blame for the poor performance of the economy since 2007 can be placed on total factor productivity. However, the literature suggests that we should already have seen any permanent damage to TFP caused by the financial crisis, which would suggest that the continued weakness reflects other factors. Many hypotheses have been advanced – including data mismeasurement, particularly in technology-related sectors; the existence of 'zombie firms' hindering the efficient allocation of capital; a persistent modest pace of innovation relative to historical technological revolutions; and so-called demand-side secular stagnation, where persistent demand weakness disguises unutilised but still present potential output – but while all probably have parts to play to varying extents,[7] in our view much of the 'productivity puzzle' remains unresolved.

The lack of a single convincing explanation for the poor performance since the crisis poses a significant problem with regard to forecasting future trends. On one hand, there is reason to expect more 'normal' trends to reassert themselves gradually, particularly that part of the weak performance that can be attributed to cyclical factors. For example, it is possible that innovation has been held back because firms have reacted to a reduction in the cost of labour relative to capital – brought about by high rates of unemployment and weak earnings growth. But the cost of labour is increasing, with unemployment now back down to pre-crisis levels and earnings growth gradually firming, so the pressure on firms to innovate and find ways of improving efficiency is likely to strengthen. If statistical offices are able to 'catch up' with technological advancements and resolve some of the measurement problems, this may also help to reduce the scale of the 'productivity puzzle'; in the UK, the recommendations of the Bean Review of economic statistics[8] offer some hope on this score.

But set against these factors, the more structural causes of the weak productivity performance – such as demand-side secular stagnation and the low level of corporate insolvencies leaving large numbers of 'zombie firms' – appear likely to persist and the slow progress across the world since the crisis has led us to take a more pessimistic view about the potential for a recovery in TFP than in last year's Green Budget.

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[7] A more detailed discussion of potential explanations for the persistently poor global productivity performance can be found in Oxford Economics, 'Secular stagnation – a cross-country evaluation', 8 September 2016, https://www.oxfordeconomics.com/my-oxford/publications/343170.

[8] Professor Sir Charles Bean, *Independent Review of UK Economic Statistics*, March 2016, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/507081/2904936_Bean_Review_Web_Accessible.pdf.

Furthermore, our research[9] suggests that the UK's impending departure from the EU could also weigh on growth in TFP, although the effects are likely to be relatively modest within our forecast horizon – particularly given that we assume there will be a transitional arrangement – and will build in the years beyond. The literature points to a positive relationship between the degree of trade openness and TFP, but the UK is likely to see a degree of trade destruction as it leaves the single market and potentially ceases to be a part of the FTAs that it previously accessed through its membership of the EU. In addition, changes in the UK's trading relationship with the EU will bring about shifts in the UK's comparative advantage. This, in turn, is likely to have a negative impact on allocative efficiency for a time.

There is also the potential for a reduction in foreign direct investment (FDI) to drag on productivity growth, given some evidence that FDI enhances economy-wide productivity. If firms perceive that Brexit will dampen the UK's long-term growth prospects and, therefore, potential rates of return, the UK will be a less attractive destination for FDI. In addition, some firms have seen the UK as a good place in which to invest because membership of the EU has offered those firms a gateway into the EU markets; the UK's departure from the EU might encourage these firms to look to other markets to act as such a gateway.

Taking these factors together, we assume that over the 2017–21 period as a whole, TFP contributes 0.4ppts per year to potential output growth; this would be a little above the average of the 2007–16 period (0.3ppts) but still well short of pre-crisis norms (0.7ppts).

Capital stock

Having grown robustly through the 2010–15 period, business investment faltered last year. The corporate sector as a whole has the ability to fund a further period of strong growth in capital spending, with profitability above historical norms, cash holdings near to record levels and credit availability relatively good. But there are significant question marks over firms' motivations to invest. Though rates of return are high and labour costs are likely to rise sharply over the next few years due to the planned large increases in the national living wage, the uncertainty around Brexit is likely to weigh on capital spending decisions, particularly for those firms with a heavy reliance on the EU market. As such, we would expect some major capital spending decisions to be postponed until the UK's future relationship with the EU has become clearer.

Further out, there is a possibility that some of this deferred capital spending will come on stream as the degree of Brexit-related uncertainty is reduced. However, we would expect one of the consequences of the negative productivity 'shock' detailed above to be a scaling-back of investment intentions in reaction to the lower expected rate of return.

Over the 2017–21 period as a whole, we expect capital deepening to contribute 0.6ppts per year to potential output growth. This would be a little higher than for the 2007–16 period (0.5ppts) but would be some way short of the performance in the 10 years prior to the financial crisis (1.0ppt).

[9] Oxford Economics, 'Assessing the economic implications of Brexit', March 2016, http://www.oxfordeconomics.com/brexit/executive-summary.

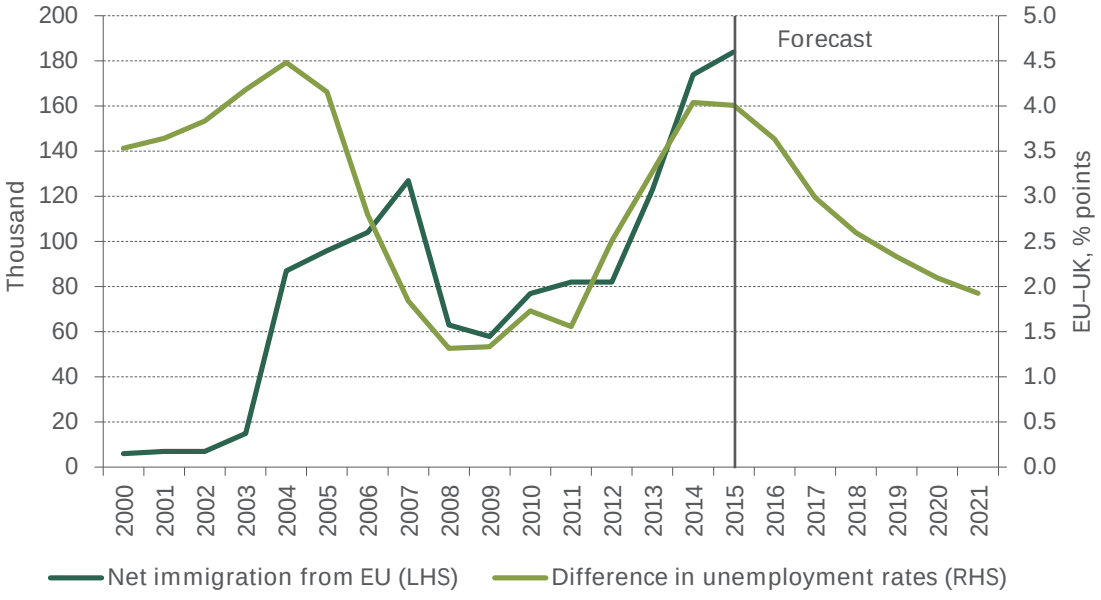
Labour supply

Strong growth in labour supply has provided some offset to the adverse developments in TFP and the capital stock over the past decade. This strength has been founded on high levels of net inward migration and a steady increase in the female state pension age (SPA), which has risen from 60 at the beginning of the decade to reach 63½ at the end of 2016. In the near term, both of these factors should remain highly supportive of potential output growth, but we expect their influence to fade as we move through the forecast horizon.

The latest data showed net inward migration of 335,000 over the year to June 2016. This was the latest in a run of very high figures; net immigration has averaged 233,000 a year over the past decade, compared with 162,000 a year over the preceding 10 years. The relative strength of the UK's labour market has been the key factor behind this, particularly with regard to net inflows from the EU; as Figure 2.11 demonstrates, there is a strong relationship between the level of net immigration from the EU and the unemployment rate in the UK versus the rest of the EU. However, the strength of this relationship suggests that net inflows are likely to slow over the next five years, even before we consider the strong likelihood of immigration restrictions being imposed post-Brexit, with unemployment rates elsewhere in the EU now on a strong downward trend. Furthermore, the sharp depreciation of the pound over the past couple of years has significantly reduced income differentials between the UK and other countries, particularly those in central and eastern Europe, from which levels of migration have been particularly high. This is likely to both discourage migrants from moving to the UK and make it more attractive for those who have migrated from those countries over the past decade to return home.

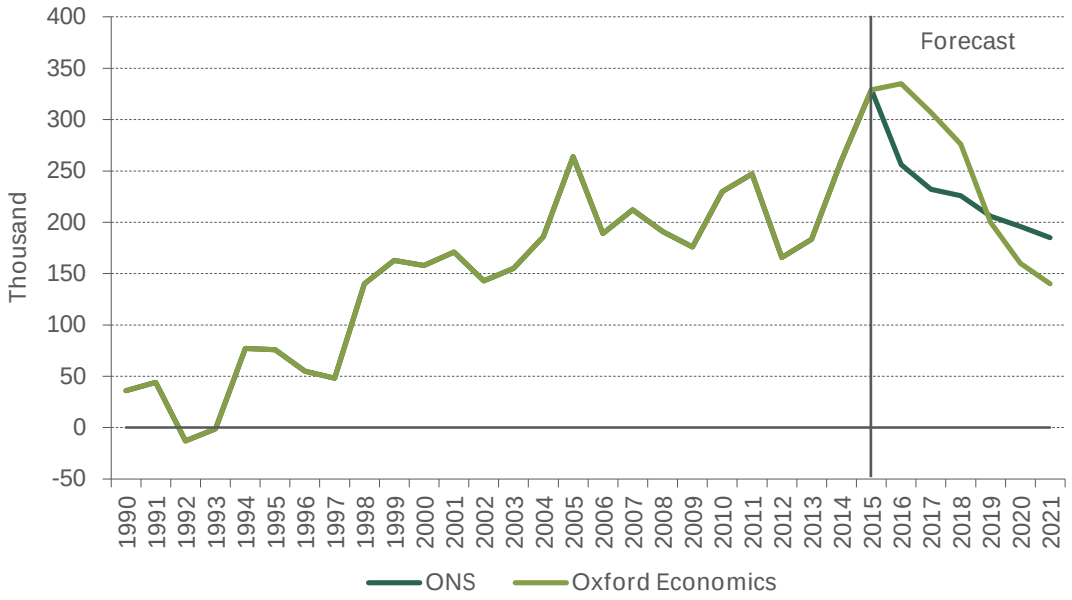
The current (2014-based) ONS principal population projections, which the OBR adopts for its forecasts, have proven to be an underestimate over the past couple of years and this is likely to continue to be the case in the short term. However, as labour market prospects continue to improve elsewhere in Europe, we expect inflows to drop and our forecast

Figure 2.11. Net immigration from EU and difference in EU & UK unemployment rates



Source: Oxford Economics & Haver Analytics.

Figure 2.12. Net inward migration forecasts



Source: Oxford Economics & ONS.

assumes that net inward migration drops to just 140,000 in the year to mid 2021 (see Figure 2.12).

This forecast is based upon the assumption that, once the Article 50 negotiations have been completed in early 2019, there will be a transitional arrangement with the EU that maintains freedom of movement of labour for three years; should this prove not to be the case, there is a good chance that net inflows will drop even further towards the end of the forecast horizon.

The population of working age will also be boosted by further increases in the SPA. By October 2020, the SPA will have reached 66 for both men and women, compared with the current levels of 65 for males and around 63½ for females. Overall, we expect the population of working age to grow by 0.9% a year from 2017 to 2021, though this masks a substantial slowdown at the end of the forecast horizon, with growth of just 0.3% forecast for 2021.

However, while we expect the population of working age to continue to grow strongly, a decline in the participation rate is likely to mean that the size of the workforce grows a little more slowly. The likely decline in participation is largely because the population is ageing and labour market participation is still substantially lower amongst those close to the SPA than amongst younger individuals. However, the downward pressures from this source should be partially offset by higher participation amongst those 'frustrated' workers that we identified above – this would take the form of part-timers working more hours and some of those who are currently inactive re-entering the labour market.

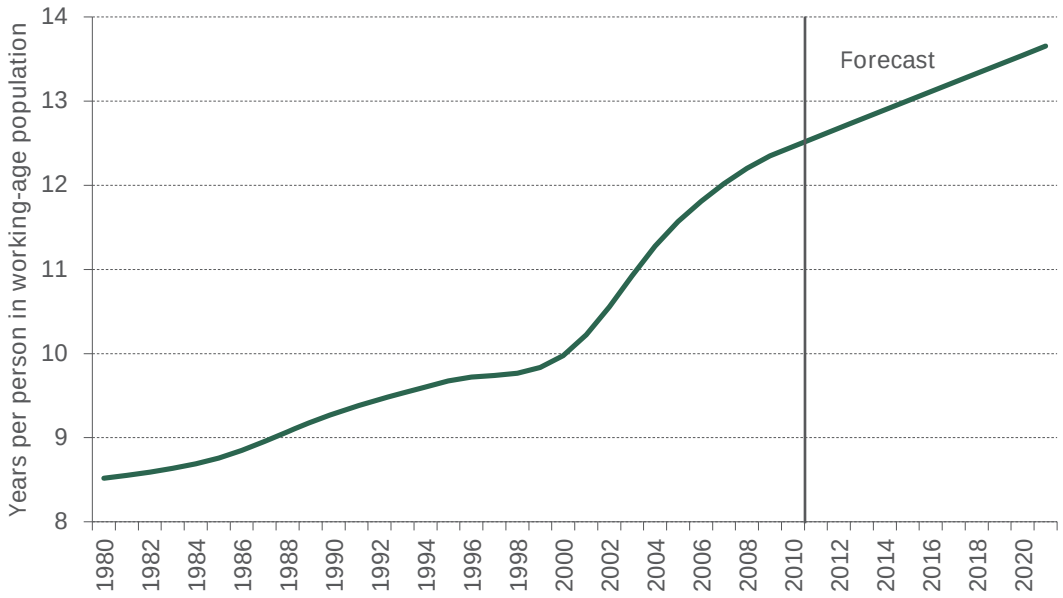
Bringing these factors together, we find that the contribution of labour supply to potential output growth is expected to be 0.3ppts a year over the period 2017–21. This is somewhat weaker than the 0.5ppts a year seen in both the 1996–2006 and 2007–16 periods.

Human capital

Our framework for estimating potential output differentiates the quantity of labour (discussed above) from the quality of the labour supply, i.e. the level of human capital. We use the average years of education (primary, secondary and tertiary)[10] in the working-age population as a proxy for the level of human capital. Since the mid 1990s, the average level of education has risen sharply, largely due to a surge in the number of people engaging in tertiary education (see Figure 2.13). This was particularly the case in the first half of this period, reflecting a widespread conversion of polytechnics to universities, followed by the post-1997 Labour government targeting a sizeable increase in the proportion of young people going to university.

Latterly, the rise in the number of people entering tertiary education has slowed. This is likely to reflect a range of factors, including the increased cost of attending university caused by 2012's substantial rise in tuition fees; the increased popularity of alternatives, such as apprenticeships; and the notion that we are probably reaching something of a ceiling in terms of the number of young people who would like to attend university. We estimate that this has resulted in human capital making progressively smaller contributions to potential output growth, moving from 0.6ppts per year in 1996–2006 to 0.3ppts a year from 2007 to 2016. We would expect this trend to continue over the next five years, although with those entering the working-age cohort at the bottom typically now being much better educated than those leaving at the top, the average level of education in the workforce should continue to increase, albeit at a slightly slower pace. As a result, the contribution of human capital to potential output growth is forecast to ease only slightly to 0.2ppts a year.

Figure 2.13. Average years of education per person



Source: Barro & Lee, Oxford Economics.

[10] Historical data interpolated from Barro & Lee data set, which provides estimates for 1950 to 2010 at five-year intervals (see http://www.barrolee.com/).

A forecast of potential output and the output gap

Bringing these factors together, we expect growth in potential output to average 1.5% a year between 2017 and 2021 (see Table 2.1). This is well below the average of the decade prior to the financial crisis (2.7%) and represents a modest step down on the 1.6% a year that we estimate was achieved between 2007 and 2016.

We expect GDP growth to average 1.8% a year over the 2017–21 period. Ordinarily, a sizeable output gap would be expected to foster stronger GDP growth, partly via more accommodative macroeconomic policy. However, the fiscal consolidation will weigh on GDP growth over the first half of the forecast horizon, with the OBR's latest forecasts implying that it will exert an average drag of 0.9% a year between 2017–18 and 2019–20. In our view, there is no reason why an output gap should have to close within a particular time frame, and in this case the headwinds to growth from the fiscal consolidation provide good reason to expect it to close at a slower pace than in previous cycles (when the deficit, and therefore fiscal tightening, was smaller). Given that interest rates are effectively at the lower bound and there are major question marks around the effectiveness of quantitative easing, we are sceptical that looser monetary policy would be particularly effective.

Our forecast for potential output growth is somewhat weaker than that of the OBR over the 2017–21 period (1.5% a year versus 1.9% a year). We attribute this to the fact that we have taken a view on how Brexit is likely to play out and that, as is demonstrated in Section 2.5, our assumptions around Brexit are at the more economically damaging end of the spectrum. By contrast, the OBR's forecast made no specific assumptions about either the nature of the UK's post-Brexit trading relationship with the EU or the way in which the government would employ any repatriated powers.

However, because we estimate that the permanent damage to potential output following the financial crisis was smaller (we estimate that potential output grew by 1.6% a year from 2007 to 2016, compared with the OBR's forecast of 1.3% a year), our forecast starts from a point where the level of potential output is higher than that of the OBR. As such, by the end of 2021, our estimate of the level of potential output is broadly the same as that of the OBR (see Figure 2.14).

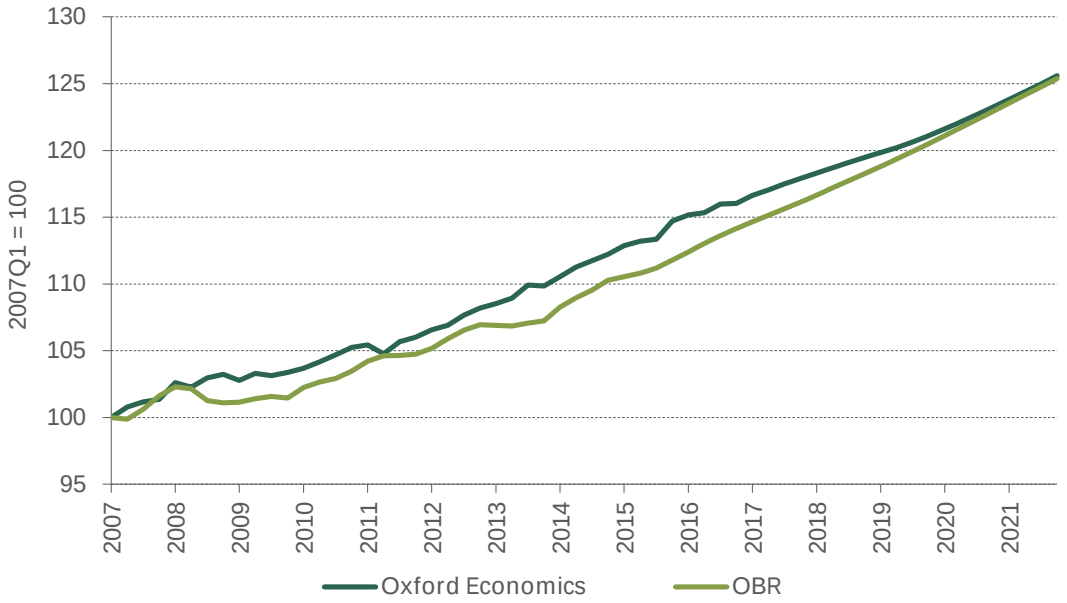
Table 2.1. Contributions to potential output growth (percentage points per annum)

	1996–2006	2007–16	2017–21
Labour	0.5	0.5	0.3
Capital	1.0	0.5	0.6
Human capital	0.6	0.3	0.2
Total factor productivity	0.7	0.3	0.4
Potential output	**2.7**	**1.6**	**1.5**
Actual GDP	**3.0**	**1.1**	**1.8**

Note: Columns may not sum exactly due to rounding.

Source: Oxford Economics.

Figure 2.14. Forecasts of potential output



Source: Oxford Economics & OBR.

Baseline forecast for the next five years

GDP growth is expected to average 1.8% a year over 2017–21 (see Table 2.2), though this masks two distinct halves to the forecast. As we explored in Section 2.2, the next couple of years are likely to see a period of slower economic growth as high inflation and the freeze on most working-age benefits squeeze household spending power. But over the second half of the forecast horizon, we expect to see the pace of growth accelerate. By that stage, the pressures on household finances should have eased, the fiscal consolidation is due to be largely complete and the uncertainties surrounding the nature of Brexit should have been resolved, with the UK in the midst of a transitional agreement that paves the way towards an FTA between the UK and the EU. In addition, the existence of a sizeable output gap should create the conditions for a period of faster growth, with inflation low and monetary policy still very accommodative.

Our expectations for the current cycle are significantly weaker than for previous cycles. This reflects the severity of the recession following the global financial crisis, the subdued nature of the subsequent recovery and our expectations that growth will remain relatively weak over the next five years. As of end-2016, GDP was 8½% above its 2008Q1 peak, which means that it is a long way behind where it was at the corresponding point of either of the previous two cycles (see Figure 2.15). Following the recession of the early 1990s, GDP was 20% above its previous peak by this stage, while the recovery of the early 1980s saw GDP around 22% above its previous peak by the same point.

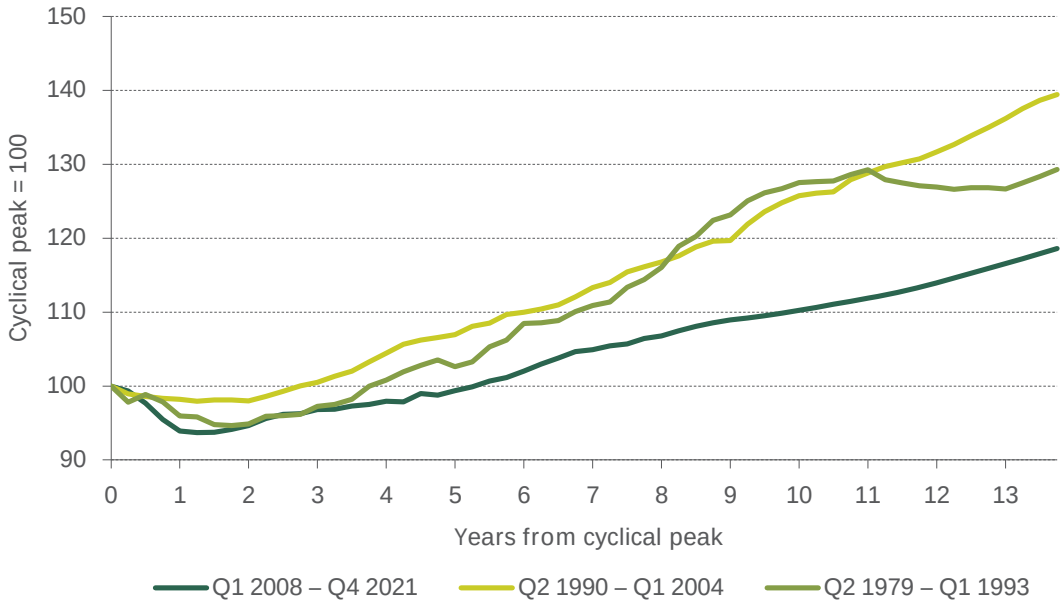
We estimate that the output gap was around 1¾% of potential output in Q4 2016. With the economy set to grow slightly more slowly than potential output over the next few years, the output gap should widen a little, before starting to close again over the second half of the forecast horizon. By the end of 2021, we expect it to have fallen to around ¾% of potential GDP (see Figure 2.16). This forecast suggests that once the influence of last year's steep depreciation of sterling has washed through, inflationary pressures will be subdued, meaning that the Bank of England will have scope to keep Bank Rate at 0.25%

Table 2.2. Oxford Economics UK forecast (annual % change unless stated)

	2015	2016	2017	2018	2019	2020	2021
Domestic demand	1.9	1.9	1.3	0.8	1.3	2.0	2.3
Private consumption	2.5	2.8	1.5	0.5	1.1	1.7	2.3
Fixed investment	3.4	0.7	1.2	2.4	3.4	4.8	3.6
Stockbuilding (% of GDP)	0.7	0.3	0.4	0.3	0.3	0.3	0.3
Government consumption	1.3	0.8	0.6	0.7	0.5	0.6	1.0
Exports of goods and services	6.1	1.1	2.3	3.4	3.3	2.9	2.8
Imports of goods and services	5.5	2.5	1.3	1.6	2.4	2.7	2.7
GDP	2.2	2.0	1.6	1.3	1.6	2.1	2.3
Industrial production	1.2	1.1	0.8	0.3	0.6	1.1	1.3
CPI	0.1	0.6	2.6	2.1	1.9	1.9	1.9
Current account balance (% of GDP)	–4.3	–4.8	–3.5	–2.4	–2.0	–1.9	–1.9
Short-term interest rates (%)	0.55	0.49	0.34	0.34	0.44	0.93	1.45
Long-term interest rates (%)	1.90	1.30	1.54	1.88	2.21	2.54	2.87
Exchange rate (US$ per £)	1.53	1.35	1.24	1.26	1.26	1.29	1.33
Exchange rate (euro per £)	1.38	1.22	1.21	1.24	1.21	1.21	1.21

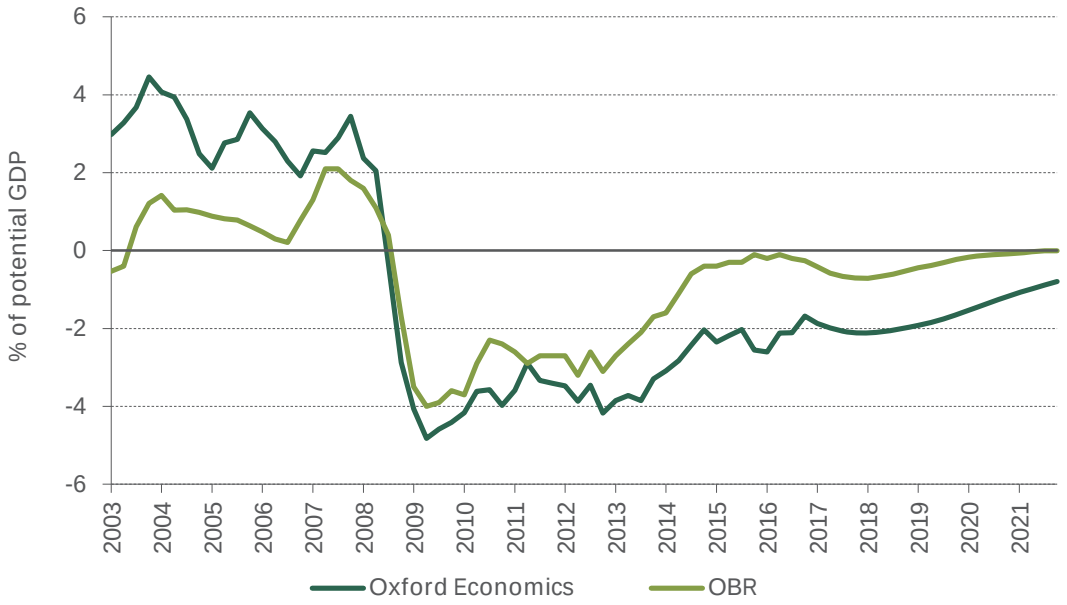
Source: Oxford Economics.

Figure 2.15. Comparison of UK economic cycles



Source: Oxford Economics & Haver Analytics.

Figure 2.16. Output gap



Source: Oxford Economics & OBR.

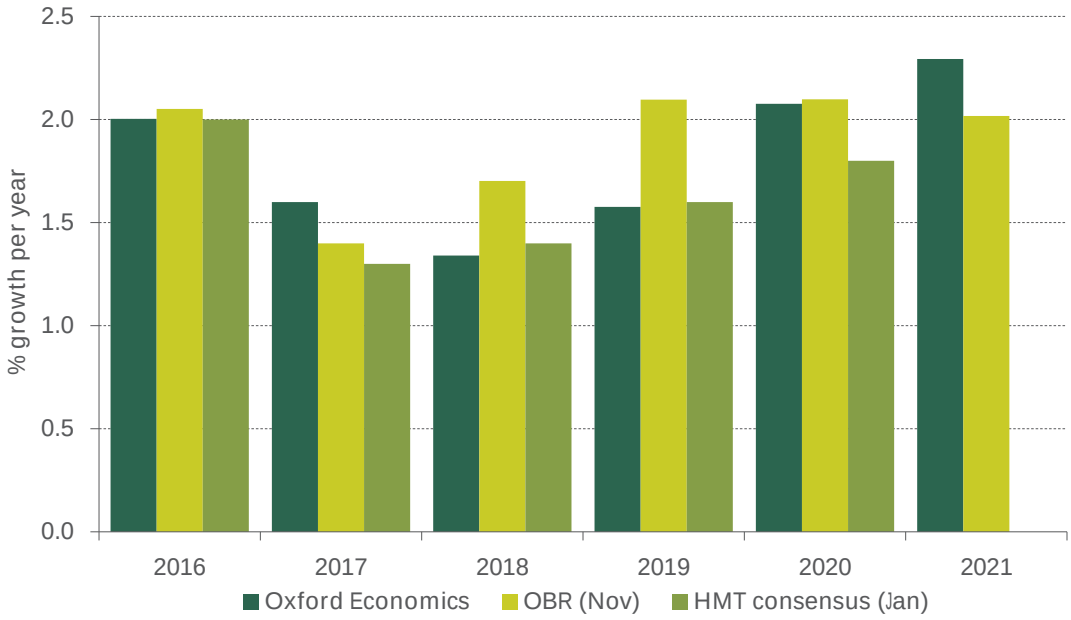
until well into 2019 and will subsequently be able to tighten policy at a very measured pace.

Our forecast shows a larger output gap than that of the OBR in 2016, to the tune of around 2ppts. This gap narrows through the forecast horizon because of the OBR's stronger forecast for potential output growth. However, the gap is still ¾ppt by the end of 2021. That our estimate for the size of the output gap is larger than the OBR's implies that there is scope for stronger economic growth to play a greater role in the government's attempts to reduce the budget deficit. This stronger economic growth could be achieved if the government relaxed the pace of fiscal consolidation, which is expected to exert a sizeable drag on economic growth over the next three years (as described in Chapter 3).

2.4 Comparison with other forecasts

Despite some differences from year to year, for the period 2017–21 as a whole there is little difference between the forecasts for GDP growth of ourselves (1.8% a year) and the OBR (1.9% a year). But the market consensus is significantly weaker (1.5% a year) (see Figure 2.17). The consensus has become far weaker for both the short and long terms since the vote to leave the EU in June 2016. Prior to the referendum, the consensus was for GDP growth of 2.1% in 2017 and for 2.1% a year over the 2017–20 period. Following the referendum, many forecasters expected to see an immediate recession and the consensus for 2017 GDP growth briefly dropped as low as 0.7%. It has since recovered to 1.3% but, in our view, this still looks too gloomy. Similarly, the market appears to have taken a particularly downbeat view about the likely impact of Brexit over the medium term, but if the UK is able to secure a transitional agreement with the EU we would expect any negative effects to be more modest and play out over a much longer time frame than the one under consideration for this forecast.

Figure 2.17. Comparison of GDP forecasts



Source: Oxford Economics, OBR, HM Treasury.

2.5 Assessment of the risks

With the UK about to commence its exit from the EU, the global political climate particularly turbulent and the legacy of the global financial crisis continuing to linger, we are in a time of virtually unprecedented uncertainty in the last 60 years surrounding future prospects. In this section, we analyse the most important sources of risk and assess how the UK economy could be affected if these risks play out.

Brexit

The main source of uncertainty facing the UK economy is around Brexit. Though Theresa May's speech on 17 January provided information about the government's vision of Brexit, thus far the EU has been tight-lipped about how it will respond and, thus, there remains significant uncertainty around how exit negotiations will play out. We set out our view of the most likely outcome in Section 2.3 but our scenario tree analysis suggests that this outcome has a relatively low probability of just 29%. Table 2.3 summarises the results of our scenario tree analysis and shows the probabilities we place on a range of different Brexit scenarios.

We identify a number of potential issues that could push the Brexit negotiations away from our baseline (Article 50 triggered in early 2017; three-year interim agreement after negotiations are completed; UK and EU ultimately agree an FTA) and towards one of the other scenarios from Table 2.3:

- **Nature of Article 50 negotiations.** The UK has suggested that it expects to be able to agree the framework of an FTA during the two-year period of Article 50 negotiations. However, commentary from the EU side has suggested that any trade negotiations will run separately and, with elections in a number of key EU countries this year and the European Commission's Chief Negotiator, Michel Barnier, suggesting that the

ratification process will shorten the period available for negotiations by up to six months,[11] the window for agreeing an FTA within the Article 50 period looks unfeasibly small. If this proves to be the case, then the government will be forced to accept that negotiations on a trade deal will continue beyond 2019 or will have to contemplate a 'clean break' and a reversion to trading under World Trade Organisation rules. It is also unclear whether the two sides will be able to agree on the size of the UK's 'divorce' bill, which the EU is rumoured to have estimated at £50 billion.[12]

- **Nature of transitional agreement.** We assume that any transitional arrangement is likely to look pretty similar to the status quo for two main reasons. First, the whole purpose of such an arrangement would be to minimise disruption, so in order to make it worth pursuing it would need to involve relatively little change. And second, the EU has made clear that any transitional deal that involves similar arrangements in terms of trade must also respect the remainder of the four freedoms – free movement of people, goods, services and capital. But this could cause political problems for the government as it would imply that it would contest the 2020 general election while under this transitional arrangement and, therefore, still subject to free movement of labour. Ensuring that the transitional agreement covers a relatively brief period – no more than three years – and is time-limited would help to mitigate this risk.

Table 2.3. Matrix of Brexit scenario probabilities

	EEA	Customs union	FTA	WTO
New relationship in place within three years	0%	1%	7%	14%
Interim arrangement leading into new relationship	2%	4%	29%	18%
Lengthy delay before Article 50 is triggered	0%	1%	8%	6%
Total probability of ultimate UK–EU trade deals	2%	6%	44%	39%
Probability that UK remains in the EU over the longer term	10%			

Key: EEA – membership of European Economic Area.
Customs union – UK remains in customs union and maintains the Common External Tariff.
FTA – free trade agreement for goods but there are non-tariff barriers.
WTO – trade with EU according to World Trade Organisation rules.

Source: Oxford Economics.

[11] 'EU Brexit chief Barnier warns UK has less than two years to agree exit', FastFT, 6 December 2016, https://www.ft.com/content/791214dd-eabf-35ff-8cba-64bc2d322e1f.

[12] 'Theresa May is warned that a £50bn "Brexit bill" will be "one of the first issues" in the negotiations', *Independent*, 15 December 2016, http://www.independent.co.uk/news/uk/politics/theresa-may-brexit-50bn-eu-a7478126.html.

- **Customs arrangements.** The UK has made clear that it intends to leave the EU customs union in order to have the flexibility to agree FTAs with third countries. However, it has also suggested that it would like to avoid a hard border in Ireland and avoid the administrative costs (on both businesses and the government) that would be caused by physical customs checks. This implies that the government will seek some form of customs agreement with the EU alongside the planned FTA. That the EU has a customs agreement with Turkey provides some hope in this respect, although the EU–Turkey agreement covers only industrial goods and imposes a common external tariff on those goods.[13] In addition, the UK's desire to agree FTAs with countries that do not currently have an FTA with the EU may provide further complications in this respect as it implies the need for extensive 'rules of origin' checks.

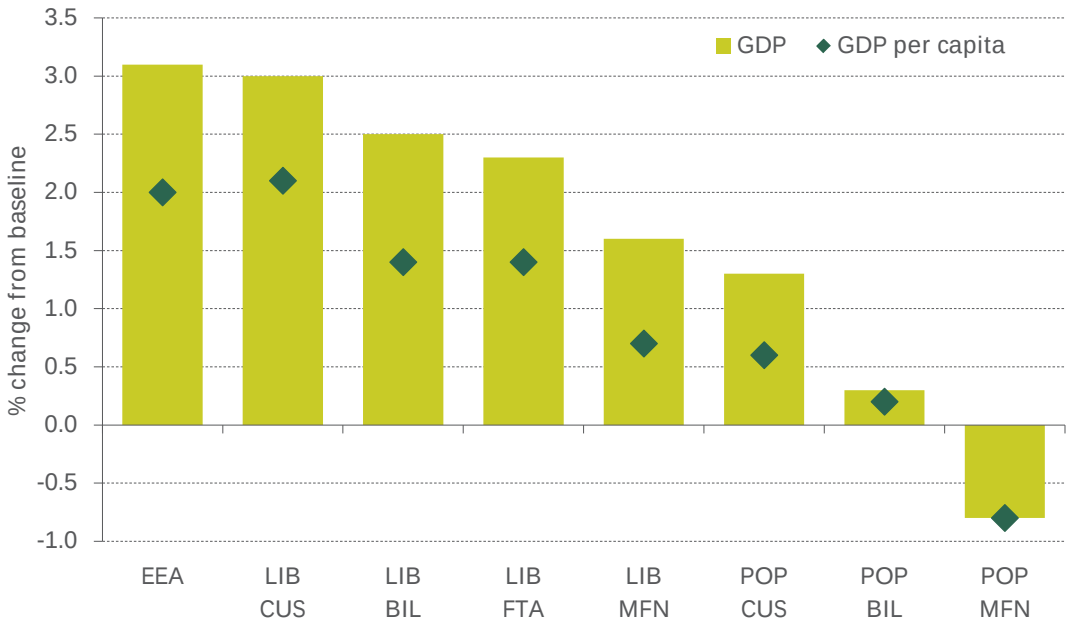
- **Content of FTA.** The prospects for an FTA would appear to vary according to the sector involved. For sectors where the UK runs a large trade surplus, such as financial services, the motivation for the EU to agree tariff- or barrier-free trade might be weak and vice versa in sectors where the UK runs a large deficit with the EU, such as food & beverages. In addition, an FTA would require ratification from the 27 national governments and some regional administrations and, as the recent challenges involving the ratification of the Comprehensive Economic and Trade Agreement (CETA) between the EU and Canada demonstrate, this will be no easy feat. The UK government is likely to have to accept that any comprehensive agreement across a range of sectors will take some time to negotiate and will probably require a number of concessions in order to satisfy the needs of the individual EU members. It is possible that rather than agreeing a comprehensive FTA, a series of sectoral agreements might be more desirable. Or alternatively, the UK government might conclude that the political costs of engaging in a lengthy process that involves numerous concessions outweigh the benefits of agreeing an FTA and decide to walk away.

With respect to the time horizon studied in this report, the transitional agreement is likely to represent the most important source of uncertainty. If the government were unable to agree a transitional deal and reverted to trading with the EU under WTO rules upon exit in 2019 – the scenario to which we attribute the third-highest probability (14%) – this could cause some instability in 2019 as firms have to adapt to the new trading environment – including the imposition of tariffs on exports to the EU – at short notice. This is the so-called 'cliff edge' effect that the government has been keen to try to avoid. If there is no transitional agreement, or any agreement does not force the UK to continue to allow free movement of labour from EU countries, then we would also expect to see lower levels of inward migration from 2019, which implies weaker growth in potential output.

The consequences of most of the other alternative Brexit outcomes are likely to fall outside of our forecast horizon as they will generally build over time. An example of such an effect would be non-tariff barriers – initially UK firms would be fully compliant with EU regulations, but over time we would expect to see a degree of regulatory divergence which would compromise the ability of UK firms to export to the EU market. Our research

[13] For further information on the EU–Turkey customs agreement, see http://ec.europa.eu/trade/policy/countries-and-regions/countries/turkey/index_en.htm.

Figure 2.18. The impact of different Brexit outcomes on real GDP and GDP per capita in 2030, relative to our baseline assumption



Key: Policy direction: LIB – liberal;
POP – populist.
Trade agreement: EEA – membership of European Economic Area;
CUS – part of EU customs union;
FTA – UK–EU free trade agreement;
MFN – trade with EU according to WTO Most Favoured Nation rules;
BIL – bilateral accords.

Source: Oxford Economics.

looked at the impact on the levels of GDP and GDP per capita in 2030 and the summary results are shown in Figure 2.18.

There are two dimensions to these scenarios: the ultimate trade agreement between the UK and the EU and the way in which the UK government uses its newly-repatriated powers. Our research found that our baseline forecast was at the more economically-damaging end of the spectrum of Brexit outcomes, with only a reversion to WTO rules being more damaging over the longer term. The scenarios that would generate the best outcomes for activity are generally those that are closest to the status quo and are largely those to which we attribute the lowest probabilities in Table 2.3.

Meanwhile, 'populist' policies in areas where the UK would now be able to set its own policy course would generate worse outcomes than more liberal, pro-business, policies (e.g. limited restrictions on free movement of labour and more aggressive deregulation). The most important of these policy areas is immigration; given the importance that the government has placed on being able to control immigration levels, we would be surprised if it did not pursue populist policies in this area, seeking to reduce the levels of immigration from both EU and non-EU countries.

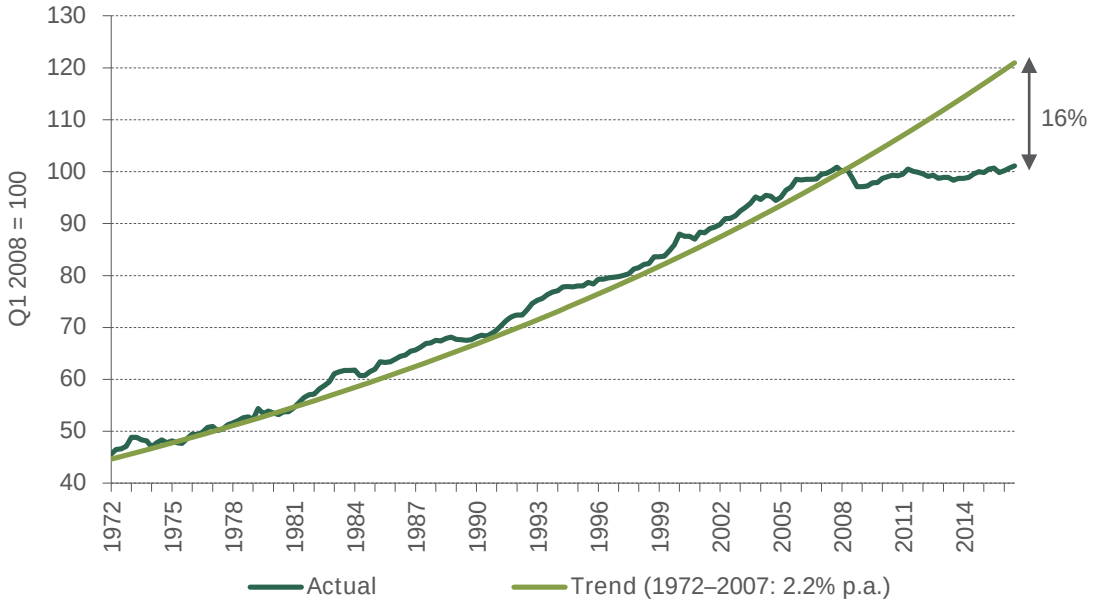
Domestic risks

Aside from Brexit, there remains considerable uncertainty surrounding two issues that could be considered as legacies from the global financial crisis.

The first of these is household indebtedness. Though households have deleveraged since the beginning of the financial crisis, of late the household debt-to-income ratio has started to flatten off at levels that remain some way above the levels seen before the pre-crisis surge in borrowing. Our forecast assumes that the level of household debt rises slightly more slowly than household incomes through the forecast horizon, with the prospect of interest rate rises making consumers reluctant to releverage and the Bank of England's Financial Policy Committee (FPC) keeping a close eye on the market, discouraging lenders from excessive behaviour. If debt levels did start to rise at a faster pace than household incomes, it could generate faster economic growth in the short term. But it would also threaten an abrupt slowdown if interest rates rose and households struggled to manage the higher debt levels, which, in turn, would threaten financial stability. In contrast, if the FPC were to decide that the recent very strong growth in unsecured lending was undesirable, it could intervene to restrict lending this year. This would add to the downward pressures on economic growth in the short term, although it would leave consumers better placed to support growth further out.

The second major source of uncertainty surrounds future trends in productivity and, by extension, employment. The productivity performance since the financial crisis has been dismal, with output per hour now around 16% below where it would have been had the pre-recession trend continued (see Figure 2.19). With productivity putting in another weak performance in 2016, we have scaled back our expectations for future developments relative to last year's Green Budget. We now assume that the economy will struggle to return to pre-crisis rates of productivity growth, meaning that the level of productivity moves ever further below the pre-crisis trend. But that forecast still implies some improvement in growth rates from the recent past, so even this assumption may prove

Figure 2.19. Output per hour



Source: Haver Analytics, Oxford Economics.

too optimistic. If this is the case, then the scope for job creation in the short term may be higher as demand for labour remains firmer, providing some upside for consumer spending. But on the flip side, this would imply weaker potential output growth and, as such, poorer medium-term growth prospects.

External risks

As we established in Chapter 1, there are significant risks to our global forecasts for 2017 and beyond. In the rest of this section, we look at the two alternative scenarios for the global economy set out in Chapter 1 and consider how they might affect the UK.

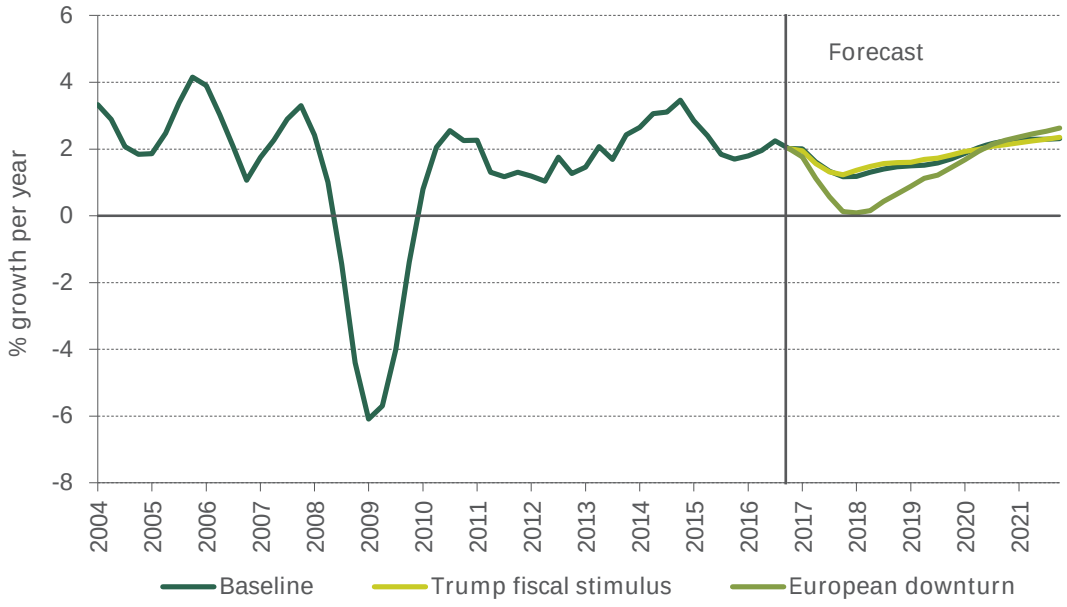
US growth surges amid Trump fiscal stimulus

There is significant uncertainty around how Donald Trump's election as US President will affect US economic policy, not least because some of the policies that he championed on the campaign trail appear to be at odds with the wishes of Congress. Our baseline forecast assumes a compromise between President Trump and Congress, with a modestly expansionary fiscal package and targeted trade protectionist measures. But it is possible that congressional negotiations result in a significantly more expansionary fiscal package than assumed in the baseline, with the quid pro quo being that President Trump accepts a less protectionist trade stance than he campaigned on.

This scenario sees US growth accelerate, which spills over to global markets, which benefit not only from stronger demand but also from an improvement in consumer and business confidence. With the US being an important trading partner, the UK would be particularly well placed to benefit from stronger US demand and, as a result, sees stronger GDP growth in the near term.

However, the consequences of more expansionary US fiscal policy are more aggressive tightening of monetary policy from the Federal Reserve and a stronger dollar. Therefore, whereas our baseline forecast shows UK inflation dropping back once the effects of the

Figure 2.20. GDP forecasts for alternative scenarios for the UK economy



Source: Haver Analytics, Oxford Economics.

post-referendum depreciation of sterling have washed through, this scenario shows the further depreciation keeping inflation some way above the Bank's 2% target and the MPC responds by raising interest rates more quickly than in the baseline. The squeeze on the household sector from higher inflation and interest rates mitigates some of the benefits of stronger export demand. Therefore, the boost to UK GDP growth is modest, averaging 1.6% a year in 2018–19 compared with the baseline forecast of 1.5% a year (see Figure 2.20).

Banks and Brexit hit European activity

In our downside scenario, we explore how a more turbulent Brexit and structural banking problems in the eurozone could result in a lower trajectory of growth for Europe as a whole. The Article 50 negotiations get off to a challenging start, causing sterling to fall further. In addition, the degree of pass-through of the weaker pound to inflation is assumed to be higher than in the baseline, and these factors drive the CPI measure of inflation close to 5% at the start of next year.

These increased inflationary pressures intensify the squeeze on household spending power, causing consumer spending to fall by 1% in 2018. And though the weaker pound results in an improvement in competitiveness, any boost from this source is offset by the impact of weaker eurozone demand, as problems in the banking sector weigh on the supply of credit and constrain activity. With the consumer faltering and little offset from other components of expenditure, UK GDP growth grinds to a halt in H2 2017. Growth averages 0.9% in 2017 and just 0.3% in 2018, compared with 1.6% and 1.3% respectively in the baseline (see Figure 2.20).

2.6 Conclusion

The performance of the UK economy in 2016 was broadly in line with expectations, with GDP growth coming in at 2.0%, compared with a forecast of 2.2% in last year's Green Budget. However, this relatively benign outcome masked significant in-year developments, with the economy proving to be far more resilient than many economists had feared after the vote to leave the EU. However, we expect the economy to endure a softer patch over the next few years. Of late, growth has been heavily reliant on the consumer, but this looks unsustainable given that the sharp depreciation of the pound is likely to result in a period of much higher inflation, squeezing household spending power.

The medium-term outlook is subdued. The combination of a period of relatively weak business investment, slowing levels of immigration, the impending break to increases in the state pension age and the persistent weakness in productivity growth leads us to expect potential output growth of just 1.5% a year between 2017 and 2021. This would represent a modest deceleration compared with the 2007–16 period (1.6% a year) but a substantial slowdown relative to the decade prior to the global financial crisis (2.7% a year). A sizeable output gap will allow GDP growth to be firmer (1.8% a year from 2017 to 2021), though growth could be stronger still were it not for the fiscal consolidation, which is expected to exert a sizeable drag on economic growth over the next three years.

The imminent start of the negotiations around the UK's departure from the EU means that there is a large degree of uncertainty around future prospects. Assuming that the government is able to agree a transitional arrangement with the EU, the impact of Brexit

within the forecast horizon being studied in this report (to 2021) is likely to be relatively minor, although our research points to the negative effects escalating over time. Brexit is not the only source of uncertainty surrounding the forecast. Domestically, it is unclear how high household indebtedness and weak productivity growth – both legacies of the global financial crisis – will impact on growth prospects. And externally, while a stronger US fiscal stimulus might provide some support to UK activity, we are also concerned about the scope for the problems in the eurozone banking sector to come to the fore once again. If these problems were to coincide with turbulence in the Brexit negotiations, we could see UK GDP growth grind to a halt by late 2017.